



MINISTRY OF EDUCATION

**YGTHO**

YAYASAN GURU TUN HUSSEIN ONN

# E-PROCEEDINGS

# 4<sup>th</sup> ICELAM 2025

## INTERNATIONAL CONFERENCE ON EDUCATIONAL LEADERSHIP AND MANAGEMENT

Values-Driven Leadership  
in the World of Education

**26-29 Oct 2025**

Institut Aminuddin Baki  
Bandar Enstek, Negeri Sembilan  
Malaysia





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## FOREWORD

**YBRS. EN. AB AZIZ BIN MAMAT (K.M.W)**  
**DIRECTOR OF INSTITUTE AMINUDDIN BAKI**



It is with great pleasure that I extend a warm welcome to all participants of the 4th International Conference on Educational Leadership and Management (ICELAM). Organized by Institut Aminuddin Baki, this conference provides an essential platform for scholars, practitioners, and policymakers to engage in meaningful and long-awaited dialogues on the critical role of values in educational leadership. It serves as a platform to share innovative practices, exchange insights, and cultivate networks that transcend boundaries. We hope the discussions will inspire creative and critical perspectives, contributing to a more values-driven educational leadership that further strengthens the provision of quality education globally.

The theme 'Values-Driven Leadership in the World of Education' resonates deeply with our current educational landscape in Malaysia and around the world. In a world that is increasingly complex and fast-changing, values serve as the compass that guides leaders in making ethical decisions, inspiring others, and building resilient learning communities. As educators and leaders, we must anchor ourselves in integrity, empathy, inclusivity, compassion, and service to nurture holistic and future-ready learners. This conference brings together distinguished speakers and presenters from diverse contexts, who will share their insights, research, and best practices. May their contributions ignite fresh thinking and foster collaborative actions that advance the global discourse on transformational and value-based leadership in education.

I want to thank all those who have contributed to the success of this conference. May your engagement in this conference be enriching, enlightening, and empowering. Let us continue to champion leadership that not only delivers significant results but also upholds the values that matter most.

Happy conferencing!

## **PREFACE**

It is with great pride that the Proceedings Committee presents the e-proceedings from the 4th International Conference on Educational Leadership and Management 2025 (4th ICELAM 2025). This publication serves as a comprehensive record of research and professional insights shared during the conference. The conference gathered a diverse community of educational leaders, researchers, practitioners, and policymakers dedicated to advancing the field of educational leadership and management. The central theme of our discussions is 'Values-Driven Leadership in the World of Education'. This theme highlights the importance of school and system leaders grounding their decisions, policies, and practices in robust ethical foundations.

In an era defined by rapid technological change, evolving societal needs, and global challenges, the need for principled, values-led educational leadership and management is more pressing than ever. The papers herein explore how leaders can foster environments that prioritize integrity, equity, accountability, and sustainable excellence. These e-proceedings feature a total of 68 selected papers, organized under five distinct thematic areas. Every included paper has successfully navigated a rigorous double-blind peer-review process, ensuring the highest standards of academic credibility and methodological soundness. This collection will stimulate further research and provide actionable strategies for educational improvement.

The success of the 4th ICELAM is a direct result of collaborative commitment. We extend our sincere gratitude to the Institut Aminuddin Baki, and most importantly, we express our profound appreciation to the authors, reviewers, presenters, and participants whose expertise and spirited engagement made this conference a significant milestone. The research contained within these pages will guide and inspire the next generation of values-driven leaders in education.

Thank you.

*4th ICELAM 2025 Proceedings Committee*



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# THE ROLE OF ARTIFICIAL INTELLIGENCE (AI) IN SCHOOL LEADERS' INSTRUCTIONAL LEADERSHIP PRACTICES IN FOUR STATES, MALAYSIA

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**Abstract:** *This study explores the role of artificial intelligence (AI) in enhancing instructional leadership practices among school leaders in four Malaysian states, in alignment with the demands of the Fifth Industrial Revolution (5IR). As education increasingly embraces digital transformation, AI integration is crucial in developing digitally fluent students and equipping leaders to meet evolving educational needs. Grounded in Hallinger's (1985) instructional leadership framework and the Explainable AI (XAI) model by Arrieta et al. (2020), the research focuses on three objectives: (1) identifying the types of AI tools used by school leaders, (2) assessing the current level of instructional leadership practices, and (3) determining the extent to which AI contributes to these practices. Data were gathered by questionnaires and analysed using SPSS Version 18.0. Descriptive statistics (frequency, percentage, mean, and standard deviation) were used for background and leadership data, while multiple regression analysis identified significant AI contributors. Findings reveal ChatGPT as the most widely adopted AI tool (90.9%), followed by the local Tanya Buku application (58.8%). The overall level of instructional leadership practice was low to moderate ( $M=2.67$ ), with AI being most used in setting school goals ( $M=2.78$ ). Regression analysis confirmed six AI tools—including In video AI, Suno AI, Kahoot, and Magic School—as significant contributors to effective instructional leadership. This study highlights the potential of AI to transform leadership practices in Malaysian schools and proposes the development of AI-integrated instructional leadership models to support more effective and future-ready school management.*

**Keywords:** *artificial intelligence (AI), instructional leadership, Malaysian, schools, states*

## 1. Introduction

The Covid-19 pandemic began a sharp and unprecedented acceleration in the digitalization of teaching and learning (Garcia et al.). School leaders, teachers, and students had to adapt quickly to virtual classrooms with online resources, synchronous and asynchronous instruction, and remote support (Harris & Jones, 2020). Fast forward to today, and the rise of artificial

intelligence (AI) is the latest global force to radically redefine the nature of learning and teaching (Dobrin, 2023). The era of digitalization has redefined the roles of leaders and teachers in the learning process in the classroom; now, teachers are changing their roles to become facilitators.

As a result of a study by Wahyu and Yudi (2024) on instructional leadership and learning tools in the classroom, school principals play a role in engaging in various exercises and discussions using mobile devices to maintain and even increase teachers' creativity and build a learning culture. Furthermore, it makes it an organizational philosophy, an appreciation of the achievement of good teacher performance in a certain period, and an evaluation in each period to give feedback to the teacher. This proves that instructional leadership and AI combined are capable of increasing teacher creativity.

Many studies show that teachers do not have sufficient technological and pedagogical knowledge about artificial intelligence (Wei, 2021; Yilmaz et al., 2020). A study by Pinar Ayyildiz and Adem Yilmaz (2023) stated that many components of the process must be considered when designing an artificial intelligence application curriculum to be adopted towards developing writing skills at the K-12 level. With the help of in-service training, teachers need to renew themselves and acquire new skills (Lindner & Berges, 2020). The provision of professional development practices within the scope of the TPACK (knowledge of technology, pedagogy, and content) model for teachers has been recommended in literature reviews towards this goal (Gutiérrez & Henriques, 2020; Wei et al., 2020).

Application supervision and control software, such as artificial intelligence control detectors developed by OpenAI, should be created and disseminated (Sevgi & Yilmaz, 2023). It should not be forgotten that the application of artificial intelligence can be used in the manner of competent teachers at every step of the educational process, and it is very important to raise public awareness of artificial intelligence and of ethical and moral rules. Currently, it is strategic to start a study on the content of artificial intelligence applications, training curriculum, legal use, restrictions, protection of personal data, and respect for privacy. These initiatives must be protected by national laws and regulations and, ultimately, internationally.

The development of AI has advanced, and in recent years, the creation of AI technology has had a direct impact on education at all levels, such as ChatGPT (Tajik & Tajik, 2023). This latest AI technology, and the technology that will surely follow it, is already starting to change the educational landscape. The digital era provides a new role for information technology to assist teachers in the classroom. Teachers cannot survive alone and shut themselves off from information technology in a sophisticated world accompanied by teaching Generation X, who have been born in a sophisticated era. Information technology is the main skill for teachers in the learning process, and the application of instructional leadership in the learning process is seen to improve the quality of learning.

AI is related to instructional leadership, morally revealing the need for a more creative, diverse, and innovative way of thinking that could potentially be triggered using its many tools, and this technology has the opportunity and benefit to assist humans in the next phase of evolution (Harris & Jones, 2023). So, it's hard to see how AI can authentically replace this core human leadership function. It requires school leaders to constantly adapt and develop their technological knowledge and skills simply to stay ahead. AI in education through several technologies such as intelligent tutoring systems, adaptive teaching and learning, large-scale assessment and assessment design, predictive modelling and learning analysis, educational

games, virtual and augmented reality, and several other forms of AI-assisted and enhanced teaching (Guan et al., 2020). Research so far proves that AI can improve the learning environment by boosting enthusiasm, boosting teacher and student creativity, promoting better classroom management, or supporting customized learning (Colchester et al., 2017; Huang et al., 2021; Papadakis et al., 2024; Wang, 2021).

Recent developments in the world of AI have become the centre of discussion about AI-integrated education, especially after the launch of ChatGPT, an AI-based universal model capable of engaging in human-like conversations to discuss or solve a variety of complex questions (Chen et al., 2020; Fullan et al., 2023). Similarly, the COVID-19 pandemic situation initiated a rapid increase in the use of digital technologies such as virtual online classrooms and social media platforms (Harris & Jones, 2020), which have begun to redefine and transform the nature of blended learning and teaching (Garcia et al., 2023).

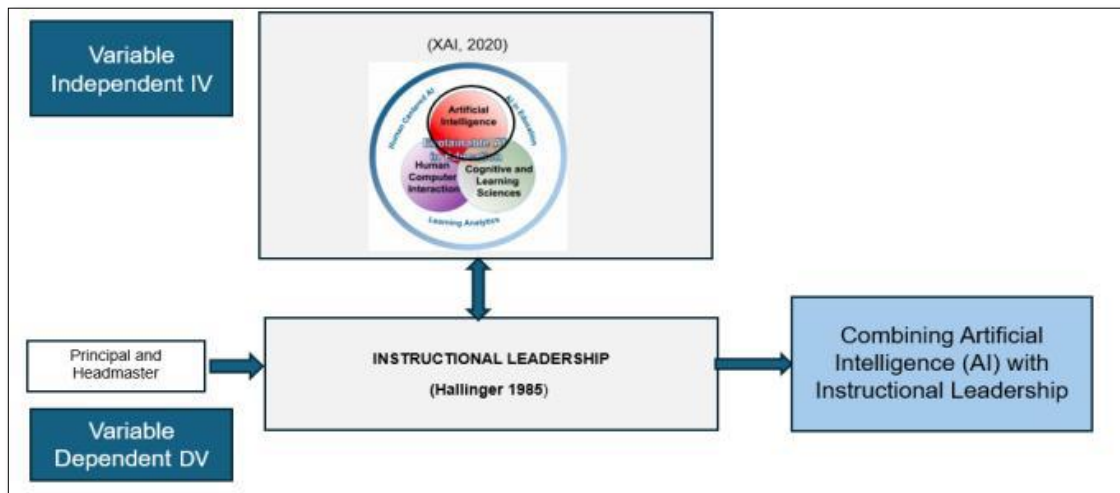
Principals who have low motivation do not implement the integration of information technology in the learning process (Wahyu and Yudi, 2024). This shows that principals' motivation needs to be increased through the digitization of the International Centre for Leadership in Education's model, (Sheninger, 2019) in three of the seven pillars, namely student engagement and learning, learning space and environment, and professional learning and growth (Sheninger, 2019). The role of the principal is to be an instructional leader, which is a leader who focuses on the quality of learning with optimal management of the school's main inputs, namely the students and the learning process.

Leadership will lead to the academic improvement of students, and this, of course, has to do with innovation in learning. The integration of artificial intelligence (AI) and instructional leadership is the main point in this study. Therefore, due to the lack of studies in Malaysia that directly look at the role of instructional leaders with artificial intelligence, it is important to conduct this study.

The purpose of the study was to see the extent of the role of artificial intelligence in the practice of instructional leaders. 1. Identify artificial intelligence among school leaders in Malaysia, 2. To identify the level of instructional leadership practice of school leaders in Malaysia and 3. Identify artificial intelligence (AI) that contributes to the instructional leadership practices of school leaders in Malaysia.

The framework is constructed by combining the 10 dimensions of the learning variables (Hallinger and Murphy, 1985) and XAI (2020), which is only AI-focused.

**Figure 1: Study framework by Hallinger and Murphy (1985) and XAI (explainable artificial intelligence—Arrieta, Díaz Rodríguez, Ser, Bennetot, Tabik, Barbado, Garcia, Lopez, Molina, Benjamins, Chatila & Herrera, 2020)**



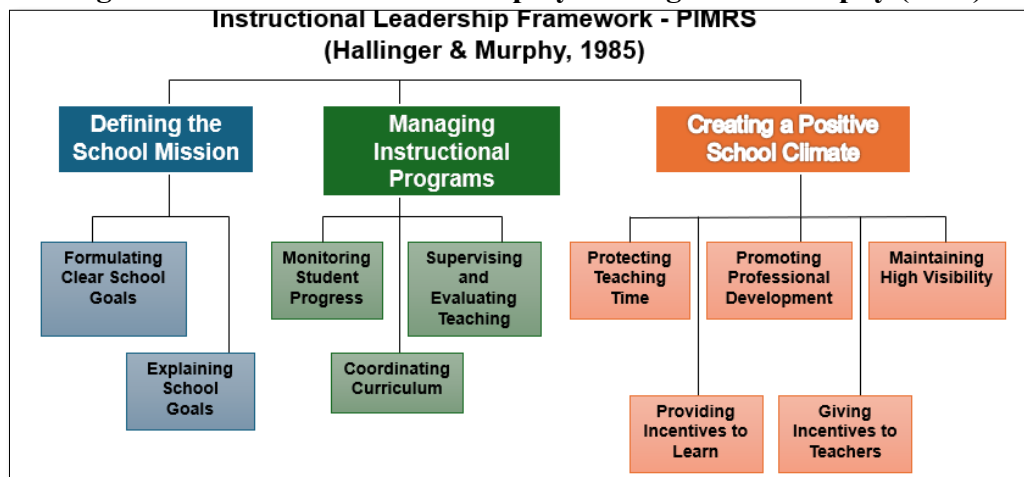
## 1. Literature Review

For this study, the literature review conducted looked at the aspects of artificial intelligence (AI) in instructional leadership.

### Instructional Leadership

Hallinger (2000) defined instructional leadership as comprising three core dimensions: (i) defining the school's mission, (ii) managing the instructional program, and (iii) promoting a positive school learning climate. These dimensions were initially conceptualized by Hallinger and Murphy (1985) and are often referenced in discussions of effective school leadership.

**Figure 2 Instructional Leadership by Hallinger and Murphy (1985)**



According to their framework (Figure 2), ten key elements are associated with these dimensions: formulating school goals, clarifying school goals, supervising and evaluating teaching, coordinating the curriculum, monitoring student progress, maintaining teaching time, promoting professional development, maintaining learning support, and providing incentives for both teachers and students.

In the Malaysian context, the Ministry of Education (2007) defines instructional leadership as a school leader who prioritizes teaching and learning while fostering a conducive school

climate. This emphasis was further reinforced in the National Key Results Areas (NKRA) policy (Ministry of Education, 2010), which highlights the principal's role in teacher development and in planning, coordinating, and evaluating instructional practices. The policy underscores the critical role of school leaders in ensuring effective teaching and learning processes that ultimately contribute to national educational outcomes (Prime Minister's Department, 2010).

Scholars have expanded on the concept of instructional leadership. Hallinger (2000) contends that instructional leaders must possess deep knowledge and expertise in teaching and learning, enabling them to guide teachers and align school goals with instructional practices. Fullan (2009) adds that effective instructional leaders must not only understand their schools thoroughly but also remain well-informed about the broader education system. Further elaborate that while teachers are expected to possess curriculum and pedagogical expertise, principals are responsible for creating a positive learning environment and equipping themselves with instructional leadership skills.

Mitchell and Castle (2005) introduce three dimensions influencing instructional leadership: style, coherence, and structure. The structural dimension is particularly important as it integrates the school's purpose, organizational framework, and social networks, all of which impact leadership effectiveness (Hallinger & Heck, 2003). Hallinger and Heck (2010) assert that instructional leadership involves a commitment to improving school quality, fostering development, and enhancing student learning. In their study on collaborative leadership models, they found that only the reciprocal effects model had a significant impact on school effectiveness and student outcomes. As such, contemporary educational leadership increasingly emphasizes collaborative instructional leadership, where responsibilities are shared among all staff members rather than resting solely with the principal (Fullan, 2009; & Hallinger, 2009).

Building on these established definitions and adapting them to current educational needs, this study defines instructional leadership as encompassing four main dimensions: (i) defining and shaping school goals, (ii) managing instructional programs, (iii) promoting a positive learning climate, and (iv) creating a friendly and mutually supportive school environment. These four dimensions are further divided into seventeen specific elements: 1. Defining and Shaping School Goals: Formulating and clarifying school goals, Communicating school goals. 2. Managing Instructional Programs: Supervising and evaluating instruction, Coordinating the curriculum, Monitoring student development, Promoting high-quality teaching. 3. Promoting a Learning Climate: Protecting instructional time, Maintaining high visibility, Providing incentives to teachers, Supporting professional development, Providing incentives to students, Establishing positive academic expectations. 4. Creating a Supportive School Environment: Ensuring a safe and orderly learning environment, Encouraging meaningful student engagement, Fostering collaboration among staff, Acquiring external resources to support learning goals, Strengthening home-school partnerships

In conclusion, instructional leadership is a dynamic and evolving concept. This practice becomes inherent within schools when the entire school community collectively strives to enhance the quality of teaching and learning.

## **Artificial Intelligence (AI) in Education**

Explanations in the context of education vary according to stakeholders and their respective goals. Educators, for instance, must offer clear and purposeful feedback tailored to students, parents, or government bodies. Whether it's providing individualized student feedback, offering diagnostic insights to improve classroom instruction, or consulting with parents to support learning, the role of explanation remains fundamental to educational success.

Feedback is a key explanatory process in education. For students, feedback commonly includes guidance on improvement, encouragement for self-monitoring, and evaluative comments aimed at learning enhancement (Hattie & Timperley, 2007). This type of feedback fosters the development of subject knowledge, self-regulation skills, and student identity. Moreover, it functions relationally—teachers build students' motivation, confidence, and self-esteem through thoughtful, constructive feedback (Price et al., 2010; Nicol & Macfarlane-Dick, 2006).

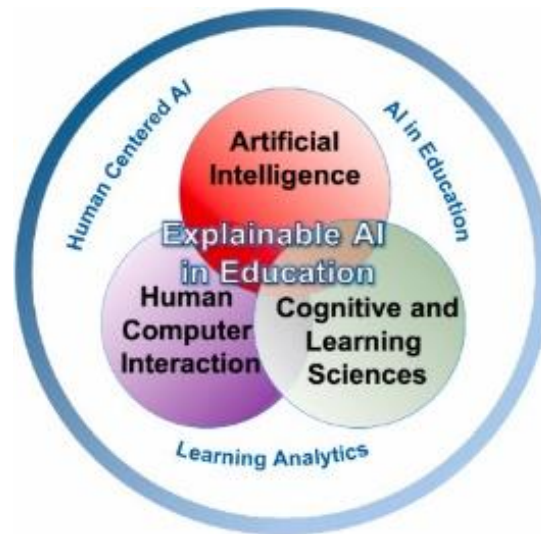
For teachers, feedback serves as a tool for evaluating the effectiveness of their teaching practices, lesson design, and support mechanisms. Data such as grade distributions, attendance records, student surveys, parent-teacher communications, and peer reviews contribute to reflective teaching. This process supports the concept of the "scholarship of teaching" (Boyer, 1990), whereby teachers, through reflection, strengthen their instructional, pedagogical, and curriculum knowledge (Kreber, 2005), ultimately leading to improved teaching effectiveness.

At the institutional level, explanatory data is used to guide school management and continuous improvement. This includes information such as student enrolment, academic outcomes, staff qualifications, research outputs, institutional income, and teacher-student ratios. Business intelligence tools are often employed to analyse this data, assisting school leaders and administrators in decision-making (Drake & Walz, 2018). These tools are crucial in enabling educational leaders to make informed judgments and strategic plans.

As previously discussed, the role of Artificial Intelligence (AI) in education aligns with its broader societal applications but also presents unique challenges and opportunities. As shown in Figure 3, AI in education draws from established domains such as AI research, human-computer interaction, and emerging areas like human-centered AI. These disciplines contribute to the design of educational technologies that are both intelligent and explainable.

Importantly, AI in education must also be grounded in educational theory and learning science. Interdisciplinary fields such as learning analytics and AI in education (AIED) explore how AI can support learning processes and enhance teaching practices, often through theory-based models of cognition, motivation, and engagement.

**Figure 3: Areas related to AI that can be explained in education**  
(Source: Arrieta et al., 2020)



Although AI is not new (Mitrovic, du Boulay, & Yacef, 2023; Selwyn, 2020), its prominence in education has surged recently, largely due to generative AI (GenAI) tools like ChatGPT (Chen et al., 2020). Developed by OpenAI, ChatGPT has sparked important discussions around ethical, technical, and pedagogical implications, significantly influencing how teaching and learning are perceived and practiced.

Recognizing this shift, UNESCO (2021) urges that students be prepared for a future shaped by AI. GenAI tools should be incorporated into curriculum policies to reflect their growing relevance. Similarly, the European Commission (2022) emphasizes that AI is becoming ubiquitous—not only in society but within education itself. From decision-making to daily instruction, AI technologies are reshaping educational institutions. AI enhances personalization in learning, supports tailored assessments, and provides data-driven insights into student development. The influence of AI in education is no longer theoretical—it is transforming classrooms, universities, and educational leadership.

## 2. Research Methodology

This study adopts a quantitative survey research design, enabling the collection of data directly from respondents and allowing for generalization to the wider population (Creswell, 2008). A structured questionnaire serves as the primary data collection instrument, designed to investigate the integration of artificial intelligence (AI) in instructional leadership practices across four Malaysian states. The questionnaire incorporated 32 AI tools, selected from the official list of AI tools available on DELIMa, the Ministry of Education’s digital learning platform.

The study is grounded in the Instructional Leadership Model by Hallinger (1985), incorporating constructs from the Principal Instructional Management Rating Scale (PIMRS), adapted to include dimensions of artificial intelligence. The questionnaire is structured into three main sections: Section A: Demographic Information, Section B: Artificial Intelligence and Section C: Artificial Intelligence in Instructional Leadership.



To accommodate different respondent roles, the instrument is divided into two sets: Set A: Principals and Headteachers and Set B: Senior Assistant Teachers (Curriculum). A total of 243 respondents, comprising school leaders (principals and headteachers) and senior assistant teachers, participated in the study. To address the first and second research questions, descriptive statistical techniques—including frequency, mean, standard deviation, and variance—were employed to explore respondents' perceptions of artificial intelligence and instructional leadership practices. For the third research question, inferential statistical analysis was conducted to examine the relationship between independent variables (e.g., levels of AI implementation) and the dependent variable (instructional leadership practices). Multiple regression analysis was utilized to determine the influence of multiple independent variables on the dependent variable. Prior to regression analysis, normality and linearity tests were conducted using residual scatter plots and normal probability plots to ensure the assumptions of the regression analysis were met. Consistent with Chua (2009), the study confirms that all dependent variable data are measured at the interval or ratio level and demonstrate an approximately normal distribution.

### 3. Results

“How is artificial intelligence used by school leaders in Malaysia?”

**Table 1: Artificial Intelligence Used Among School Leaders in Malaysia**

<b>Artificial Intelligence</b>	<b>There is practiced</b>	<b>None practiced</b>
Tanya Buku (Experimental)	143 (58.8%)	100 (41.2%)
Notebook LM	119 (49.0%)	124 (51%)
Gemini	117 (48.1%)	126 (51.9%)
ChatGPT	221 (90.9%)	22 (9.1%)
Cocker AI	51 (21%)	192 (79%)
ISTE: Artificial Intelligence In Education	99 (40.7%)	144 (59.3%)
Khan Academy	33 (13.6)	210 (86.4%)
Perplexity	32 (13.2%)	211 (86.8%)
Suno AI	68 (28%)	175 (72%)
MS Copilot	97 (39.9%)	146 (60.1%)
Bing Image Creator	89 (36.6%)	154 (63.4%)
Pixlr-Ai Image Generator	78 (32.1%)	165 (67.9%)
MS Learn : Explore Artificial	64 (26.3%)	179 (73.7%)
AI 101 For Teachers	70 (28.8%)	173 (71.2%)
Claude AI	67 (27.6%)	176 (72.4%)
Intro To Generative AI	63 (25.9%)	180 (74.1%)
DeepSeek	6 (2.5%)	237 (97.5%)
Magic School,	3 (1.2%)	240 (98.8%)
Canva,	2 (0.8%)	241 (99.2%)
Photo Enhancer,	1 (0.4%)	242 (99.6%)
Remove Background	1 (0.4%)	242 (99.6%)
Image Fx,	1 (0.4%)	242 (99.6%)
Lama coder,	1 (0.4%)	242 (99.6%)
Luma	1 (0.4%)	242 (99.6%)
Vidnoz	1 (0.4%)	242 (99.6%)
Gamma	1 (0.4%)	242 (99.6%)
Runway AI	1 (0.4%)	242 (99.6%)
AI Video	1 (0.4%)	242 (99.6%)
Image AI	1 (0.4%)	242 (99.6%)
Google For Educator	1 (0.4%)	242 (99.6%)
In video AI	1 (0.4%)	242 (99.6%)
Kahoot,	1 (0.4%)	242 (99.6%)

Based on Table 1, the use of artificial intelligence (AI) among school leaders in Malaysia shows an uneven adoption pattern. The ChatGPT application recorded the highest adoption rate at 90.9%, reflecting the widespread acceptance of this text-based generative AI. This was followed by the Tanya Buku application (experimental), which was used by 58.8% of respondents, showing that local initiatives were also gaining attention. However, majority of other AI applications show moderate to low adoption rates. For example, LM Notebook (49.0%), Gemini (48.1%), and Microsoft Copilot (39.9%) show that nearly half of school leaders have begun to explore the diversity of AI applications.

Meanwhile, education-related applications such as ISTE: Artificial Intelligence in Education (40.7%) and AI 101 for Teachers (28.8%) show interest in AI-based professional development, but it is not yet widespread enough. The use of visual and multimedia AI applications such as Pixlr-AI Image Generator (32.1%) and Bing Image Creator (36.6%) and video AI applications such as Runway AI, Vidnoz, and In video AI is very low (only about 0.4%), indicating a lack of awareness of these applications in the context of educational leadership. This situation reflects that school leaders in Malaysia are more likely to use AI to support tasks in the form of text or content generation rather than visual or multimedia applications. It also suggests that the level of digital literacy and digital leadership readiness among school leaders needs to be strengthened with more comprehensive exposure and training to the various types of AI technologies that exist and are relevant in the context of 21st-century education.

**Table 2: Interpretation of Mean Score of Instructional Leadership Practice**

Average score	Interpretation	Interpretation of leadership practices
1.0 – 1.8	Very Low	Never
1.9 – 2.6	Low	Rarely
2.7 – 3.4	Sometimes	Moderate Frequency
3.5 – 4.2	High	Often
4.3 – 5.0	Very High	Very Often

Source: BPPDP, 2006b and Hallinger (1995)

**Table 3: Instructional Leadership Practices of School Leaders in Malaysia with AI (Artificial Intelligence) Tools: Overall**

No	Item	MIN	Very High	High	Sometimes	Low	Very Low
1	Formulating School Goals with AI	<b>2.76</b>	39	207	360	214	152
2	Communicating School Goals through AI	<b>2.78</b>	55	272	435	252	201
3	Supervise and Assess AI-Assisted Teaching	<b>2.62</b>	38	198	456	305	218
4	Aligning Curriculum with AI	<b>2.63</b>	21	140	251	184	133
5	Monitoring Student Progress with AI	<b>2.57</b>	31	215	403	326	240
6	Protecting Teaching Time with AI Help	<b>2.68</b>	41	199	311	247	174
7	Maintaining High Visibility with AI	<b>2.67</b>	52	183	310	248	179

8	Providing Incentives for Teachers with AI Support	<b>2.62</b>	34	186	317	245	190
9	Providing Incentives for Teachers with AI Support	<b>2.68</b>	48	239	423	288	217
10	Providing Incentives for AI-Assisted Learning	<b>2.58</b>	23	132	237	187	150
<b>Instructional Leadership with AI Tools</b>		<b>2.67</b>	<b>3.74</b>	<b>19.31</b>	<b>34.32</b>	<b>24.26</b>	<b>18.17</b>

The descriptive statistical findings of the level of instructional leadership practice of school leaders in Malaysia with AI (Artificial Intelligence) tools are as shown in Table 3. From the results, it was found that the overall level of practices reported by the respondents was at a low to medium level with a mean score of 2.67. This means all aspects of instructional leadership of school leaders with AI tools, such as framing school goals with AI (mean=2.76), communicating school goals through AI (mean=2.78), supervising and evaluating AI-assisted teaching (mean=2.62), coordinating curriculum with AI (mean=2.63), monitoring the progress of AI students (mean=2.57), protecting teaching time with AI-assisted (mean=2.68), maintaining high visibility with AI (mean=2.67), providing incentives for teachers with AI support (mean=2.62), providing incentives for teachers with AI support (mean=2.68), and the final aspect is providing incentives for AI-assisted learning (mean=2.58). The data also showed that many respondents chose the "sometimes" category (34.32%), while only 3.74% practiced AI at a "very high" level.

### **The Contribution of Artificial Intelligence and Digital Leadership to the Instructional Leadership Practices of School Leaders in Malaysia.**

This section examines the contribution of 32 independent variables of artificial intelligence (Ask a book (experimental), Notebook LM, GEMINI, CHATGPT, COCKER AI, ISTE: Artificial Intelligence in Education, Khan Academy, Perplexity, SUNO AI, MS Copilot, Bing Image Creator, Pixlr-AI Image Generator, MS Learn: Explore artificial intelligence, AI 101 for Teachers, Claude AI, Intro to Generative AI, DeepSeek, Magic School, Canva, Photo Enhancer, Remove Background, Image FX, Lama Coder, Luma, Vidnoz, Gamma, Runway AI, AI Video, Image AI, Google For Educator, In video AI and Kahoot and digital leadership with three pillars (Engagement, learning and student outcomes, Innovative learning spaces and environments and Professional learning) to the dependent variables that are the instructional leadership practices of leaders in schools. Multiple regression analysis was used to answer the third study question and then test the second null hypothesis as follows: -

Ho2: There is no contribution of artificial intelligence and digital leadership elements to the instructional leadership practices of school leaders in Malaysia.

**Table 4: Multiple Regression Analysis (Stepwise): Contributors to Instructional Leadership**

<b>Elements of Artificial Intelligence and Digital Leadership</b>	<b>B</b>	<b>Beta <math>\beta</math></b>	<b>t</b>	<b>Sig.</b>	<b>R2</b>	<b>Contribution</b>
Professional learning	.496	.347	4.707	0.000	0.222	22.2

In video AI	2.771	.176	3.240	0.001	0.244	2.2
Suno AI	.378	.168	3.116	0.002	0.271	2.7
Innovative learning spaces and environments	.244	.211	2.856	0.005	0.295	2.4
Kahoot	1.926	.122	2.277	0.024	0.309	1.4
Magic School	1.106	.121	2.258	0.025	0.324	1.5
Constant	1.390		.529	0.000		
Double R				0.569		
R Square				0.324		
R Square Modified				0.307		
Standard Error				0.843		

**Table 4b: Analysis of variance**

Resources	Total Squares	Degrees of Freedom	Mean Squared	F-Value	Significant Stage
Regression	80.328	6	13.388	18.833	.000f
Residual	167.765	236	.711		
Total	248.093	242			

Multiple regression analysis from Tables 4a and 4b showed that of the 34 constant variables comprising the instructional leadership dimension, only six had a significant correlation and contributed (32.4%) ( $p < 0.05$ ) to the instructional leadership practices of school leaders.

The predictor variable that was high and accounted for 22.2 percent of instructional leadership practices was professional learning ( $\beta = 0.347$ ,  $t = 4.707$ , and  $p = 0.000$ ). This shows that if the professional learning score increases by one unit, then the instructional leadership practice score increases by 0.347 units. The findings explain that digital leadership shapes teachers' own personal learning networks, accessing resources anywhere related to teacher professional development and digital, and creating student learning paths are key factors contributing 22.2 percent to instructional leadership practices.

The second most important predictor variable that contributed as much as 2.2 percent to instructional leadership practices was In video AI ( $\beta = 0.176$ ,  $t = 3.240$ , and  $p = 0.001$ ). This shows that if the In video AI score increases by one unit, then the instructional leadership practice score increases by 0.176 units. These findings make it clear that In video AI in editing your videos with magic boxes on In video AI, providing simple instructions such as changing accents, deleting scenes, or adding funny introductions, and watching your videos come to life and creating stories with AI-generated images and videos on In video AI has contributed as much as 2.2 percent to instructional leadership practices.

The third most important predictor variable that contributed 2.7 percent to instructional leadership practices was Suno AI ( $\beta = 0.168$ ,  $t = 3.116$ , and  $p = 0.002$ ). This shows that if Suno AI's score increases by one unit, then the instructional leadership practice score increases by 0.168 units. These findings make clear the benefits of Suno AI in instructional leadership practices. Suno AI is more of a music stream quite popular among instructional leadership; it is more of a generation enabling high-quality music in various styles and genres. Explore the world of AI and create engaging music, create songs, use the AI singer voice generator and lyric generator, and this has contributed as much as 2.7 percent to instructional leadership practices.

The fourth most important predictive variable that contributed 2.4 percent to instructional leadership practices was innovative learning spaces and environments ( $\beta=0.211$ ,  $t=2.856$ , and  $p=0.005$ ). This shows that when the score of an innovative learning space and environment increases by one-unit, instructional leadership practices increase by 0.211 units. These findings explain that innovative learning spaces and environments, learning spaces that support bring your own device (BYOD), innovative learning environments with dynamic characteristics, and creating strategic plans for digitally literate classrooms have contributed as much as 2.4 percent to instructional leadership practices.

The fifth most important predictor variable that contributed 1.4 percent to instructional leadership practices was Kahoot ( $\beta=0.122$ ,  $t=2.277$ , and  $p=0.024$ ). This shows that if the Kahoot score increases by one unit, then the instructional leadership practice score increases by 0.122 units. These findings make it clear that it is quite beneficial in instructional leadership practices. This is because Kahoot, which uses AI-generated content, remains responsible for the accuracy and appropriateness of the content it contains, as well as its compliance with the Kahoot terms and policies found in the Trust Centre, including the Editorial Guidelines and Usage policies have contributed 1.4 percent to instructional leadership practices.

The sixth most important predictor variable that contributed 1.5 percent to instructional leadership practices was Magic School ( $\beta=0.121$ ,  $t=2.58$ , and  $p=0.025$ ). This shows that if the Magic School score increases by one unit, then the instructional leadership practice score increases by 0.121 units. These findings explain that quite beneficial in instructional leadership practice, housing over 80 AI-powered teaching tools to support educators with lesson planning, classroom differentiation, and assessment writing, and communicating clearly has contributed as much as 1.5 percent to instructional leadership practices.

The analysis of the variance in Table 32b showed a value of  $F = 18.833$  (DK6, 236) and a significant level of 0.000 ( $p < 0.05$ ). The R-squared value ( $R^2 = 0.324$ ) shows the contribution of a total of six independent variables to instructional leadership practices of 32.4 percent, namely the professional learning element (22.2%), In video AI (2.2%), Suno AI (2.7%), innovative learning spaces and environments (2.7%), Kahoot (1.45), and Magic School (1.5%). The results of the regression equation show that the Ho2 sub-hypothesis (Ho2) is rejected. Stepwise regression analysis found that there are six variables that correlate with, impact, and contribute to instructional leadership practices among leaders who practice professional learning: In video AI, Suno AI, innovative learning spaces and environments, Kahoot, and Magic School.

#### **4. Discussion and Conclusion**

This study aimed to identify the role of artificial intelligence (AI) in the instructional leadership practices of school leaders in Malaysia. In the context of education that is increasingly influenced by technology, school leaders face new challenges and opportunities that require them to leverage artificial intelligence to improve the effectiveness of teaching and learning. Based on the statement of the problem of school leaders, teachers, and pupils having to adapt quickly to creating virtual classrooms with online resources and synchronous and asynchronous teaching, artificial intelligence (AI) is the latest global force that is redefining the nature of learning and teaching and changing the role of teachers as facilitators.

This study surveyed artificial intelligence from 32 types practiced in schools: Ask a Book (experimental), Notebook LM, GEMINI, CHATGPT, COCKER AI, ISTE: Artificial

Intelligence in Education, Khan Academy, Perplexity, SUNO AI, MS Copilot, Bing Image Creator, Pixlr-AI Image Generator, MS Learn: Explore Artificial Intelligence, AI 101 for Teachers, Claude AI, Intro to Generative AI, DeepSeek, Magic School, Canva, Photo Enhancer, Remove Background, Image FX, Lama Coder, Luma, Vidnoz, Gamma, Runway AI, AI Video, Image AI, Google for Educator, In video AI, and Kahoot. This is mostly found on Delim@ platforms, where Chat GPT gets the highest usage at 90.9 percent, followed by Ask a Book at 58.8 percent. This shows that the development of AI has advanced, and in recent years, with ChatGPT and Ask Books has had a direct impact on education at all levels (Tajik & Tajik, 2023). The Covid-19 pandemic era has triggered a drastic practice of using the latest tools in teaching and learning.

The practice of instructional leadership in 10 elements meets the results of the study by Wahyu and Yudi (2024). The descriptive statistical findings of the level of instructional leadership practice of school leaders in Malaysia with AI (artificial intelligence) tools were at a moderate level of min-2.67. From the results, it was found that the overall level of practices reported by the respondents was at a low to medium level. The data also shows that most respondents chose the "sometimes" category (34.32%), while only 3.74% practiced AI at a "very high" level. Overall, it shows that the use of AI among school leaders in Malaysia is at a low to medium level, with the average mean value of the ten domains ranging from 2.57 to 2.78. This suggests that while AI has begun to be used in some aspects of management and instructional leadership, it has not been practiced systematically, consistently, and strategically.

Specifically, the mean—2.78 items at the highest mean score practiced—is to use AI as a platform to communicate goals to the school community. Followed by the item using AI to evaluate the effectiveness of communication in delivering school goals, next the item applies AI to tailor the delivery of goals according to the target group, leverages AI data visualization to show the progress of school goals, and finally, the item uses AI to monitor school people's understanding of school goals. The pattern of respondents showed that the majority chose the "sometimes" category (35.80%), while only 4.53% implemented this practice at a "very high" level.

For Ho2, this analysis was rejected because the artificial intelligence regression analysis showed a relationship with instructional leadership, namely In video AI, Suno AI, Kahoot, and Magic School, while professional learning and innovative learning spaces and environments were digital skills that had a relationship with instructional leadership. Instructional leadership refers to the ability of educational leaders (such as teachers, principals, or administrators) to effectively influence the teaching and learning process. AI can support instructional leadership through tools such as In video AI—assists in the creation of interactive learning videos, making it easier for teachers to deliver content creatively; Suno AI—produces music and audio for learning, increasing student engagement; and Kahoot! – Interactive quiz game platform that strengthens game-based learning and Magic School AI—assists teachers in lesson plan planning, assessment, and administrative time savings (Holmes, W., et al., 2021).

Instructional leaders need to master digital literacy to enhance teacher professional development. AI provides AI-based training (such as Coursera and LinkedIn Learning) to improve digital pedagogical competencies and learning data analysis (such as Google Classroom and Microsoft Teams Insights) for formative assessment (Darling-Hammond, L., et al. (2017), Fullan, M., (2021)). AI helps create flexible and adaptive learning environments, such as virtual classrooms (virtual reality/augmented reality)—examples: Google Expeditions, Labster—and learning management systems (LMS), such as Moodle and Canvas with AI

integration. In other words, AI strengthens instructional leadership through digital tools that enhance teaching, professional learning, and innovative environments. Education leaders need to leverage this technology for educational transformation.

The study of artificial intelligence in the context of instructional leadership of school leaders in Malaysia is a very relevant and important topic. With technological advancements, the use of artificial intelligence (AI) in education can improve the effectiveness of teaching and learning. The use of artificial intelligence is to assess how school leaders can use AI to analyze student performance, design curriculum, and tailor instructional strategies based on students' individual needs.

Training and development is to assess the need for training in using the latest technology for school leaders as well as teachers and how this can improve instructional leadership practices. In this regard, about the obstacles, although they exist, instructional leadership can identify the challenges faced by school leaders in integrating AI and propose strategies to overcome them.

The Instructional Leadership Model can develop a leadership model that incorporates artificial intelligence in improving instructional leadership practices. With the right focus and systematic methodology, this study can provide useful new knowledge for school leaders in Malaysia in adapting artificial intelligence in their leadership. The following are the conclusions and recommendations that can be drawn from the study on artificial intelligence in the instructional leadership practices of school leaders in Malaysia:

1. **Importance of Artificial Intelligence:** Studies show that artificial intelligence can assist school leaders in making more informed decisions and optimizing the teaching and learning process. AI can be used to analyse student data, predict performance, and adjust teaching strategies.
2. **Continuing Education:** There is a need for school leaders and teachers to get ongoing training in the use of technology and artificial intelligence. This is essential to ensure that they have been equipped with the necessary skills to lead in the digital age.
3. **Challenges Faced:** School leaders face several challenges in implementing new technologies, including a lack of resources, uncertainty about the use of technology, and resistance from staff.

#### **Suggestions:**

1. **Training and Development Programs:** Develop special training programs for school leaders that include the use of artificial intelligence. This training should focus on practical skills and strategies for applying technology in daily practice.
2. **Data-Driven Leadership:** Encourages school leaders to use AI-generated data and analytics to make more accurate and evidence-based decisions. This includes continuously evaluating teacher and student performance and making necessary adjustments.
3. **Strategic Collaboration:** Establish collaborations with government agencies, Pomegranate extensions, and technology companies to seek support and resources in implementing initiatives using artificial intelligence in schools.

4. By implementing these recommendations, Malaysian schools can make more effective use of artificial intelligence, thereby improving instructional leadership as well as the quality of education and student learning outcomes.

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# PSYCHOMETRIC ASSESSMENT ON SPIRITUAL INTELLIGENCE FOR SCHOOL LEADERS INSTRUMENT USING RASCH ANALYSIS

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**Abstract:** *The spiritual intelligence attribute among school leaders is crucial for the sustainable development and well-being of the school community. Despite the respectable psychometric properties of the Spiritual Intelligence for School Leaders Instrument (SISLI) in previous studies, this study aims to assess the validity and the reliability evidence of SISLI's 52 items and the hierarchical structure of item agreements using Rasch analysis. Using the quota sampling technique, a total of 490 school leaders in Malaysia were included in this analysis. It was found that most items in SISLI fulfilled the Rasch analysis assumptions, including item fit, unidimensionality, reliability, and separation of person-item as well as the item map. However, the hierarchical arrangement of item agreements in the item map has given some pertinent information on the disposition of spiritually intelligent school leaders. In summary, the Rasch analysis enhanced the psychometric properties of SISLI and, simultaneously, revealed the disposition of spiritually intelligent school leaders. This enlightenment would gain merit for future research on spiritual intelligence in educational leadership by having a psychometrically sound instrument.*

*Keywords: Spiritual Intelligence, School Leaders, Psychometric Properties, Rasch Analysis.*

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## 1. Introduction

Spiritual intelligence has been widely recognized as an affective attribute in leadership (Hanefar et al., 2025). The spiritual intelligence disposition among school leaders is essential for engendering the sustainable development and well-being of a school community (Salamun & Shah, 2012). For school leaders, spiritual intelligence serves as a guiding attribute that shapes values, decision-making, and interpersonal relationships. It plays an important role in cultivating trust, compassion, and resilience, which are essential for building a nurturing and forward-looking school environment (Ker-Dincer, 2007).

Bar-On and Rock (2010) anticipated a significant combination of training and assessment of spiritual competencies in predicting human capabilities and functioning. Assessing the disposition of spiritual intelligence among school leaders in leadership training might provide a complementary approach in elevating organizational effectiveness (Shabnam & Tung, 2013). There is a growing demand for reliable and valid instruments that can accurately measure spiritual intelligence among school leaders.

A previous study introduced the *Spiritual Intelligence for School Leaders Instrument (SISLI)*, which demonstrated commendable psychometric properties (Jumahat, 2021). However, continuous refinement is necessary to ensure that the instrument remains robust in measuring this affective attribute. Thus, this study aims to assess the psychometric properties of SISLI using Rasch analysis. This study further investigated the item map to delineate the hierarchical

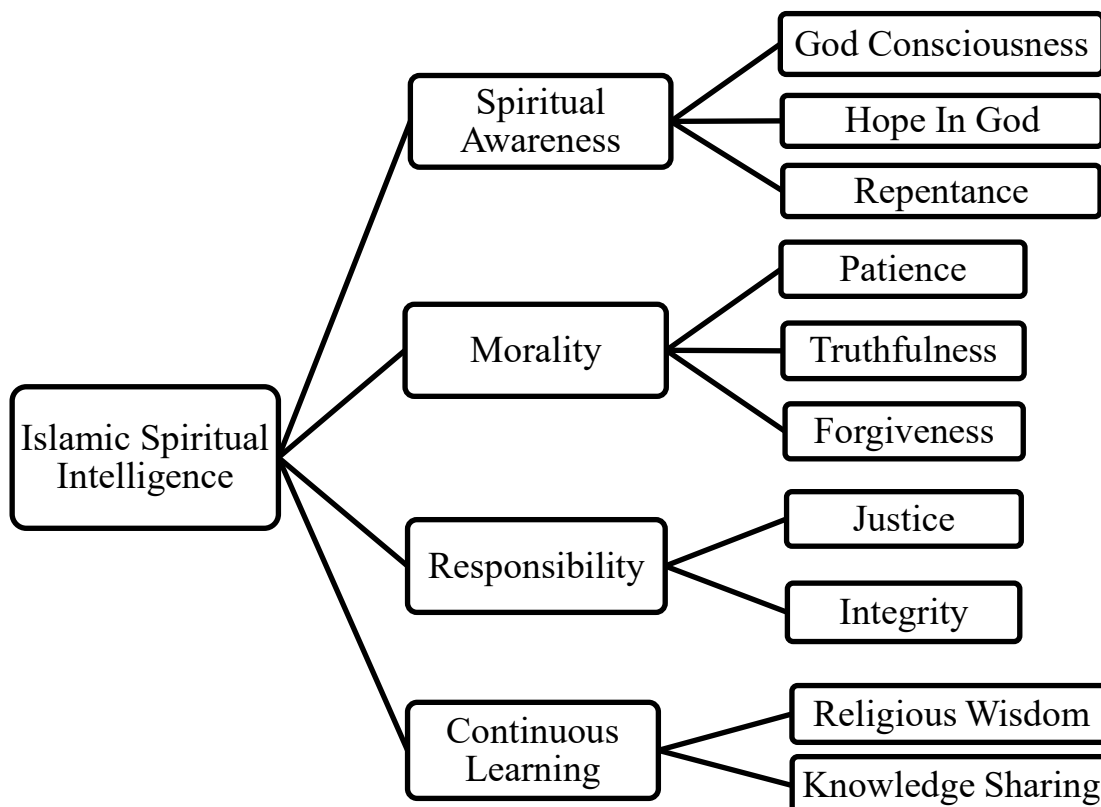
arrangement of items, thereby providing insights into the spiritual intelligence dispositions of the school leaders.

## 2. Literature Review

Spiritual intelligence from the Islamic perspective is multidimensional in nature (Utz, 2011). In this study, the dimensions of spiritual intelligence are proposed based on three premises: a) the expert opinion, b) the researcher's supposition, and c) a comprehensive literature review (Netemeyer et al., 2003). To be precise, the literature review begins with overviews of relevant theories from various areas of study within the purview of spirituality, religiosity, personality, as well as leadership and management from Islamic perspectives (Jumahat, 2018).

The pillar of the theoretical framework for spiritual intelligence was drawn from the Islamic worldview (see Bensaïd et al., 2014). In the context of this study, the dimensions such as Spiritual Awareness, Morality, Responsibility, and Continuous Learning represent the theoretical framework of spiritual intelligence. The components represent the sub-construct of each dimension that portrays the initial conceptual framework of spiritual intelligence, as shown in Figure 1 (Jumahat, 2021).

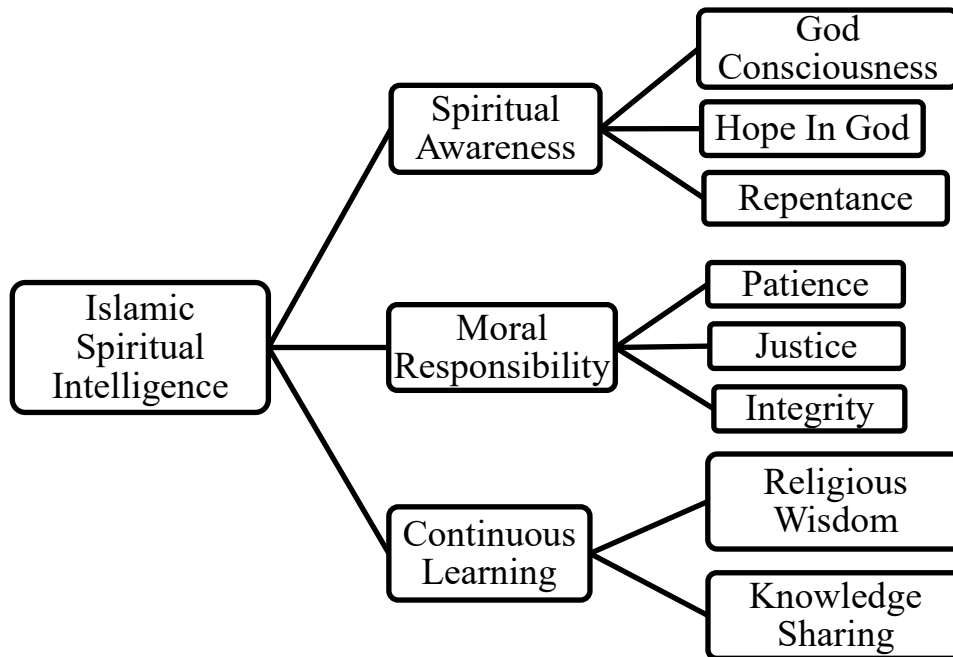
Figure 1: The Proposed Conceptual Framework of Spiritual Intelligence



The initial validity of SISLI with 59 items was acquired using the content validity ratio (CVR) technique by Lawshe (1975). It involved 31 experts in the related fields of educational psychology, Islamic education, and educational leadership. After the CVR procedure, 56 items (95%) were endorsed by the judges. However, the researchers decided to retain 52 items in the incoming analysis.

Next, the first construct validity of SISLI was attained using an exploratory factor analysis (EFA) procedure for a psychological measurement instrument (Tabachnick & Fidell, 2007). Unfortunately, the construct of Truthfulness and Forgiveness failed to converge, and only 35 items remained in SISLI. Thus, this outcome showed that the EFA procedure suits its function as a data reduction technique instead of exploring the underlying structure of the data (Costello & Osborne, 2005). Based on the EFA results, the final conceptual framework of the study is shown in Figure 2 (Jumahat, 2021).

**Figure 2: The Final Conceptual Framework of Spiritual Intelligence**



To strengthen the validity evidence, SISLI was subjected to a confirmatory factor analysis (CFA) procedure, which had been utilized by a proponent of spiritual intelligence instrument development (i.e., King and DeCicco, 2009). Even though a satisfactory model fit was achieved, after careful observation, SISLI was subjected to an exploratory mode whereby another series of CFA were conducted until it satisfied Hu and Bentler's (1999) criteria for a better model fit. Finally, 28 items remained as the final version of SISLI. Several advanced validity and reliability evidence were also examined, including convergent and discriminant validity, invariance analysis, and the existence of a second-order factor for the measurement model of SISLI. In sum, the CFA procedure could only retain fewer items in the final version of SISLI.

### 3. Research Methodology

This study employed a quantitative approach using a cross-sectional survey design. The quota sampling technique was employed to collect data from a total of 490 school leaders in Malaysia (Sekaran, 2003). In this sample of school leaders, it was found that the male (57%) composition was slightly higher than the female (43%). The 50 to 59-year-old school leaders dominated the category. The tenure period, which is more than 26 years of service (52%), was also derived from the samples. Both age and tenure period indicated that most of the school leaders were appointed based on their seniority.

The researchers decided to use the original version of SISLI. Section 1 indicates the demographic profile of the sample. Section 2 is the questionnaire, which consists of 52 items based on four dimensions, namely Spiritual Awareness (18 items), Morality (12 items), Responsibility (12 items), and Continuous Learning (10 items). The instruments were distributed by lecturers in the three branches of Institut Aminuddin Baki (IAB). Before administering the instruments, a brief description would be given by the lecturers of the purpose of the study and the instructions to the school leaders, as the course participants in IAB. The completed research instruments were returned to the researcher for data analysis.

In this study, the researchers decided to test SISLI's items using Rasch analysis as one-parameter logistic model in the item response theory (IRT) that only considers a difficulty parameter (Boone et al., 2014). Rasch analysis validates at the item level and gives information on the validity and reliability of a psychological instrument. In this study, the software used was WINSTEPS to examine the item fit, unidimensionality, the item-person reliability and separation, and the item map (Linacre, 2019).

## 4. Results

### 4.1 Item Fit

Table 1 presents the Infit Mean Square (MNSQ) values of 52 items in SISLI, which range from 0.66 to 3.45 logit, and the Outfit MNSQ values, which range from 0.20 to 8.26 logit. It was found that all items in SISLI achieved item fit values except for R10, A10, and M11. These misfitting items exceed the recommended range of 1.5 logit for the Infit and Outfit values. While five items (R6, R7, R9, R11, and L1) fall below 0.5 logit, suggesting that these items might be less productive for instrument development but not necessarily detrimental to the measurement (Wright & Linacre, 1994). In this study, many items fell outside the Zstd value ( $\pm 2.0$ ), and this issue can be ignored since most items have reached the desired MNSQ range (Linacre, 2005).

The overall item polarity as displayed by PT-measure Corr. is positive, ranging from 0.04 to 0.65; indicating that all items measure the desired construct and provide an initial indication of construct validity (Bond & Fox, 2007). This suggests that all items in SISLI contribute meaningfully to the underlying construct and function effectively as a measurement tool (Bond & Fox, 2007). The overall model standard error (Model S.E.) remains below 0.25 (except for R11), which is considered highly acceptable for measurement precision (Fisher, 2007). Since the overall item fit, PTMEA Corr., and Model S.E. achieved the Rasch model assumptions, with few anomalies. Thus, 49 SISLI's items would be a good measure for spiritual intelligence disposition among school leaders.

Table 1: Item Fit and Point Measure Correlation

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MODEL MEASURE		IN FIT		OUT FIT		PT-MEASURE		EXACT MATCH		ITEM
			S.E.	MNSQ	ZSTD	MNSQ	ZSTD	CORR.	EXP.	OBS%	EXP%		
10	2425	490	-2.08	.21	2.22	5.3	8.26	8.9	.10	.25	96.5	94.9	R10-I am hopeful God will forgive me**
28	1960	490	4.62	.05	3.45	9.9	4.85	9.9	.04	.73	21.2	47.0	A10-I withholding the truth when I am at risk***
41	1982	490	2.49	.07	2.75	9.9	3.23	9.9	.31	.62	43.5	57.4	M11-I am not afraid to tell the truth in my leadership.
35	2126	490	1.71	.08	1.43	4.9	1.52	6.2	.43	.57	62.2	63.7	M5-I accept any criticism from teachers and staff in school**
24	1981	490	2.49	.07	1.23	2.9	1.37	4.7	.42	.62	54.9	57.4	A6-I give immediate reaction when teachers or staff making mistakes**
42	2224	490	1.01	.09	1.33	3.9	1.21	2.3	.50	.53	70.8	69.3	M12-I encourage teachers or staff to be honest in their duty**
29	2200	490	1.20	.09	1.03	.5	1.29	3.4	.6	.54	76.1	67.8	A11-I am not afraid to tell the truth in my leadership**
13	2128	489	1.67	.08	1.10	1.3	1.22	2.9	.46	.57	60.5	64.1	R13-I ask for feedback from teachers or staff if I have misbehaved.
37	2249	490	.80	.09	1.12	1.5	1.12	1.3	.49	.51	75.1	70.9	M7-I feel uncomfortable when I delay my work.
4	2416	490	-1.73	.19	1.05	.4	.80	-.6	.35	.28	94.3	93.1	R4-I continuously feel the presence of Allah ta'ala.
5	2402	490	-1.31	.16	1.04	.3	.82	-.7	.40	.32	92.0	90.5	R5-My fear of God motivates me to excel.
7	2434	490	-2.58	.26	1.02	.2	.23	-2.6	.34	.20	97.1	96.7	R7-I trust God will guide and help me.
1	2397	490	-1.18	.15	1.01	.1	1.01	.1	.38	.34	91.0	89.6	R1-I keep my intentions for the sake of God only.
33	2192	490	1.26	.09	.95	-.7	.99	.0	.56	.54	72.0	67.2	M3-I give equal treatment to anybody even if I dislike some of their attitudes.
44	2338	490	-1.16	.12	.98	-.2	.93	-.4	.48	.44	82.4	80.1	L2-I continuously learning and upgrade my religious knowledge.
40	2215	490	1.08	.09	.96	-.4	.96	-.5	.5	.53	72.4	68.7	M10-I will advise any teachers or staff for not being truthful.
27	2101	490	1.86	.08	.90	-1.3	.95	-.7	.59	.58	65.3	62.3	A9-I do what is right even if I have to put myself in danger.
8	2422	490	-1.95	.20	.95	-.3	.80	-.5	.35	.26	94.9	94.3	R8-I trust God never let me down.
2	2417	490	-1.76	.19	.94	-.3	.65	-1.2	.37	.28	94.3	93.3	R2-I have to dedicate my life to God alone.
31	2289	490	.41	.10	.94	-.7	.91	-.9	.54	.49	79.2	74.8	M11 treat all teachers and staff equally.
16	2403	490	-1.33	.16	.93	-.5	.46	-2.6	.46	.32	92.4	90.6	R16-Repentance to God makes me a better person.
15	2375	490	-.73	.13	.92	-.8	.80	-1.0	.46	.38	87.8	85.7	R15-I repent to God upon committing mistake in my work.
45	2394	490	-1.11	.15	.91	-.8	.58	-2.1	.47	.34	91.2	89.0	L3-Learning religious knowledge makes me aware of the purpose of life.
9	2430	490	-2.33	.24	.91	-.4	.35	-2.2	.35	.22	96.1	95.9	R9-I am hopeful God will always be on my side.
6	2417	490	-1.76	.19	.90	-.6	.47	-2.1	.47	.28	94.1	93.3	R6-I constantly try to please God.
43	2421	490	-1.91	.20	.90	-.6	.31	-2.9	.2	.26	94.7	94.1	L1-I feel closer to God when I gain more religious knowledge.
14	2252	490	-.77	.09	.89	-1.5	.84	-1.8	.2	.51	73.9	71.3	R14-I ask forgiveness from teachers or staff when I wronged them.
23	2172	490	1.40	.08	.88	-1.6	.88	-1.6	.6	.55	71.8	66.1	A5-I accept any criticism from teachers and staff in school.
25	2256	490	-.73	.10	.88	-1.6	.78	-2.5	.6	.51	79.0	71.5	A7-I hold to my truthfulness in any situation.
17	2352	490	-.36	.12	.86	-1.6	.70	-2.1	.5	.42	84.5	82.0	R17-I prevent myself from wrongdoing when I realize it.
46	2387	490	-.96	.14	.86	-1.4	.56	-2.4	.49	.36	90.0	87.8	L4-I am aware that learning is a fundamental religious objective.
19	2227	490	.98	.09	.84	-2.1	.82	-2.2	.56	.52	72.9	69.4	A1-I exercise patience to cope with crisis and difficulties in school.
11	2439	490	-2.98	.31	.82	-.6	.20	-2.5	.3	.17	97.8	97.8	R11-I trust God's mercy and compassion**
18	2387	490	-.96	.14	.82	-1.8	.61	-2.0	.5	.47	89.8	87.8	R18-Repentance to God makes me aware of my conducts.
34	2231	490	.95	.09	.80	-2.8	.82	-2.2	.58	.52	72.9	69.8	M4-I assign fair distribution of task to teachers or staff.
3	2416	490	-1.73	.19	.81	-1.3	.56	-1.6	.39	.28	93.7	93.1	R3-My love of God motivates me to excel.
12	2396	490	-1.16	.15	.80	-1.8	.56	-2.2	.46	.34	90.2	89.4	R12-I put my utmost best in my work and place my trust in God.
47	2351	490	-.34	.12	.79	-2.6	.59	-3.0	.0	.57	86.3	81.8	L5-I encourage teachers or staff to upgrade their level of education.
48	2326	490	.00	.11	.78	-2.9	.65	-3.0	.58	.45	82.9	78.6	L6-I share my ideas with teachers or staff.
21	2299	490	.31	.10	.78	-3.0	.66	-3.4	.6	.48	78.4	75.7	A3-Patience helps me resolved problems in school.
49	2308	490	.21	.11	.77	-3.1	.63	-3.5	.1	.47	82.4	76.6	L7-I enjoy sharing my expertise with teachers or staff.
32	2217	490	1.07	.09	.77	-3.2	.76	-3.2	.6	.53	77.3	68.7	L8-I increase the professionalism of teachers or staff through knowledge sharing.
22	2286	490	.45	.10	.77	-3.2	.73	-2.8	.6	.49	79.6	74.5	A4-Patience leads to success in my leadership.
52	2325	490	.01	.11	.76	-3.2	.73	-2.2	.5	.45	84.7	78.5	L10-I internalize religious wisdom.
26	2294	490	.36	.10	.76	-3.3	.69	-3.1	.6	.48	81.4	75.2	A8-I hold on to the principles of Islam (sharif'ah) even when they may be unfavourable to others.
51	2323	490	.03	.11	.76	-3.3	.60	-3.6	.6	.46	85.1	78.3	L9-I share beneficial knowledge with teachers or staff.
50	2305	490	.24	.11	.75	-3.4	.64	-3.5	.6	.47	85.3	76.3	L8-I increase the professionalism of teachers or staff through knowledge sharing.
30	2354	490	-.39	.12	.73	-3.3	.57	-3.1	.6	.42	84.9	82.3	A12-I encourage teachers or staff to be honest in their duty**
39	2306	490	.23	.11	.72	-3.9	.65	-3.4	.59	.47	82.2	76.4	M9-I work hard to fulfill my promises to teachers or staff.
20	2245	490	.83	.09	.72	-4.0	.72	-3.5	.6	.51	76.7	70.7	A2-I exercise patience in negotiations with teachers and staff in school.
38	2250	490	.79	.09	.66	-5.0	.66	-4.2	.65	.51	79.6	71.2	M8-I abide by agreements I make to teachers or staff.
36	2244	490	.84	.09	.66	-5.0	.64	-4.5	.64	.52	77.1	70.6	M6-I show fairness in my leadership.
MEAN			2282.4	490.0	.00	.13	1.01	-.7	1.03	-.9			80.6 78.3
S.D.			169.2	.1	1.47	.05	.49	3.0	1.23	3.4			14.0 11.9

## 4.2 Unidimensionality

Table 2 presents the unidimensionality analysis. The unidimensionality analysis of SISLI results indicates that the raw variance explained by the measurement is 43.2%. This result is considered acceptable, as it exceeds the minimum threshold of 40% (Linacre, 2019). Additionally, the unexplained variance in the first contrast is 4.7 %, suggesting minimal interference with the measurement construct (Fisher, 2007). The ratio of raw variance explained to the unexplained variance in the first contrast is approximately 9:1, surpassing the minimum recommended ratio of 3:1 (Embretson & Reise, 2000). This further supports the assumption of unidimensionality for SISLI. However, it is noteworthy that the initial eigenvalue of the first contrast is above the commonly accepted threshold of 3.0, recorded at 4.6. Despite this, evidence strongly indicates that SISLI demonstrates a satisfactory unidimensionality.

**Table 2: Standardized Residual Variance (In Eigenvalue Units)**

		-- Empirical --	Modeled
Total raw variance in observations	=	98.5	100.0%
Raw variance explained by measures	=	42.5	43.2%
Raw variance explained by persons	=	18.0	18.3%
Raw Variance explained by items	=	24.5	24.9%
Raw unexplained variance (total)	=	56.0	56.8%
Unexplnd variance in 1st contrast	=	4.6	4.7%
Unexplnd variance in 2nd contrast	=	3.4	3.4%
Unexplnd variance in 3rd contrast	=	2.7	2.7%
Unexplnd variance in 4th contrast	=	2.1	2.2%
Unexplnd variance in 5th contrast	=	1.9	2.0%

### 4.3 Person-Item Reliability and Separation

In Rasch analysis, person separation reflects how well the instrument can distinguish between respondents (persons) based on their ability levels. Table 3 presents the person and item reliability and separation indices. The person separation index was 2.48, lower than the model, suggesting that the instrument could fairly distinguish between multiple levels of respondent ability. The person's reliability was recorded at 0.86, which is good, indicating that the sample size is adequate and the respondents provided consistent responses (Linacre, 2012).

**Table 3: Reliability and Separation of Person**

	TOTAL		MEASURE	MODEL ERROR	INFIT		OUTFIT	
	SCORE	COUNT			MNSQ	ZSTD	MNSQ	ZSTD
MEAN	242.2	52.0	4.06	.36	1.30	.7	.93	-.1
S.D.	12.7	.0	1.24	.12	.70	1.7	.87	1.3
MAX.	259.0	52.0	7.65	1.09	5.82	7.2	9.90	9.0
MIN.	186.0	51.0	.69	.18	.27	-4.1	.14	-4.3
REAL RMSE	.46	TRUE SD	1.15	SEPARATION	2.48	PERSON RELIABILITY	.86	
MODEL RMSE	.38	TRUE SD	1.18	SEPARATION	3.07	PERSON RELIABILITY	.90	
S.E. OF PERSON MEAN = .06								

In the Rasch model, item separation refers to the degree to which the items in an instrument are distributed according to their level of difficulty or agreement. In Table 4, the item separation index was 10.23, slightly below the model separation value of 10.66. The item reliability was 0.99, which is considered excellent, indicating a stable hierarchy of item agreement. These findings collectively demonstrate that the instrument possesses strong measurement precision and can differentiate respondents and item difficulty levels.

**Table 4: Reliability and Separation of Item**

	TOTAL		MEASURE	MODEL ERROR	INFIT		OUTFIT	
	SCORE	COUNT			MNSQ	ZSTD	MNSQ	ZSTD
MEAN	2282.4	490.0	.00	.13	1.01	-.7	1.03	-.9
S.D.	169.2	.1	1.47	.05	.49	3.0	1.23	3.4
MAX.	2439.0	490.0	4.62	.31	3.45	9.9	8.26	9.9
MIN.	1360.0	489.0	-2.98	.05	.66	-5.0	.20	-4.5
REAL RMSE	.14	TRUE SD	1.47	SEPARATION	10.23	ITEM RELIABILITY	.99	
MODEL RMSE	.14	TRUE SD	1.47	SEPARATION	10.66	ITEM RELIABILITY	.99	
S.E. OF ITEM MEAN = .21								

### 4.4 Item Map

The Wright map or item map is a special feature in the Rasch analysis which provides a visual comparison of a person's ability and item difficulty (agreement for Likert scale) in the same

linear scale (Bond & Fox, 2015). Figure 3 illustrates the hierarchy of individual abilities and item agreement for SISLI. From the map, the R11 item (I trust God's mercy and compassion) was the easiest for respondents to agree with. A10 item (I cannot be truthful when I am at risk) emerged as the most difficult for respondents to endorse. The logit distribution of items ranged from -2.98 (R11) to 4.62 (A10). In this case, the A10 item falls outside the acceptable range ( $\pm 3.0$  logit), indicating not a good fit with Rasch model expectations (Wright & Linacre, 1994) and would be discarded for the ideal range in the item distribution. The misfitting items (A10, M11 and R10) are placed at the end of the item hierarchy in the map and would possibly distort the measurement of SISLI (Linacre, 2002).

Figure 3: Item Map



Notably, the person's mean ability was 4.06 logit, significantly higher than the item mean of 0.00 logit. The person's ability distribution spanned from 0.69 to 7.65 logit, suggesting a wide range of respondent abilities. However, there are a multitude of misfitting persons according to the infit and outfit MNSQ indices. The most extreme value of the Infit MNSQ is 5.19, and



the Outfit MNSQ is 9.90, which is far beyond the recommended value of 1.5 for a Likert scale instrument.

## 5. Discussion

This study highlights the psychometric properties of SISLI via the Rasch analysis procedure. Besides, the researcher would like to scrutinize the agreement of each item from the purview of the item response theory (IRT) framework (Molenaar, 1995). The previous work on SISLI employed EFA and CFA procedures, which are known for classical test theory (CTT) (Siegert et al., 2025). Therefore, in this discussion, it is worthwhile to make a contrastive comparison between the current findings and the factor analysis outputs.

The preliminary construct validity was depicted from the item fit indices. The construct validity of SISLI was also achieved with an acceptable unidimensional value, which contributes to the measurement of the spiritual intelligence construct. In addition, the unexplained variance value is sufficient. The ratio of raw variance explained by the measurement to the unexplained variance value in the first contrast also exceeds the proposed value. Therefore, based on the three unidimensional assumptions, it indicates that SISLI meets the unidimensionality characteristics of the Rasch measurement model. These Rasch analysis assumptions showed that most of items in SISLI could be retained as compared to EFA/CFA procedure.

In this study, the person's reliability and person's separation were adequate. A person's separation is just over 2, suggesting that the instrument can reliably distinguish into about three levels of respondents' ability (low, medium, high), which is considered acceptable for most educational and psychological measurements (Bond & Fox, 2015). A person's separation of 2 usually corresponds to a person's reliability of about 0.80, which is concomitant with the study. This means the instrument has good consistency in distinguishing three levels of ability. Nonetheless, the item separations were large. An excellent spread of item agreement indicates that the instrument is highly reliable in distinguishing item hierarchy, and sometimes it may also reflect that a large sample size provides precise estimates (see Yang et al., 2020).

In most validity studies, the achievement of model fit or the item fit is much anticipated because it would improve the overall evidence of construct validity and the reliability of an instrument. Nonetheless, in this study, the misfit items could provide some significant information vis a vis to CCT techniques using a factor analytical procedure. In the item map, the misfitting items (R10-I am hopeful God will forgive me, A10-I withholding the truth when I am at risk, and M11-I am not scared to tell the truth in my leadership) are located at the end of the item hierarchy agreement and are also not accepted in the EFA procedure. In this case, the school leaders were hardly withholding the principle of truth, as noted in Jumahat (2021).

The Spiritual Awareness dimension is the easiest spiritual intelligence attribute that school leaders could agree on. This indicates that they were predisposed to a deeper religious spirituality that characterized Muslim school leaders. Move to the top, the second dimension is Continuous Learning. Interestingly, this item map could show three items (L1-I feel closer to God when I gain more religious knowledge, L3-Learning religious knowledge makes me aware of the purpose of life, and L4-I am aware that learning is a fundamental religious objective) from the Religious Wisdom construct in the Continuous Learning dimension were between the Spiritual Awareness. From the meaning of the items, religious knowledge and understanding are linked to religious spirituality. In the item map, items from the Morality and Responsibility

dimensions were mingled together. This makes sense why the dimensions of Morality and Responsibility were collapsed in the previous study and substantiates the new Moral Responsibility dimension as mentioned in the literature review above.

The hierarchical arrangement of spiritual intelligence dispositions disclosed through Rasch analysis accentuates the developmental nature of spiritually intelligent school leaders, showing that foundational traits pave the way toward more complex dispositions such as spiritual awareness. This developmental framework not only enriches theoretical discourse but also promotes practical pathways for leadership training and professional growth, enabling school leaders to cultivate spiritual intelligence progressively. By bridging gaps in theory and measurement regime, this study enhances both the academic and practical understanding of spiritual intelligence in educational leadership. Moreover, it establishes SISLI as a credible tool that could guide future research in educational leadership and psychology.

## 6. Conclusion

Establishing the evidence of validity and reliability is crucial, as it not only reinforces the credibility of an instrument but also ensures that it accurately reflects the spiritual intelligence attributes it seeks to measure. This need becomes particularly significant in the Malaysian educational context, where leadership values are deeply warranted in this challenging era. The introduction of SISLI marks a significant advancement in contextualizing spiritual intelligence for educational leadership, but its true utility lies in rigorous validation through Rasch analysis despite respectable psychometric evidence from previous studies. Unlike traditional classical test theory (CTT) approaches as depicted by EFA/CFA, Rasch analysis provides robust item-level assessments and hierarchical structuring, thereby strengthening the psychometric soundness of SISLI while deepening theoretical insights into spiritual intelligence dispositions among school leaders. In conclusion, spiritual intelligence is pivotal in shaping educational outcomes and informing leadership interventions, thereby ensuring that education remains value-driven in alignment with the Malaysian education policy and the aspirations of Malaysia MADANI.

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# TEACHERS' NARRATIVE ON PERFORMANCE APPRAISALS AND SYSTEMIC CHALLENGES THROUGH THE LENS OF JUSTICE

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**Abstract:** *The aim and objective of this article is to explore the issues and challenges of performance appraisals from the views and perceptions of teachers in selected Malaysian primary schools based on The Unified Evaluation for Education Services Officer's documents also known as PBPPP. The documents are used as formal documents in teachers' performance appraisal evaluation since 2016. This article is trying to understand the issues of the implementation based on the teachers' experiences on the evaluation conducted by educational leaders in their schools. Performance appraisal is always stigmatized with the element of biasness, and it is crucial to have clear perspectives of the teachers' true experiences on the position of this claim. For the analysis, a single Explanatory case study from the qualitative studies was implemented by adapting deductive thematic analysis methods. In order to collect transparent data, semi-structured interview questions were designed using the formal appraisal evaluation form as reference. The selection of informants was using purposive sampling which involved five teachers with working experiences between five to thirty years. The analysed data from the interview transcriptions and formal documents were divided into five themes; practice, implementations, experiences, the evaluation position from the views of organizational justice based on Halo Effect Theory, and issues and challenges faced.*

**Keywords:** *Halo Effect, Organizational Justice, Performance Appraisals, Explanatory Design, Teacher*

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## Introduction

In maintaining positive behaviours within a school environment, organizational justice is considered part of a crucial element to be focused on. In the case of teachers' performance appraisal, this positive working element and environment play a vital role in helping these teachers to perform at their best. This article is exploring the experiences in performance appraisal assessment from five teachers from different in-service experiences.

Performance appraisal has become a topic of interest in the local education scene after six years of the implementation of The Unified Evaluation for Education Service Officer (*Penilaian Bersepadu Pegawai Perkhidmatan Pendidikan*); also known as PBPPP by the Malaysian Ministry of Education. It was fully implemented in 2016 as an integrated hybrid guidance of formal and informal evaluations for school leaders in performance appraisal management (Sariah, et al., 2015). Despite the in-depth and effective implementation reports, teachers are still sceptical in the processes implied by the educational leaders in schools, and there is still more truth to discover especially on the teachers' views and responses on the assessments done. The position of anything related to the performance appraisals are always controversial due to the reputation of their political sentiments (House, 1973).

The process involved is supposed to be an effort carried out by the leaders in schools, who are at the same time playing their roles as appraisers. In any circumstances, these leaders need to avoid any acts which will cause discomfort and dissatisfaction among teachers and will lead to

organizational conflicts. The distortion in giving the appraisal marks and feedback by the educational leaders in schools are very much questioned by the teachers as their subordinates due to the realization of the existence of biasness.

The evaluation involved multiple sensitive elements and the role played by the educational leaders as the evaluators need to meet the expectations from both sides; leaders and teachers (Yusuf, 2003). Teachers are one of the main contributors to the success of a school. Their willingness in providing contributions beyond the leaders' expectations will provide a good image, not just on the school leaders, but also on the school reputations. However, the school needs to have competent leaders who have the ability to lead (Kilic & Yavuz, 2021).

## **Literature Review**

### **a) The Halo Effect and Leadership Managements.**

The halo effect is one of the analytical biases which an individual tends to develop on other individuals or a group of people. People will be selective in the information that they received and will react based on the piece of that information relied on their preliminary and general perception (Kim, 2017). In the matter related to teachers' performance appraisal, the evaluation carried out will be affected by whatever impressions developed by the evaluator, which will either give positive or negative consequences. Some researchers define it as the tendency of a leader to evaluate an individual under his supervision based on particular traits of his favours (Javidmehr & Ebrahimpour, 2015).

Most leaders have a good 'personal' relationship with their subordinates, and in this case, between leaders in schools and teachers, they will not act and evaluate the teachers in a lower grade of evaluations. Even the strength possessed by the evaluated individual is very minimum and not at par, this still will be awarded positively by the leaders. The evaluations can be based on unrelated to work attributes. While for teachers who produced a poor outcome of a task given to them, the leaders may find mistakes in all of their future tasks, if they are not in a good 'personal' relationship.

These bias practices lead to errors in performance appraisal evaluations, and teachers with good performances may be victims to the Halo effect. This implicit bias and judgements caused the performance evaluation to be inaccurate and later this will lead to inefficient organization management. It is an unfair evaluation which considers personal attributes as part of the evaluation points, such as looks and personal work experiences.

Apart from the issues related to biasness, teachers and school leaders need to face another challenge which is related to politics in schools. This challenge is more complicated when dealing with performance appraisal due to the potential occurrence of corruption and power misused by the leaders (Cohen, 1973). Leaders and leadership are more than just a position. The definition is complex because of the role played by the individual is not merely on himself but it is a responsibility towards many people within the organization (Otazo, 2007)

The appraisal processes taking place in schools should focus on constructivism, which focus on gaining positivity of any setbacks occurring in the school. Speaking of constructivism, it is very much associated with leadership styles. However, as mentioned earlier, the 'subjective appraisal methods' by the educational leaders in school are always associated with biased judgements and inconsistencies. The accuracy and the appraisal objectivity seem to be very hard to achieve due to multiple negative judgments (Brauckmann & Pashiadis, 2011).

A long-term success of a school as an educational institution can only be achieved through good leaders and effective leadership. The success criteria of leaders can be achieved by good communication with the teachers which in many ways will help to improve the organizational conditions (Clarke & O'Donoghue, 2017). The fair and effective performance appraisal process will be done by leaders who manage to undertake the whole process with good management practices. Leaders need to have the ability to address any raising issues and problems with the context served around teachers and schools as well as the community around the schools.

Teachers will obey to any instructions and needs of their leaders if the leaders are able to provide fair treatments within the school ground. Leaders need to understand their willingness is based on their potentials and abilities to complete a certain task. Such a positive relationship between both parties will be merged through trust developed from the authenticity of leadership portrayed by the leaders by the teachers (Luthans & Avolio, 2003).

### **b) Leaders Behaviours and Leadership Styles.**

It is known that the post-covid school conditions had changed the school scene entirely, especially on the human behaviours. The dysfunctional behaviours in working places, such as schools, have become one of the focused topics for the past few years due to the various loss impacts it caused (Baharom, Sharfuddin, and Iqbal, 2017). Educational leaders need to play smart roles in managing schools and its community by not just giving instructions, but they also need to be empathetic.

Behavioural changes occurred in the community, and this article is focusing on the school community, who need to seriously be part of the appraisal considerations and holistically managed (Basharat Raza, Sylvie St-Onge & Alia Ahmed, 2022). The reaction of behaviour from the teachers is based on the policy implemented by the school leaders and these leaders need to have strategic objectives and a positive work ethics (Moos, Johansson & Day, 2011)

It is a common practice for leaders to set a high bar or standard of achievement for schools under their leadership. However, the aims need to be instructional because teachers are not merely following orders, but they need to be able to observe examples shown by the leaders (Donohoo, 2018). Any tasks required from the teachers need to be realistic and achievable.

It is generally accepted that leaders in school lead the school through setting up a good example, and this requires good communication between leaders and teachers. Leaders need to be able to provide good motivation apart from keeping a good welfare of the teachers. By these acts, the qualities of good leadership in school can be maintained (Sivakumar, A. & Arun, A., 2019). Their behaviours and reactions towards certain issues happening in schools need to be carefully decided due to their leaders' reputations to keep.

Teachers will be a good follower if the leaders have the ability to lead and share similar interests for the benefit of the organization (Khaola, 2021). This can be achieved through the practice of transformational leadership which is known to influence the loyalty of the teachers as the subordinates (Wang, Goh, Courtright, & Colbert, 2011). Leaders are the key to the success of the schools, and there is no doubt on this based on multiple conducted research's data (Podsakoff Mackenzie, Paine & Bachrach, 2000).

### **c) The Position of Organizational Justice in Teachers' Performance Appraisals.**

According to Al-Attas (1995), justice from the Islamic definition literally means harmonious relationship, and the harmony can only be gained through mutual trust without any violation

of contract between the parties involved. It is an ethic which needs to be possessed by leaders and teachers in conducting their tasks and responsibilities (Farsi, Shiraz, Rodgarnezhad & Anbardan, 2015).

Bias and politics in schools are not two current and alien issues. It is a well-accepted idea that performance appraisal is closely related to these issues, which at certain points, has become a culture. It is unfortunate that teachers have pre-set in their minds that injustice is openly practiced when dealing with performance appraisal in schools (Yusof, 2001). It is becoming a paradox, and the current appraisal documents were designed to mediate and overcome the matters. The design of the appraisal documents needs to consider several aspects such as the amount contributions, teachers' competency on the task given, as well as the seniority ((Mikkonen, K., *et al.*, 2018) and PBPPP is considered as a holistic tool in appraising teachers' performance appraisals.

## Research Methodology

### Materials and methods

To kick start, it is important for the researcher to analyse the formal appraisal documents of The Unified Evaluation for Education Service Officer (PBPPP). Apart from preparation in designing the interview questions, the documents analyzed led to a clear understanding of the contents and the relationship with any contradicted practices or implementations. Qualitative analysis of single explanatory design was adapted because of the nature of this study which involved investigating and thoroughly understanding the experiences derived from the views expressed by the teachers.

It is true that fair justifications by having both leaders and teacher's perceptions will provide non-bias data (Varouchas, Sicilia & Sanches-Alonso, 2018). However, this article is only focusing on the teachers, as they are the party who are facing the direct impacts of the whole implementation process. The interview questions were focusing on five aspects: the appraisal practices, implementation, teachers' experiences, organizational justice implications and issues and challenges faced by the teachers.

### Data Collection Procedures

Five teachers were involved with this research, and they were selected based on their experiences that they have and their access to the information and data (Yin, 2006). Table 1 is demonstrating the range of years of experiences as teachers which are between five to thirty years.

**Table 1: Informants involved.**

<b>Informant</b>	<b>Sex</b>	<b>Age</b>	<b>Working experience</b>
Teacher 1	male	53	30
Teacher 2	male	45	16
Teacher 3	female	39	14
Teacher 4	female	33	10
Teacher 5	female	29	5

This range of years in service helped on the diversity of the data gathered and at the same time, improved the reliability of the data. It is important for this research to find differences of views and perspectives of the teachers, and surely the wide range of service duration will help to provide the dynamic findings. The diverse range of years in service also will provide different narratives based on their experiences and observations. The interview questions were designed



based on the five focusses mentioned earlier, and in total, there were twelve questions used during the interview sessions. The sessions were conducted in two ways, face-to-face interactions and via online platforms of either WhatsApp or Google Meet. The Interviews were recorded and transcribed for the next stage of analysis.

### **Deductive Thematic analysis**

This deductive analysis involves a six-phase thematic analysis which helps the researcher to provide a systematic data analysis process (Clarke & Braun, 2006). Thematic analysis is a flexible data analysis guide which will help us to have a clear understanding of relationships between the data collections with the findings of the generated themes and at the same time helps to eliminate any unnecessary data. The steps involved are described as follows:

- Step 1: Familiarizing with the standard appraisal documents and the Halo Effect Theory.
- Step 2: Generating themes from the document analysis and interviews transcriptions  
(*practice, implementation, teachers' experiences, organizational justice, and issues and challenges*)
- Step 3 and 4: Review of the five themes.
- Step 5 and 6: Analysing the findings which includes reliability, validity and trustworthiness reports and reporting phase.

### **Reliability, Validity and Trustworthiness**

Two experienced inter-raters who are also teachers helped to examine the transcriptions and the themes given in order to seek reliability, validity, and trustworthiness of the data. Apart from that, it is a need and an effort to avoid any bias sentiments in the data analysis process. These validations are important in any qualitative research (Creswell, 2017). Their selection of criteria was based on their knowledge and experiences in the matter related to teachers' performance appraisals. The details of the raters are as follows:

**Table 2: Inter-raters**

	<b>Gender</b>	<b>Experience</b>	<b>Age</b>	<b>Positions in school</b>
1	female	18	44	Senior English teacher
2	Male	30	52	Middle-leader Team member

The agreement rates from the theme were calculated to find the agreements or disagreements of the themes coded from the transcriptions. To calculate the reliability rate, Miles, and Huberman (1994) calculation was referred as follows:

$$\text{Reliability: } \frac{\text{Number of Agreements (x)}}{\text{Number of Agreements + Disagreement}} \times 100$$

**Table 3: Reliability rates**

<b>Inter Rater</b>	<b>Gender</b>	<b>Coder Reliability Rate</b>
1	Female	100 %
2	Male	75 %

As shown in Table 3, the first inter-rater totally agreed with the responses given by the informants based on the themes used. However, the second rater agreed only seventy-five percent with the responses given. As a person who is a member of the Middle-leader team

(MLT) in school, he has the access to both sides of experiences as the first evaluator of teachers' performance appraisal and at the same time he also went through the process of being evaluated by the school leaders.

He justified that teachers and leaders need to have transparent communication, and this culture might differ from each school. To fully put flaws based on one-sided views and perception would not give justice to the entire school management and community. Furthermore, according to the second rater, the appraisal evaluation is twice a year. By this, teachers and leaders may plan for review sessions. It is either not practiced as a culture in the school or teachers do not feel it is necessary. He added that researchers also need to consider the numbers of the teachers because for a larger school, to personally plan meetings to review individual performance might be difficult due to the time constraints.

### **Results and Discussion.**

Halo Effect Theory was the research main discussion and main frame in setting the focuses and boundaries of the entire research. While for the data analysis, it involved a single-explanatory case study and adaptation of deductive thematic analysis. Qualitative methodologies were adapted due to the intention of the researcher to understand the real issues occurring in the process of the teachers' performance appraisals.

Many interesting facts were given during the response in the interview sessions. On the first theme, the implementation, teachers found that the processes involved, and the instructions given are not in sequence and there were some internal conflicts that happened along the way.

*"I don't think it's parallel...especially the curriculum. As for the other part, we can see it (is clearly distributed). We can evaluate for ourselves because we did the work."*

This quotation above shows that the decisions made were not clearly discussed and reviewed between leaders and teachers. This caused some information to be not fully delivered and a lack of reliability in their implementations. At the end, decisions made within the organization will be poorly managed (Wagner, 1991). There are mixed feelings shown by the teachers in relation to the way leaders practice the performance appraisal. In dealing with this, here are some responses collected:

*"Only once a year. when it's time to collect. That's the time he (the leader) will give the details...so the effectiveness is not clearly seen".*

*"I think it's only on paper. Maybe. The 'filling-in' the form is done but they do not bother to review".*

From the quotations given, there is a lack of detailed instructions given by the leaders in the practices of performing the appraisals. This had caused unsatisfied sentiments among the teachers. It shows that the school leaders are more focusing on the performance management, and not on measuring the performance itself. In other words, they are focusing on the results of the school achievements rather than the teachers' performance as individuals (Gerrish, 2016). Leaders are the central reference of organizational justice (Nielson., Christensen, Finnes, & Knardahl, 2018). Leaders need to juggle between the leadership capabilities and organizational justice carefully because any lack of both may cause severe damage either on

the teachers' sides or the management reputations. The responses from the teachers in the related matter however gave us a staggering perception.

*"As for now, I have to accept that even the feeling of not being satisfied is there..."*

*"The appraisal award is awarded not to the right person, and this is unfair for teachers who are fully committed".*

To add to this, there were teachers who expressed their unpleasant experiences dealing with performance appraisal. One of the statements is listed below. The issue that can be pointed out in this matter is whether the leaders are competent to lead the school as an organization or not.

*"Sometimes confusing things happen. Leaders were describing things differently from teachers. so, when we are filling in the appraisal evaluation form, everything is confusing".*

Teachers were describing their experiences on the performance appraisal conducted as unpleasant experiences and full of conflicts. The processes involved were not transparent and political bias was openly practiced. Bias in performance appraisal leads the leaders into a difficult situation to make any decisions, and leaders will have a great tendency of creating errors in matters such as selecting teachers for an appraisal reward (Moers, 2005). As stated in a quotation from the collected data:

*"Yes, 'Politic' has its role which caused the outstanding award to be given to unqualified teachers".*

The data from the analysed themes had given this research quite a tremendous mixed feeling and shocking experiences whether PBPPP has successfully understood, and well accepted, or merely done for the sake of procedural instructions by the Ministry. The generated themes were designed to establish the positional implementations and implications of the appraisal process, and yet teachers' response was more on internal issues and domestic challenges going on in the appraisal implementation.

As for the documents used as the references for the teachers' performance appraisals were claimed to be holistic in terms of the procedures and process, the highlight now is on the capabilities of the leaders. From the analysis done. It shows that the core issue is leadership competencies and the lack of it has caused multiple conflicts within the management of the schools.

## **Conclusion**

The findings from the analysis conducted can be either shocking or interesting. It depends on the context of the focus where the researchers want to point and focus on. However, the dynamic positions in terms of the contradicting opinions between teachers and what had been implemented by the leaders can be clearly seen. The fact that teachers' performance appraisal is a powerful tool used to provide positive emotional impacts on teachers, such as providing a positive motivation is undeniable (Davis & Newstrom, 1993).

Performance appraisal will work with a good performance management operation within the school organizations (Obi, 2016). Leaders need to fully function by thoroughly understanding their roles in the evaluation processes. However, from the data analysed, teachers gave us

opposite reflections of the story. From the findings, the leaders are unable to utilise and manipulate the tools accordingly. In the context of appreciation, rewards and teachers' work recognition, the practices are based on biased perceptions.

It is time to act and do something about this. The communication between leaders and teachers needs to be repaired and at the same time, the selection of the change to leaders needs to be improved in order to restore the trust sentiments between the members of the school. This needs to be done in a careful and thorough approach. The only way to a better culture is only by having the leaders who are willing to make the first move to change even it will take some time (Ali & Waqar,2013)

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# REIMAGINING INSTRUCTIONAL LEADERSHIP THROUGH DIFFERENTIATED INSTRUCTION AS A VALUE-BASED LEADERSHIP PRACTICE

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**Abstract:** *This paper explores how instructional leadership can be redefined through differentiated learning (DI) practices as a reflection of value-based leadership (VBL) in Malaysian secondary schools. Grounded in Tomlinson's (2017) framework on responsive teaching and Rao's (2017) principles of VBL, the study examines the role of instructional leaders in fostering equity and inclusivity by supporting teachers' capacity to address diverse learner needs. A convergent parallel mixed methods design was employed, involving 38 teachers who participated in the Dare to Differentiate Programme. Quantitative data were collected through pre- and post-surveys measuring teacher confidence and self-rated mastery of DI, while qualitative data were drawn from lesson observations (n = 5), semi-structured interviews with observed teachers (n = 5), professional learning community (PLC) reflections, and SKPMg2 scoring (standard 4). Data were analyzed independently and then integrated at the point of interface to generate meta-inferences. Findings indicate that while teachers became more confident in applying DI following training, they continued to face structural challenges such as workload, class size, and resource limitations. Qualitative insights showed that leadership values—empathy, fairness, and collaboration—were pivotal in sustaining DI practices through PLCs, scaffolding, and shared reflections. The study concludes that DI, when framed as a VBL practice, is both a pedagogical strategy and a leadership imperative for cultivating inclusive and equitable school ecosystems.*

**Keywords:** *Instructional Leadership, Differentiated Instruction, Value-Based Leadership, Equity, Teacher Empowerment*

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## 1. Introduction

Classrooms today are highly diverse, with students differing in prior knowledge, learning preferences, sociocultural backgrounds, and pace of progress (OECD, 2020; Tomlinson, 2017). Rising classroom heterogeneity challenges teachers to meet diverse learner needs and ensure equitable access (Nusser & Gehrler, 2020; Stanat et al., 2017). Differentiated Instruction (DI) therefore addresses this by adapting content, process, product, and learning environments to narrow achievement gaps and optimise outcomes (Tomlinson, 2014). Although many education policies endorse differentiated instruction (DI) for promoting equity and improving outcomes (Bondie et al., 2019; D'Intino & Wang, 2021), classroom evidence shows it is still inconsistently applied (Pozas et al., 2020). This gap highlights the need for more than conceptual awareness as teachers require preparation, sustained professional support, and repeated practice to embed DI effectively (Dixon et al., 2014; Suprayogi et al., 2017).

In Malaysia, inclusivity and equity are core priorities of 21st-century learning (Tomlinson, 2017; Whitley et al., 2019). The removal of streaming classes has placed learners of diverse abilities and interests in the same classrooms (MOE, 2018a), intensifying the urgency for DI. Yet, heavy workloads, limited resources, and large class sizes continue to constrain implementation (Ali et al., 2023; Mohammad et al., 2024). These realities position DI not only as pedagogy but also as a leadership responsibility. Leadership practices such as professional learning, coaching, equitable workload distribution, and resource provision are essential to create enabling conditions (Ali et al., 2023). Value-Based Leadership (VBL), grounded in self-

reflection, balance, confidence, and humility (Rao, 2017), complements DI's ethos of fairness and inclusivity.

Together, DI and VBL provide a framework for reimagining instructional leadership that unites pedagogy with moral purpose. Building on this perspective, the study argues that DI, when enacted through VBL, is not only a pedagogical strategy but also a moral imperative for creating inclusive, equitable, and high-quality education. Guided by this stance, the research is driven by the following questions:

- RQ1 : What challenges are perceived by teachers in implementing DI in Malaysian classrooms?
- RQ2 : How can VBL support teachers' capacity to implement DI effectively?
- RQ3 : Why is integrating DI and VBL essential for building equitable and inclusive educational ecosystems?

## 2.0 Literature Review

### 2.1 Differentiated Instruction

Investigations of differentiated instruction (DI) have brought substantial insights into how teaching can be tailored to accommodate learner readiness, interest, and profiles in diverse classrooms (Tomlinson, 2017; Whitley et al., 2019). DI is often defined as a proactive approach that modifies content, process, product, and learning environment to maximize student growth and individual success (Tomlinson, 2000; Gregory & Chapman, 2007). However, DI has both a "broad" and a "narrow" sense. In a broad sense, DI is regarded as a philosophy of inclusive teaching that frames how educators plan, assess, and create classroom culture (Tomlinson, 2014). In the narrower sense, DI refers to specific strategies such as tiered tasks, flexible grouping, and scaffolded assessments (Heacox, 2012).

Therefore, the challenge of defining and measuring DI across contexts persists, since classroom enactments vary in fidelity and are shaped by situational factors such as workload, school culture, and student (Hajis & Othman, 2024). In order to understand DI more comprehensively, scholars often refer to its four elements—content, process, product, and environment—which provide a framework for planning. Content refers to what is taught, process concerns how learning is facilitated, product involves the evidence of learning produced by students, and environment highlights the conditions of learning (Tomlinson, 2017). Yet, empirical evidence suggests that implementation remains uneven: teachers may acknowledge DI in principle but often revert to whole-class instruction due to time and resource constraints (Deunk et al., 2018).

### 2.2 Value-Based Leadership

Leadership is central to institutional effectiveness. Maclean (2016) highlights its role in shaping policies, workload distribution, and teaching dynamics, while Ramsden (2003) stresses its influence on organisational culture, staff motivation, and student outcomes. Yet, globalisation, economic pressures, and neoliberal reforms have intensified leadership complexity, requiring adaptability, resilience, and stronger ethical engagement (Davies & Thomas, 2010; Marginson, 2009). In contrast to managerial models focused on efficiency, scholars increasingly argue for leadership grounded in values. VBL addresses this need by emphasising self-reflection, balance, self-confidence, and humility (Rao, 2017). Unlike transactional approaches, VBL integrates personal, organisational, and societal values to serve the collective good (Kalshoven & Taylor, 2018) aligning with calls for leadership that cultivates positive workplace cultures and well-being (Thoroughgood et al., 2018).



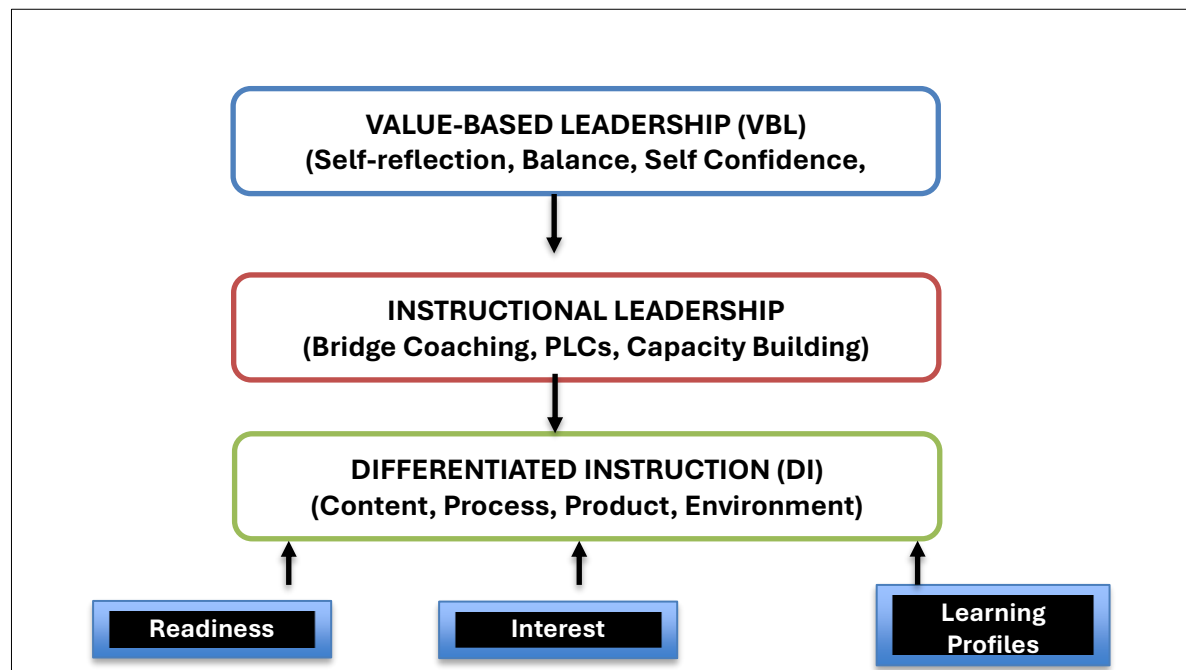
While DI is widely endorsed, its success depends on leadership that builds teacher capacity and fidelity. VBL-oriented leaders support this through equitable workload distribution, professional learning, and alignment with the Malaysian Education Blueprint 2013–2025. Unlike policy mandates that often fail to reach classrooms (Pozas et al., 2020), VBL provides the conditions for lasting DI through coaching and reflective supervision (Ali et al., 2023). Transformational leadership theory reinforces this view: leaders who inspire teachers beyond self-interest foster innovation, adaptability, and moral responsibility (Burns, 1978). In contrast, leadership without ethical grounding risks compliance cultures that stifle inclusivity. Overall, the literature suggests DI cannot be sustained without the ethical foundation of VBL and the operational mechanisms of instructional leadership. Yet, how VBL practically sustains DI in Malaysian classrooms remains underexplored; a gap this study addresses.

### *2.2 Teacher Professional Development for DI*

Ongoing teacher professional development (TPD) is widely recognised as essential for addressing learner diversity (Gheysens et al., 2020). While formats range from short workshops to long-term programmes linked to improved student outcomes (Guskey, 2002; van Veen et al., 2012), access often remains fragmented in contexts such as Malaysia due to financial and logistical constraints (Sims & Fletcher-Wood, 2021). Meta-analyses further suggest that DI-focused TPD can improve practice, but only when grounded in theory and sustained over time (Kahmann et al., 2022). Yet, technical training alone is insufficient. Teacher self-efficacy and enthusiasm strongly influence DI implementation. Kalinowski et al., (2024) found that while self-efficacy is crucial for addressing diverse learners, enthusiasm is an even stronger predictor of instructional quality. This suggests that leadership support must cultivate not only technical expertise but also teacher confidence and joy in teaching.

### *2.3 Conceptual Framework*

The conceptual framework highlights the interplay between VBL, Instructional Leadership (IL), and DI. VBL provides the ethical foundation, anchored in self-reflection, balance, self-confidence, and humility (Rao, 2017) while DI represents the pedagogical outcome, adapting instruction to learners' readiness, interests, and profiles (Tomlinson, 2014). IL functions as the operational bridge, translating leadership values into practice through coaching, supervision, and capacity-building structures that directly shape teaching and learning. In this way, the framework demonstrates how abstract values are enacted through concrete instructional processes that materialise as equitable and inclusive practices.



### 3.0 Research Methodology

#### 3.1 Mixed Methods Study Design

This study used a convergent parallel mixed methods design to examine how differentiated instruction (DI) can be reframed as a VBL practice in Malaysian secondary classrooms. Quantitative and qualitative strands were collected simultaneously, analysed independently, and merged to produce meta-inferences (Creswell & Plano Clark, 2011). The design captured both measurable changes in teacher confidence and contextual insights on classroom practice and leadership, addressing the study's three research questions. The study commenced with the Dare to Differentiate programme, which provided teachers with a foundational understanding of DI. This foundation was subsequently reinforced through PLCs and later examined through lesson observations, preceded and followed by semi-structured interviews to capture teachers' planning and reflections.

#### 3.2 Quantitative Strand

38 secondary teachers (22 from SMK Tasek Damai and 16 from other schools) attended the Dare to Differentiate programme, which provided a common foundation in DI. The quantitative strand measured confidence in DI strategies such as scaffolding, grouping, and tiered tasks on a four-point scale. Post-surveys captured shifts in confidence and feasibility. Findings were also triangulated with lesson observations, PLC reflections, and interviews, while descriptive analysis offered evidence of the programme's impact on teacher readiness to implement DI.

#### 3.3 Qualitative Strand

The qualitative strand explored how DI was enacted in classrooms and how VBL supported or constrained its implementation. It complements the survey data on teacher confidence, capturing classroom practices as well as leadership influences critical insights in Malaysia's context of large classes, diverse learners, and heavy workloads amid policy demands for inclusivity and equity. Therefore, the study adopted lesson observations with five teachers at SMK Tasek Damai examining DI strategies such as scaffolding, tiered tasks and flexible grouping. Evidence was recorded using SKPMg2 Standard 4 rubric, which highlighted how these practices enhanced planning, facilitation, assessment, and engagement.

In addition, semi-structured interviews with five teachers were also conducted before and after lesson observations to explore planning and reflections on the effectiveness and the role of leader support in sustaining DI. Professional Learning Community (PLC) sessions with 22 teachers, facilitated by the researcher were further conducted which then generated reflections that revealed themes of equity, empowerment, moral purpose, and challenges, positioning DI as an expression of VBL. Taken together, the triangulation of observations, interviews, and PLC reflections provided a comprehensive view of DI implementation. The table below summarises the instrumentation and data collection of this study.

**Table 1: Instrumentation and Data Collection in Quantitative and Qualitative Strands**

STRAND	PARTICIPANTS	INSTRUMENTS / DATA SOURCES	ANALYSIS APPROACH
<b>Quantitative Strand</b>	1. 38 teachers total -22 from SMK Tasek Damai -16 from other schools	1. <b>Pre-survey</b> (before programme): Baseline self-rated mastery of DI strategies (scaffolding, flexible grouping, tiered tasks, gamification). 2. <b>Post-survey</b> (after programme): Confidence, readiness, and feasibility of DI implementation.	Descriptive statistics (frequencies, percentages)
<b>Qualitative Strand</b>	1. 5 observed teachers (SMK Tasek Damai) 2. 22 teachers contributing PLC reflections (internal) 3. Semi structured interview with 5 observed teachers	1. <b>Lesson Observations</b> 5 lessons documented. 2. <b>Standard 4 SKPMg2 Scoring Form (PdPc)</b> Applied during observations to evaluate alignment with national teaching-learning quality standards. 3. <b>PLC Reflections</b> from all 22 teachers at SMK Tasek Damai (reflection forms) 4. <b>Semi-structured Interviews</b> with 5 observed teachers (conducted pre- and post-observation).	<ul style="list-style-type: none"> <li>• Thematic analysis (Braun &amp; Clarke, 2013) applied to observations, interviews, PLC reflections.</li> <li>• Scoring form SKPMg2 Standard 4 used to gauge DI with national PdPc quality indicators.</li> </ul>

**Table 2 : Pre and Post Survey Summary**

Feedback Dimension	Findings
Programme Content	<ul style="list-style-type: none"> <li>• Rated highly relevant; teachers appreciated practical strategies.</li> </ul>
Facilitation	<ul style="list-style-type: none"> <li>• Positive ratings; engaging and clear explanations noted.</li> </ul>
Confidence in Applying DI	<ul style="list-style-type: none"> <li>• Increased; many indicated readiness to trial DI in classrooms.</li> </ul>
Challenges Identified	<ul style="list-style-type: none"> <li>• Time constraints, workload, and large class sizes.</li> </ul>
Support Needed	<ul style="list-style-type: none"> <li>• ICT tools, follow-up sessions, collaborative PLCs.</li> </ul>

#### 4.0 Results

Prior to analysis, the normality of the survey data was assessed using skewness and kurtosis statistics. When divided by their respective standard errors, all values were below the recommended threshold of  $\pm 3.3$ , indicating that the data were approximately normally distributed (George & Mallery, 2010; Kim, 2013). This confirmed the suitability of the data for descriptive analysis, and the results are therefore reported according to the three research questions guiding the study

RQ1: What challenges do teachers face in implementing differentiated instruction (DI) in Malaysian classrooms?

*Quantitative results.* Survey data (n = 38) revealed that before the Dare to Differentiate programme, teachers reported modest confidence in applying DI (M = 2.08, SD = 0.64 on a 4-point scale). After training, confidence increased to M = 2.64 (SD = 0.71), representing a mean gain of 0.56 points (~27% improvement). However, the distribution of responses highlighted a more nuanced picture: while several teachers moved from somewhat skilled to skilled, approximately one-fifth reported no change, and about 8 teachers (~21%) actually rated themselves lower post-training. This downward shift may reflect teachers' growing awareness of the complexity of DI after the workshop, leading them to re-evaluate their skills more critically. Only around 20% of teachers rated themselves as "skilled or higher" after the training, suggesting that confidence, while improved, remained modest overall.

*Qualitative Strand* – Data were collected from 22 teachers at SMK Tasek Damai through Professional Learning Community (PLC) sessions facilitated by the researcher. These PLCs created space for DI communication and discussion as teachers' suggestions and reflections were systematically documented using structured reflection forms. Analysis of the reflections revealed four themes guiding the principles of VBL namely, balance, self-confidence, humility and self-reflection. For reporting purposes, three reflections are presented under each theme to provide representative coverage of perspectives while maintaining clarity.

**Table 3 : Balance (VBL)**

<b>Teacher Reflections (PLC Discussion)</b>	<b>Interpretation (Leadership as VBL)</b>
"It makes sense to prepare different levels of worksheets so every pupil can attempt something."	The facilitator/Panel Head modelled tiered tasks, prompting teachers to discuss equity in practice.
"Using visuals with text would really help our pupils who struggle with written instructions."	Leaders promoted inclusive strategies, guiding the group to see fairness beyond text-based teaching
"Maybe we should try grouping by readiness instead of always random grouping."	Leaders legitimised readiness-based grouping as a fair practice, encouraging teachers to consider alternatives.

**Table 4: Self Confidence (VBL)**

<b>Teacher Reflections (PLC Discussion)</b>	<b>Interpretation (Leadership as VBL)</b>
"Trying out Wayground here gave me the confidence to consider online quizzes for my class."	Leaders empowered teachers by modelling digital tools and making them accessible.
"It's good to start small—maybe one differentiated task first, then expand later."	Leaders encouraged manageable risk-taking, framing empowerment as incremental growth.
"We should view DI as trial-and-error, not something we have to perfect immediately."	The facilitator reinforced a growth mindset, under supportive leadership.

**Table 5 : Humility (VBL)**

<b>Teacher Reflections (PLC Discussion)</b>	<b>Interpretation (Leadership as VBL)</b>
"DI seems less like a strategy and more like a responsibility to make sure every child learns."	Leaders positioned DI as a moral obligation, not just a teaching technique.
"Focusing only on top achievers is unfair; we need to design support for weaker pupils too."	Panel Heads guided teachers to confront deficit thinking, emphasising fairness as a value.
"We should avoid labelling pupils as 'weak.' Everyone has different ways of learning."	Leaders modelled respect and dignity as part of moral purpose in teaching.

**Table 6: Self Reflection ( VBL)**

<b>Teacher Reflections (PLC Discussion)</b>	<b>Interpretation (Leadership as VBL)</b>
“Preparing multiple worksheets will be challenging with our workload.”	Leaders are expected to recognise workload and advocate for reduced burdens.
“With 31 pupils in one class, monitoring groups doing different activities could be very tough.”	Leaders must acknowledge systemic realities like class size in DI implementation.
“The syllabus load may make DI hard to prioritise consistently.”	Panel Heads should balance policy demands with the moral purpose of inclusivity.

**Meta-inference (RQ1 answer):**

Survey and PLC data confirm that while teachers are motivated to implement DI, they face barriers of workload, class size, and resource limitations that make it hard to be consistent. Confidence improved after training, but some teachers rated themselves lower as they realised how complex DI really is. PLC reflections showed that teachers understood these challenges through the values of VBL as leaders encouraged fairness and built confidence by supporting small steps and trial-and-error, promoted humility by reminding teachers of their duty to every learner, and encouraged reflection by recognising workload and resource pressures. Findings suggest the challenge lies not in willingness but in the support and conditions leaders provide for DI in Malaysian classrooms.

b) RQ 2 : How can VBL practices support and sustain teachers’ capacity to implement DI effectively?

*Quantitative results*

The second research question explored how DI reflects VBL in instructional leadership. Survey data from 38 teachers were analysed across four areas: programme content, facilitation quality, readiness, and support needs. Programme content ( $M = 4.13$ ,  $SD = 0.47$ ) and facilitation quality ( $M = 4.11$ ,  $SD = 0.69$ ) were rated highly, with teachers highlighting alignment to DI principles and VBL values. Readiness to trial DI was also strong ( $M = 3.97$ ,  $SD = 0.59$ ), suggesting empowerment and moral responsibility to meet diverse learner needs. However, teachers emphasised the need for sustained support, coaching (84.2%), and structured PLCs (89.5%). These findings indicate that sustainability of DI relies on mentoring.

**Table 7 : Descriptive Data of a Survey Conducted with 38 Teachers**

<b>Item</b>	<b>Mean (SD)</b>	<b>% Teachers Indicating Agreement</b>
Programme content aligned with DI & VBL	4.13 (0.47)	–
Facilitation reflected VBL values	4.11 (0.69)	–
Readiness to trial DI after programme	3.97 (0.59)	–
Teachers indicated need for follow-up coaching	–	84.2%
Teachers indicated need for PLC structures	–	89.5%

*Qualitative findings* -The SKPMg2 Standard 4 lesson observations provided insights into both the strengths and challenges teachers encountered in implementing DI.

Table 8 : Scores and Rating from 5 Lessons Observed using SKPMg2

Teacher	Aspect 4.1 – Teacher as Planner	Aspect 4.2 Teacher as Controller	Aspect 4.3 – Teacher as Guide	Aspect 4.4 Teacher as Motivator	Aspect 4.5 Teacher as Assessor	Aspect 4. 6– Pupils Active Learners	Total Score & Rating
Teacher 1	Objectives measurable; tasks and assessments matched readiness. <b>4.1.1 – 10.0</b>	Content scaffolded to meet objectives; for different level <b>4.2.1 – 8.33</b> <b>4.2.2 – 4.38</b>	Guided questioning fostered independence <b>4.3.1 – 14.25</b>	Gamified tasks and prompts actively engaged pupils 4.4.1 – 22.32 <b>4.4.2 – 5.00</b>	Assessment and feedback were seamlessly integrated. <b>4.5.1 – 10.00</b>	High students' participation (>90%). <b>4.6.1- 18.57</b>	<b>TOTAL 94.64 – Excellent</b>
Teacher 2	Measurable outcomes and mixed-ability tasks were emphasized. <b>4.1.1 – 10.0</b>	Objectives, pacing, and differentiation sustained active learning <b>4.2.1 – 8.33</b> <b>4.2.2 – 4.38</b>	Progressive independence built via probing questions. <b>4.3.1 – 14.25</b>	The teacher motivated pupils with collaborative tasks <b>4.4.1 – 22.32</b> <b>4.4.2 – 5.00</b>	Teacher integrated assessment and timely feedback. <b>4.5.1- 10.0</b>	Active participation 90%, demonstrating differentiation outcomes. <b>4.6.1- 18.57</b>	<b>TOTAL 92.85 – Excellent</b>
Teacher 3	Scaffolded objectives with profile-based assessments <b>4.1.1 – 10.0</b>	Lesson managed to support varied learner progress. <b>4.2.1 – 8.33</b> <b>4.2.2 – 4.38</b>	Supportive modelling fostered inclusion and extension. <b>4.3.1 – 12.75</b>	Regular feedback strengthened motivation  <b>4.4.1 – 23.21</b> <b>4.4.2 – 4.38</b>	Continuous formative assessment supported by rubrics and oral feedback <b>4.5.1- 10.0</b>	Learners produced scaffolded and extended work samples <b>4.6.1- 18.57.</b>	<b>TOTAL 91.62 – Excellent</b>
Teacher 4	RPH aligned; questioning, rubrics, and tiered tasks used. <b>4.1.1 – 10.0</b>	Core goals met; DI consistency across groups lacking. <b>4.2.1 – 8.33</b> <b>4.2.2 – 4.38</b>	Aids present, but weak adaptation and extension. <b>4.3.1 – 12.75</b>	Engagement encouraged, but motivation lapsed with difficulties. <b>4.4.1 – 23.21</b> <b>4.4.2 – 4.06</b>	Observation and quizzes supported formative feedback. <b>4.5.1- 9.50</b>	Great participation showing inclusivity in differentiation. <b>4.6.1- 16.43</b>	<b>TOTAL 88.66 – Good</b>
Teacher 5	RPH integrated objectives, assessments; tiering underdeveloped <b>4.1.1 – 8.33</b>	Weaker supported, advanced extended; timing advice needed. <b>4.2.1 – 8.33</b> <b>4.2.2 – 4.38</b>	Structured support fostered confidence and learner autonomy. <b>4.3.1 – 12.75</b>	Team tasks motivated, but feedback consistency lacked.  <b>4.4.1 – 22.32</b> <b>4.4.2 – 4.06</b>	Feedback integrated assessments; methods lacked variety. <b>4.5.1- 8.50</b>	Active participation reflected in differentiated tasks. <b>4.6.1- 16.43</b>	<b>TOTAL 85.10 – Good</b>

**Meta-Inference (RQ2 answer)**

Survey and observation data using SKPMG2 show that DI is sustained most effectively when supported by VBL. Teachers rated programme content (M = 4.13) and facilitation (M = 4.11) as strongly aligned with values of equity, empathy, and collaboration, and reported higher readiness to trial DI (M = 3.97). Yet over 80% called for sustained support through ICT, coaching, and PLCs—confirming that empowerment must be matched with structural backing. Lesson observations reinforced this: three teachers achieved *Excellent* ratings and two *Good*, demonstrating DI practices. Even where implementation was partial, VBL-driven support—

through modelling fairness, legitimising experimentation, and framing DI as moral responsibility—enabled growth. Together, these findings highlight that VBL not only inspires but operationalises DI by combining values with resources, mentoring, and systemic advocacy.

c) RQ 3 : 1. Why is integrating Differentiated Instruction (DI) and VBL essential for building equitable and inclusive educational ecosystems?

### *Qualitative Strand*

Semi-structured interviews were conducted before and after lessons to explore teachers' planned DI strategies, grouping choices, challenges, feasibility, and support needs. This two-phase design captured both planning and reflection which 'provide a comprehensive understanding and to complement the quantitative data' (Kabilan & Kamaruddin, 2010, p. 140). Reliability and validity were ensured through suggestions outlined by Cohen, Manion, and Morrison (2000), with neutral questioning to minimise bias. Pre-observation interviews examined intentions and expectations, while post-observation interviews probed strategy effectiveness, challenges, and support needs.

**Table 9. Semi-structured questions for the interviews with 5 teachers**

Pre-Observation (Planning)	Post-Observation (Reflection)
1. What differentiated strategies do you intend to use in this lesson, and why?	1. What differentiated strategies did you actually use in this lesson, and why?
2. What challenges do you anticipate when trying to differentiate tasks?	2. What challenges did you encounter when differentiating tasks, and how did you respond?
3. Before teaching, do you see DI as a feasible practice in your classroom?	3. After teaching this lesson, do you still see DI as feasible or idealistic? Why?
4. What support do you expect would help?	4. Based on this lesson, what support would help you implement DI better in the future?

**Table 10. Sample schema to code, arrange and organise data ( interview) according to the themes.**

Example Excerpts (Teachers)	Analyses (notes/comments)	Themes Emerged
<p><u>DI Strategies</u>  <b>Pre:</b>            "I plan to try tiered tasks for different readiness levels." (T3)  <b>Post:</b>            "My tiered tasks were not perfect, but even the weaker pupils managed the simpler tier, which encouraged me." (T3)</p>	<p>Teachers initially planned scaffolding, and tiering. After implementation, they saw pupils respond positively, especially weaker ones who engaged more than expected.</p>	<p><b>Intended vs. Enacted DI Strategies.</b>            Teachers realised even partial DI strategies could work and build pupil confidence.</p>
<p><u>Challenges</u>  <b>Pre:</b>            "Managing large classes will be tough when tasks differ." (T2)  <b>Post:</b> "Time was tight, but I still managed two DI strategies, which felt like a success." (T1)</p>	<p>While challenges existed, teachers reframed them positively, noting that pupils' even small-scale DI was impactful.</p>	<p><b>Challenges Reframed.</b>            Teachers saw obstacles as manageable in DI activities.</p>

<p><u><i>Belief in DI</i></u>  <b>Pre:</b>  “DI sounds good, but I’m not sure it’s realistic in large classes.” (T4)  <b>Post:</b>  “It worked better than expected; pupils were more engaged and I felt encouraged.” (T4)</p>	<p>Teachers’ perceptions shifted significantly after practice: DI was no longer seen as idealistic but as a feasible.</p>	<p><b>Belief Shift.</b>  Teachers’ attitudes moved from scepticism to confidence.</p>
<p><u><i>Support Needed</i></u>  <b>Pre:</b>  “Leadership encouragement would help me try new strategies.” (T3)  <b>Post:</b>  “PLC support motivated me — I felt less alone in trying DI.” (T3)</p>	<p>Teachers consistently emphasised support but framed it as an enabler, not a barrier.</p>	<p><b>Support as Enabler.</b> Teachers highlighted how systemic support builds confidence and sustained DI practice.</p>

## 5.0 Discussion

*RQ1: What challenges are perceived by teachers in implementing DI in Malaysian classrooms?*

Survey findings suggest that while many teachers reported greater confidence in DI after training, others showed little change, and some became more cautious as they recognised its complexity (Dixon et al., 2014; Suprayogi et al., 2017; Tomlinson, 2014). This reflects how professional learning can prompt teachers to recalibrate their self-perceptions against the realities of practice. At the same time, calls for ICT, coaching, and PLCs reinforce that the main barriers lie in systemic support rather than teacher intent (Ali et al., 2023; Kahmann et al., 2022). PLC reflections corroborated these perceptions. Teachers gained confidence through collaborative planning and peer feedback, but highlighted persistent constraints: heavy workload, managing large groups, limited ICT and resources, and syllabus pressures (Sims & Fletcher-Wood, 2021). They also identified tensions central to equitable DI—moving beyond text-only materials, legitimising readiness-based grouping, designing rotation/station work, and adapting assessments—areas where attention to process and product is critical (Heacox, 2012). These challenges are further intensified by Malaysia’s end of streaming, which brings increasingly diverse readiness and profiles into the same classroom (MOE, 2018a ; OECD, 2020). In sum, RQ1 shows that teachers are willing and aware of how to differentiate, but their practice is constrained by mentioned constraints.

*RQ2: How can VBL support teachers’ capacity to implement DI effectively?*

The second research question examined how VBL sustained teachers’ growth from conceptual awareness of DI toward observable practice. The Dare to Differentiate programme provided a common foundation, but PLCs gave teachers the confidence to apply it. Guided by leaders modelling balance, humility, self-confidence, and self-reflection (Rao, 2017), PLCs legitimised readiness-based grouping, encouraged incremental risk-taking, framed DI as a moral duty, and acknowledged systemic challenges such as workload and class size. This supports Ali et al., (2023) view that teacher capacity grows when leaders provide coaching, resources, and moral encouragement rather than compliance-driven directives. Lesson observations further showed how VBL shaped DI. Strong planning, scaffolding, flexible grouping, and motivation reflected equity-driven instruction (Tomlinson, 2014), while partial enactments suggested that consistency depends less on intent than on continued practice and leadership support (Heacox, 2012; Tas & Minaz, 2024). In this way, DI moved from isolated techniques toward sustainable practice. Taken together, the progression from Dare to Differentiate to PLCs and finally



classroom observations demonstrate how VBL operationalises DI. Leaders who model fairness and humility, create spaces for reflection, and advocate observable improvements in teaching.

*RQ3: Why is integrating DI and VBL essential for building equitable and inclusive educational ecosystems?*

The final research question positions differentiated instruction (DI) and value-based leadership (VBL) within a systems perspective. Across surveys, PLCs, and lesson observations, a clear pattern emerged: teachers are willing and increasingly capable of differentiation, but sustainability depends on leadership values translated into systemic support. DI alone risks inconsistency, and VBL alone risks abstraction; integrated, they provide the enabling conditions for equity. Survey findings confirmed this integration, with high ratings for programme content and facilitation reflecting alignment with fairness and empathy—core VBL values. Yet most teachers highlighted the need for ICT, coaching, and PLCs, showing that leadership must institutionalise ongoing support (Ali et al., 2023; Kahmann et al., 2022).

PLC reflections reinforced this through VBL principles: balance in equitable task design, self-confidence through peer coaching and risk-taking, humility as moral responsibility to all learners, and self-reflection through advocacy for resources and workload recognition (Rao, 2017; Heacox, 2012; Tas & Minaz, 2024). Lesson observations provided concrete evidence, with three teachers rated Excellent and two Good on SKPMg2. Overall, the data show that integrating DI with VBL is vital for building equitable and inclusive ecosystems. In classrooms, it ensures all learners access meaningful opportunities, while at system level it supports national reforms and abolition of streaming (MOE, 2013). Echoing OECD (2020), this study affirms that DI through VBL is not merely a strategy but a leadership imperative that embeds inclusivity in both values and practice.

## 6.0 Conclusion

This study concludes that DI, when coupled with VBL, is both feasible and transformative. Teachers shifted from viewing DI as burdensome to seeing it as achievable and worthwhile when supported by professional dialogue and leadership. Teacher reflections also highlighted leadership values such as empathy, resilience, and fairness as vital to sustaining practice. Although limited by a small sample ( $n = 38$ ; 5 observed and interviewed), the study provides evidence that DI can be reframed as a value-based leadership stance. Future research with larger, longitudinal samples would strengthen this evidence. In contexts where equity and inclusion are priorities, the study recommends positioning DI not only as pedagogy but as leadership philosophy—modelling fairness, empowering learners, and fostering cultures where every student can succeed.

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# IMPLEMENTATION OF CONTINUOUS ASSESSMENT FOR REAL-TYPE FINAL YEAR PROJECT IN VOCATIONAL EDUCATION

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**Abstract:** *The final year project is one of the compulsory courses that students must take in the vocational education. Final year project that are usually carried out by vocational students are real-type projects. The final year project managed by chief coordinator selected in the institution. The chief coordinator will distribute the task to all coordinators in the programmes. The task covers continuous assessment such as proposal preparation, presentation, project development, and reports. The execution of the continuous assessment will be carried out by the final year project supervisors. This continuous assessment for the final year project is carried out using constructive alignment to assess students' learning outcomes. Continuous assessment for real-type final year projects is different compare with research projects. Therefore, this study aims to identify the appropriateness and effectiveness of continuous assessment in real-type final year project. Mixed method design is used in this research using quantitative and qualitative approach. A total of 42 respondents final year project supervisors participated for quantitative studies. Meanwhile, 5 respondents participated for qualitative studies. Questionnaire are used to collect quantitative data involving demographic of educators together with continuous assessment appropriateness and effectiveness. The quantitative data analysed using descriptive statistics. Meanwhile, qualitative data from semi-structured interviews are analysed using thematic analysis. The data analysed by transcribing the interviews verbatim, coded and categorized by theme. The findings shows that continuous assessment for real-type final year project is appropriate and effective. This continuous assessment is usable, suitable, and practical. Thus, the continuous assessment used in real-type final year project contributes to the importance of the evaluation in vocational education.*

*Keywords: Final year project, vocational, continuous assessment, real-type project*

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## 1. Introduction

Technical and vocational education is a type of education that keeps pace with current developments. It is constantly evolving with the present state of the education field (Lat & Han, 2018; Yusof et al., 2017). The curriculum for technical and vocational education must always be relevant and in line with current changes and developments. Therefore, technical, and vocational students must always follow the latest trends and changes in education.

A final year project is a compulsory course at educational institutions, especially at the diploma level and above. Students must pass it to graduate (Ministry of Education Malaysia, 2020). The final year project is carried out by students during their final year (Ministry of Education Malaysia, 2020; Gusau & Mohamad, 2020). Students are required to use all the skills and

knowledge gained throughout their studies to produce their final year project (Alex, 2020). The project must be industry-based (MBOT, 2019). Students are also encouraged to apply appropriate and up-to-date techniques that meet industry needs. The final year project covers three elements: selection, implementation, and reporting (Siva, 2020). These elements are required throughout the duration of the project, which is two semesters or one year. Students will be supervised and assisted by project supervisors, who are typically teaching staff in the field of study (Ali & Zayid, 2020). Students will produce their final year project by referring to established guidelines to ensure the project runs smoothly (Ministry of Education Malaysia, 2020).

Final year projects in vocational education are evaluated based on established guidelines. These guidelines are intended to carry out continuous assessment based on the progress of the project. The guidelines cover the project implementation process and continuous assessment (Ministry of Education Malaysia, 2023). Continuous assessment for a real-type final year project is different from a research-based project. Therefore, the assessment must cover all aspects of the project's implementation. Furthermore, the continuous assessment managed by the chief coordinator in the vocational institution. The chief coordinator is responsible to make sure the final year project executed according to the guidelines. Figure 1 shows the role of all personnel involved in the implementation of continuous assessment.

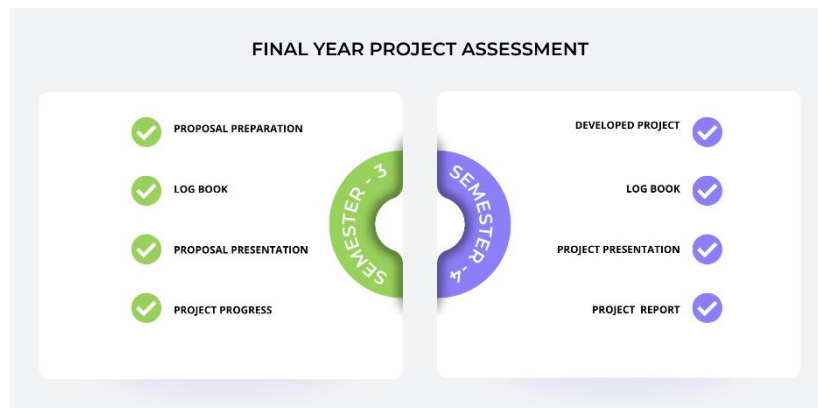
**Figure 1: Personal and role in final year project implementation**



Referring to Figure 1, the chief coordinator for the final year project selected by the institution administrator. The selection process usually based on the ability and suitability of the personnel in coordinating the task. Furthermore, coordinator for final year project will be chosen for each programme. Finally, supervisor will be nominated and selected by the programme to supervise and execute continuous assessment among students.

Continuous assessment for a real-type final year project is carried out during Semester 3 and Semester 4. Figure 2 shows the types of continuous assessment performed for both semesters.

**Figure 2: Final year project assessment**



Student achievement is assessed based on the elements shown in Figure 2. Continuous assessment for the final year project is carried out according to the academic semester during the student's final year. Each element in this continuous assessment is evaluated based on the weightage assigned in the guidelines. Therefore, students must achieve the required level to pass this course. The continuous assessment for the final year project also refers to the established constructive alignment. All these assessments cover the cognitive, psychomotor, and affective domains, in line with the intended learning outcomes. Student achievement is assessed by referring to each of the established elements, both for groups and for individuals.

## 2. Literature Review

The teaching and facilitation process is implemented in line with the transformation happening in vocational education. The teaching and learning system are guided by Outcome-Based Education (OBE), a process that involves restructuring the curriculum, assessment, and practical reporting in education. Its goal is to determine the achievement and mastery of high-level learning (Ministry of Higher Education, 2016; Rusmawati et al., 2016). Furthermore, the principle of constructive alignment is also used, which involves aligning teaching activities and learning outcomes with the assessments performed.

Continuous assessment is a formative evaluation method that is implemented on an ongoing basis in vocational education. The purpose of this assessment is to determine a student's ability, achievement, and performance. The elements of continuous assessment are embedded within outcome-based education and constructive alignment. Continuous assessment aims to measure student achievement and performance according to the learning outcomes specified in the course syllabus and content. In vocational education, continuous assessment is developed by referring to the course outline (CO). This assessment is carried out throughout the semester and covers both theoretical and practical aspects (Ministry of Education Malaysia, 2022). According to the Ministry of Education Malaysia (2022), continuous assessment must be planned, administered, evaluated, and reported. Therefore, the main document, which is the course outline, is the primary reference for developing continuous assessment. According to Rana and Zubair (2019), the syllabus is a reference for determining the continuous and final assessments to be conducted throughout the semester.

Continuous assessment is a primary requirement in the implementation of teaching and facilitation. Thus, this continuous assessment is a necessity and can be used to evaluate students. The development of continuous assessment must be adapted to the needs of the course content and the students' level. Therefore, this development is necessary to help instructors

assess students (Kumaran & Azali, 2019). According to Kumaran & Azali (2019), the development of assessment can reduce the workload of instructors and avoid issues related to the quality, reliability, and validity of assessment items.

The assessment also needs to be adapted to the students' level and mastery, fitting the course requirements. Furthermore, assessment can optimize student mastery and improve the quality of teaching. Therefore, the continuous assessment that is developed must be aligned with the course content, the students' level, and their mastery to ensure the quality of teaching. Continuous assessment should be used comprehensively and be able to evaluate students as stipulated in the course outline. Typically, the assessment covers cognitive, psychomotor, and affective aspects. According to Haziyah Hussin et al. (2021), the implementation of assessment must have a positive impact on students, especially in terms of their involvement in learning and the development of soft skills. According to Mardziah et al. (2019), assessment must have a high level of validity and reliability to be used comprehensively and accurately. This is important because a properly used assessment is beyond dispute and meets the course requirements.

Referring to the continuous assessment for the real-type final year project, the elements assessed are adapted to the established level and timeline. The assessment is also conducted every semester to ensure continuity in the teaching and learning process. The assessment process for a real-type final year project is carried out by the appointed project supervisor. In addition, the assessment process is also assisted by the appointed academic or industry advisor to ensure its consistency and validity.

### **3. Research Objectives and Research Questions**

This study aims to examine the appropriateness and effectiveness of continuous assessment in real-type final year projects. The following are the research objectives that have been determined for this study.

#### **Research Objectives**

- i. Identify the appropriateness of continuous assessment in real-type final year project.
- ii. Explore the effectiveness of continuous assessment in real-type final year project.

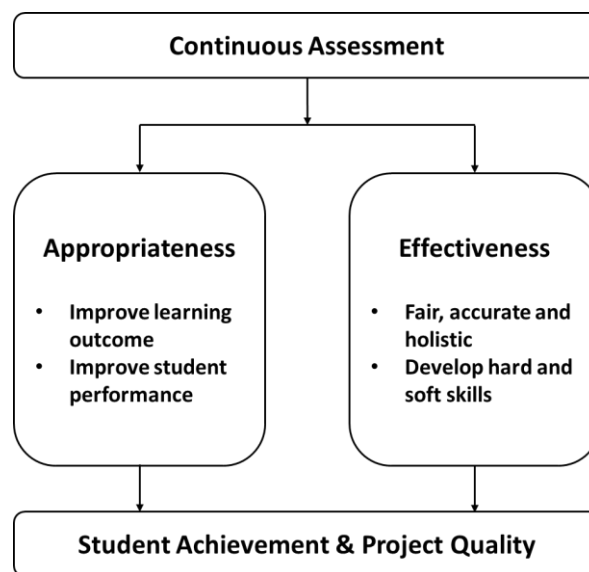
#### **Research Questions**

- i. What is the appropriateness of continuous assessment in real-type final year project?
- ii. What is the effectiveness of continuous assessment in real-type final year project?

### **4. Conceptual Framework**

The conceptual framework illustrates the appropriateness and effectiveness of continuous assessment in real-type final year project. Continuous assessment encompassing elements such as proposal, log book, project, and report. The appropriateness is determined by how well it aligns with learning outcomes and student performance. The effectiveness is measured by fairness and accuracy of the continuous assessment. Furthermore, the effectiveness also consists the development of hard skill and soft skills. Together, the dimensions of appropriateness and effectiveness demonstrate how continuous assessment contributes to improved student achievement and the production of higher-quality real-type final year projects. Figure 3 shows the conceptual framework of the research.

**Figure 3: Conceptual Framework**



## 5. Research Methodology

This study is a combination of quantitative and qualitative methods. A descriptive quantitative study was conducted using a questionnaire that was distributed to final year project supervisors. A total of 42 final year project supervisors involved in this study. Referring to the Krejcie and Morgan table, the adequate sample is 40. Thus, all the final year project supervisors are involved in this research. The questionnaire comprised questions to determine the appropriateness of continuous assessment in real-type final year project. The questionnaire was adopted from research by Asale (2017). The questionnaire evaluated and validated by two experts in the field of assessment. Qualitative research carried out via semi structured questions to five respondents. The selection of respondents for this study was reliable with the minimum requirements required in a qualitative study (Creswell & Clark, 2011). Study respondents were selected with purposive sampling technique among supervisors that were directly involved with the final year project.

Interviews were used in the study which is a method that can provide information in detail (Creswell & Clark, 2011). The interview method can also help the researcher to obtain information that is appropriate and useful for the study (Creswell & Clark, 2011). The researcher was able to gather appropriate and as much as information as possible for this study. The question instrument was designed with reference to past references and the appropriateness of this study. The questions are processed based on the problems and objectives of the study. Question processing was carried out with the advice of an identified reference expert. Study respondents were coded from 'FYPS1' to 'FYPS5' for the purpose of confidentiality ethics. All personal information of respondents is kept confidential to maintain the ethics of the study. Respondent participation was voluntary.

Interviews' data were collected and analyzed. Analysis of interview data was performed by transcribing the interviews' verbatim. Transcription is the result of an interview between the author and the respondent in the form of raw data that is recorded and then rewritten. Data is coded and categorized by data filtering. The screening of this data is based on the themes that have been set in the study. Data screening is the process of reducing the amount of data especially those that are less relevant to the objectives of the study. This process is ongoing so

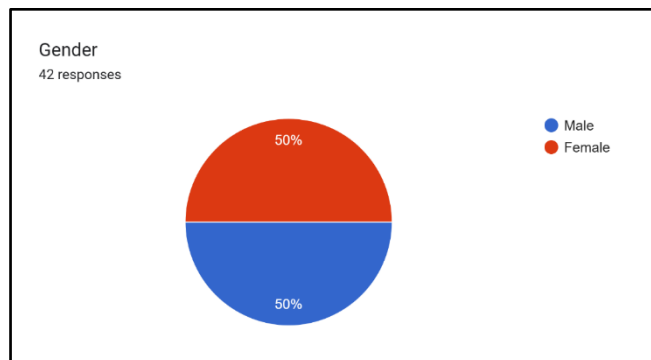


that the data are relevant and can be used in this study. Themes were analyzed separately to answer the research questions that were determined in this study.

## 6. Results

The study data was obtained by descriptive analysis to answer question 1. Meanwhile, the study data of question 2 was obtained by interviewing the lecturers who were coded from FYPS1 to FYPS5. Figure 4 shows detailed information about the demographic data.

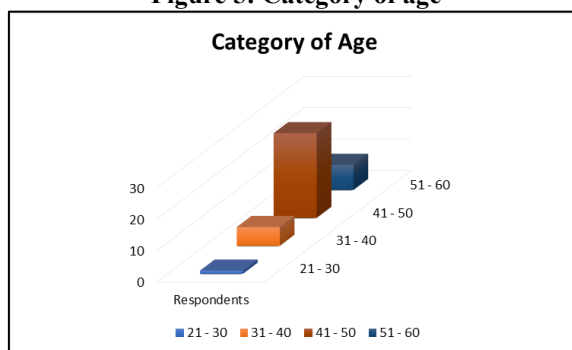
**Figure 4: Demographic data**



The demographic data shows that 21 respondents are male lecturers and another 21 respondents are female lecturers.

Figure 5 shows detailed information about the demographic data.

**Figure 5: Category of age**



The data in figure 5 shows that there is only one respondent for category of age 21 to 30. There are six respondents for category of age 31 to 40. For category of age 41 – 50 there are twenty-seven respondents and 51 – 60 are eight respondents.

### 6.1. Research Question 1

What is the appropriateness of continuous assessment in real-type final year project?

The findings of the study were from 42 respondents among vocational educators participated for quantitative studies. Figure 6 shows appropriateness of continuous assessment in real-type final year project.

**Figure 6: Appropriateness of continuous assessment in real-type final year project**

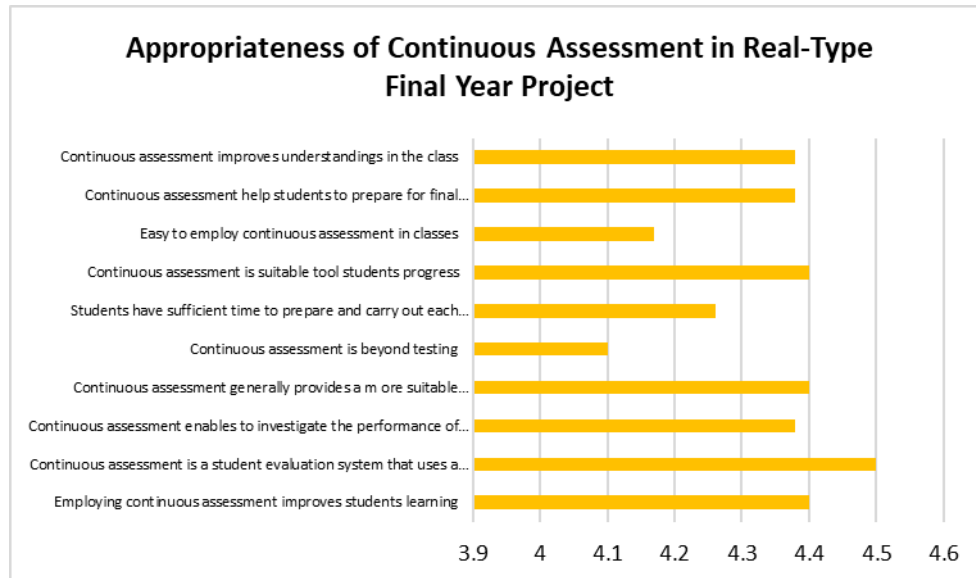


Figure 6 shows the continuous assessment are suitable in real-type final year project. The mean average for each item is above 4.0. The mean for all items is 4.34. Referring to Pallant (2011), the findings of this study are at a high level. Findings show that, the continuous assessment used in real-type final year project applicable and appropriate.

## 6.2. Research Question 2

What is the effectiveness of continuous assessment in real-type final year project?

The semi-structured interview sessions that were conducted on five respondents showed that the continuous assessment in real-type final year project are effective and suitable. Here are the findings from the semi-structured interview session.

### Question 1

How did the continuous assessment help students to develop final year project properly?

According to FYPS1

*“... from my perspective, by continuous, I can spot a student who is struggling with their project development. Allows me to follow-up with my students”.*

According to FYPS2

*“... it provides a clear picture and easy for me to identify students need. It makes the guidance much more effective”.*

According to FYPS3

*“... continuous assessment helps in engaging with students and helps them”.*

According to FYPS4

*“... student can develop project according to the time line and I able to get information accordingly”.*

According to FYPS5

*“... continuous assessment allows me to see the entire progress. It's a better way to help students”.*

### Question 2

What is your opinion on existing continuous assessment is a fair and accurate way to evaluate student's final year project?

According to FYPS1

*“... yes, it is fair and accurate. Allows me to evaluate student's entire process. It is a much more holistic evaluation of their effort and learning”.*

According to FYPS2

*“... the process is fair and able gives students' chances to perform. Must well planned”.*

According to FYPS3

*“... it depends on how we use it. The system is fair and accurate if the milestones are followed”.*

According to FYPS4

*“... continuous assessment allows to accurately grade student holistically and fairly”.*

According to FYPS5

*“... my opinion it's generally fair. But need to be careful and follow all the elements”.*

Question 3

How did the continuous assessment ease your work on supervising final year projects?

According to FYPS1

*“... it prevents problems at the end of the semester. I can fix student problems in early stage”.*

According to FYPS2

*“... i can assess students from the early stage. Reduce my workload and less stressful”.*

According to FYPS3

*“... it gives me a clear guidance for supervision, so I know exactly when to check on each student's progress.”*

According to FYPS4

*“... the regular follow-up makes it easier to communicate with students and keep them on track”.*

According to FYPS5

*“... i can ensure students are making continuous progress and not falling behind. Make my job much easier”.*

All respondents showed a positive reaction and stated that the continuous assessment in real-type final year project very effective in assessing students. The continuous assessment is suitable as a tool to supervise and follow-up students in developing real-type final year project. Thus, the findings show that the continuous assessment helps in developing real-type final year project according to the time line and submit it on time.

## **7. Discussion and Conclusion**

Final year project for real-type project has a significant standard towards the continuous assessment. Continuous assessment encourages holistic and reliable evaluation of student competencies. Furthermore, continuous assessment also adopts the culture of consistent learning. This structured approach by using continuous assessment helps students to manage their projects more effectively, develop time management, and prevent the irresistible pressure associated with the deadline. Continuous assessment allows students to recognize and fix their mistakes early that will lead to a higher quality in developing final product. This research aligns with the finding by Haziyah Hussin et al. (2021) that the continuous assessment has positive impact and helps students in executing their final year projects.

Additionally, continuous assessment able to facilitate more effective and supportive supervisory role. With systematic assessment process, the supervisor able to monitor and guide student in developing real-type final year project in vocational education. According Kumaran & Azali (2019), instructors able to help students through continuous assessment. Thus, they

can identify students who are struggling and offer targeted support, preventing minor issues from escalating into major problems. This interaction helps to develop supervisor and student relationship from the beginning of the course.

The implementation of continuous assessment for real-type final year projects represents a significant and beneficial assessment process in vocational education. It is a formative assessment that provides comprehensive, holistic, and inclusive assessing framework. Continuous assessment able to strengthens the quality of vocational education and ensuring the students ability and capability. Furthermore, students also able to develop their technical and soft skills progressively by developing real-type final year projects. These skills are assess using rubrics and follow the guides provided by stake holder. Among the skills that assess among the students are leadership, problem solving, communication, and project development. It is an approach that aligns assessment with the purpose of vocational education to produce trained, competent, and innovative graduates.

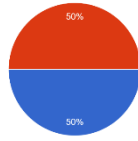
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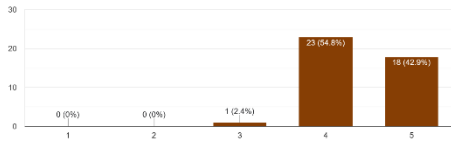
# Appendix

Gender  
42 responses

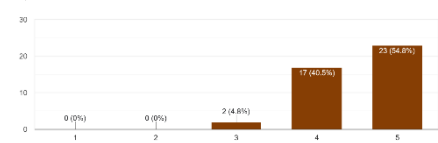


● Male  
● Female

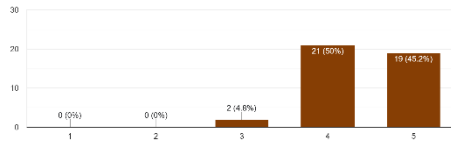
1. Employing continuous assessment improves student's learning  
42 responses



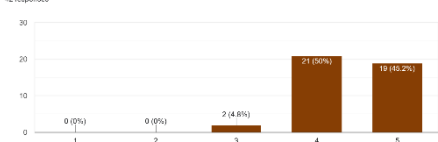
2. Continuous assessment is a student evaluation system that uses a variety of assessment techniques  
42 responses



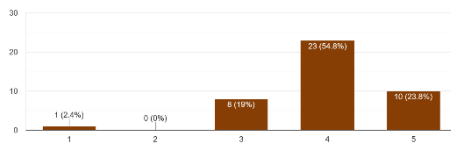
7. Continuous assessment is suitable tool students' progress  
42 responses



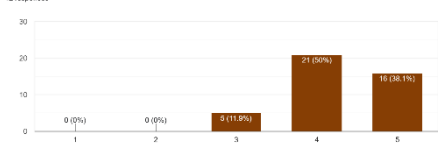
4. Continuous assessment generally provides a more suitable assessment environment for students  
42 responses



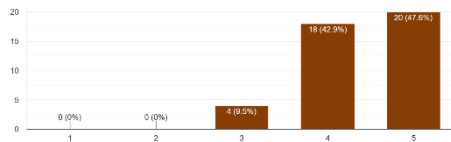
5. Continuous assessment is beyond testing  
42 responses



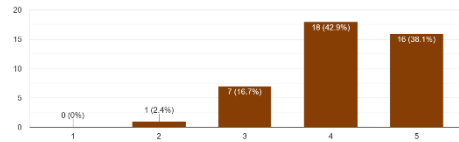
6. Students have sufficient time to prepare and carry out each element of the continuous assessment  
42 responses



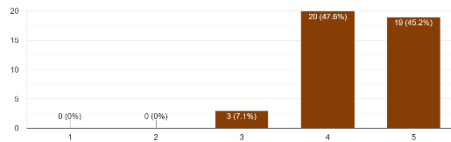
3. Continuous assessment enables to investigate the performance of the students  
42 responses



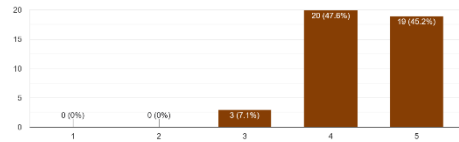
8. Easy to employ continuous assessment in classes  
42 responses



9. Continuous assessment help students to prepare for final examination  
42 responses



10. Continuous assessment improves understandings in the class  
42 responses



# PRINCIPALS' INSTRUCTIONAL LEADERSHIP AND TEACHERS' ADOPTION OF GENERATIVE AI: THE MEDIATING ROLE OF AI SELF-EFFICACY

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**Abstract:** *This article examines the instructional leadership (IL) mechanism of Generative AI (GenAI) adoption by teachers through AI self-efficacy (SE\_AI) in the context of K-12 Indonesia. Cross-cutting survey of N=240 teachers in Bogor Regency. The analysis used PLS-SEM (SmartPLS 4) with bootstrapping 5,000. The measurement quality met the criteria (loading  $\geq 0.72$ ;  $\alpha \geq 0.88$ ; CR  $\geq 0.91$ ; AVE  $\geq 0.67$ ; HTMT  $< 0.85$ ; SRMR=0.053). Control variables: working life, level, AI training, and device/internet access. Result. The IL pathway was  $\rightarrow$  SE\_AI significant ( $\beta=0.49$ ;  $p<0.001$ ) and the ADOPT SE\_AI  $\rightarrow$  significant ( $\beta=0.56$ ;  $p<0.001$ ). The IL direct pathway  $\rightarrow$  ADOPT is small/borderline ( $\beta=0.12$ ;  $p=0.061$ ). Indirect effects of IL  $\rightarrow$  SE\_AI  $\rightarrow$  ADOPT = 0.27 (95% CI [0.18; 0.37];  $p<0.001$ ), accounting for  $\approx 69\%$  of the total effect (VAF $\approx 0.69$ ).  $R^2(SE\_AI)=0.24$  and  $R^2(ADOPT)=0.41$  indicate moderate-strong explanatory power;  $Q^2=0.13-0.30$  indicates predictive relevance. Device/internet access had a small but significant effect on adoption ( $\beta=0.11$ ;  $p=0.023$ ). Conclusion. Instructional leadership works primarily through strengthening the self-efficacy of teachers' AI, not through direct instruction. Task-based instructional coaching, practice modeling, feedback on artifacts, and AI ethics guidelines are key strategies to accelerate the safe and meaningful adoption of GenAI in schools. Originality/Value. This study refines the IL mechanism  $\rightarrow$  SE\_AI  $\rightarrow$  GenAI Adoption with domain-specific AI self-efficacy measurements in the Indonesian K-12 context, while offering an operational intervention map for schools.*

Keywords: *instructional leadership; AI self-efficacy; generative AI; Technology Adoption*

## 1. Introduction

The emergence of Generative AI (GenAI) has changed the way teachers plan, implement, and evaluate learning, but at the same time raises ethics, privacy, and quality issues of output that demand governance at the school level (UNESCO, 2023; Kasneci et al., 2023; OECD, 2023; Zawacki-Richter et al., 2019). The literature emphasizes that the impact of GenAI is highly dependent on human capacity—literacy of output evaluation, pedagogical meaning, and institutional supervision—not just the availability of technology (Luckin, 2018; Holmes et al., 2019; Fullan, 2021).

In the K-12 ecosystem, instructional leadership—setting curriculum direction, coaching, ensuring resources, and monitoring the learning process—has been shown to be positively related to teaching quality and learning outcomes, and is closer to the core of the learning process than other forms of leadership (Hallinger, 2011; Robinson et al., 2008; Leithwood et al., 2020). In the context of technology, the digital-instructional leadership variant encourages

pedagogical experimentation, directed feedback, and the formation of meaningful technology use norms (Harris, 2014; Dexter, 2018). Principals' decisions, communication, and example shape collective expectations that influence teachers' willingness to adopt innovations such as GenAI (Spillane, 2006; Day et al., 2016).

Changes in teacher behavior usually flow through psychological mechanisms, especially self-efficacy—belief in one's ability to complete specific tasks (Bandura, 1997; Tschannen-Moran & Hoy, 2001). Cross-study evidence shows that school leadership influences teachers' instructional innovation indirectly through strengthening self-efficacy (Goddard et al., 2000; Leithwood & Jantzi, 2008; Donohoo, 2017). In the realm of technology, technology-related self-efficacy consistently predicts the intention and behavior of ICT use (Compeau & Higgins, 1995; Venkatesh et al., 2003; Teo, 2009). Applied to GenAI, AI's self-efficacy—the confidence to write effective prompts, assess the quality of outputs, and mitigate bias/hallucinations—is thought to be a psychological prerequisite for responsible adoption of GenAI in the classroom (Kasneci et al., 2023; Dwivedi et al., 2023).

Close support of the principal through pedagogical direction, training, and feedback has also been shown to strengthen professional learning communities and a culture of sharing, which in turn increases teachers' competency confidence in new practices (Louis et al., 2010; Bryk & Schneider, 2002; Hargreaves & Fullan, 2012). Teachers who feel technically and pedagogically capable tend to integrate technology into planning, task differentiation, and feedback, rather than just superficial use (Ertmer & Ottenbreit-Leftwich, 2010; Dexter, 2018; Ifenthaler & Yau, 2020).

However, there are research gaps: (i) K-12 studies on GenAI are still dominated by ethical/policy aspects, while quantitative models linking instructional leadership, AI self-efficacy, and GenAI adoption at the teacher level are still limited; (ii) many findings come from abroad, while the Indonesian context—including areas with diverse resources such as Bogor Regency—is underrepresented; and (iii) specific GenAI adoption indicators (learning planning, differentiation, feedback) have not been systematically measured (Holmes et al., 2019; Zawacki-Richter et al., 2019; Harris, 2014; Duncan, et al., 2016; Ifenthaler & Yau, 2020; Kasneci et al., 2023).

Departing from this foundation, this article aims to: (1) examine the influence of instructional leadership of school principals on the self-efficacy of teachers' AI; (2) examine the effect of AI self-efficacy on GenAI adoption; (3) test the total influence of instructional leadership on GenAI adoption; and (4) to test the mediating role of AI self-efficacy in the relationship between instructional leadership and GenAI adoption among teachers in Bogor Regency (Hallinger, 2011; Bandura, 1997; Venkatesh et al., 2003; Leithwood et al., 2020; Kasneci et al., 2023).

## **2. Literature Review**

Instructional Leadership (IL) and changes in teacher practice. Instructional leadership is understood as a set of principal's practices that focus directly on the teaching-learning process: setting curriculum direction, coaching, managing resources, and monitoring learning (Hallinger, 2011; Robinson et al., 2008). Synthesis evidence shows that IL is positively associated with teaching quality and learning outcomes, and tends to have a closer path of influence on the learning process than other leadership styles (Robinson et al., 2008; Leithwood et al., 2020). In the context of modern schools that are full of technology, IL also functions as



a lever to change teachers' work culture through the setting of instructional expectations, exemplary, and strengthening professional norms (Spillane, 2006; Day et al., 2016).

In the domain of educational technology, the digital-instructional leadership variant emphasizes the orchestration of learning that utilizes ICT, including the facilitation of pedagogical experimentation and the provision of evidence-based feedback (Harris, 2014; Dexter, 2018). Implicitly, IL not only encourages superficial use of technology, but directs it toward meaningful integration into planning, differentiation, and assessment.

Generative AI (GenAI) in K-12 education.

GenAI offers opportunities to accelerate learning design, personalization, and automated feedback, while presenting issues of ethics, privacy, and quality of output (UNESCO, 2023; OECD, 2023; Kasneci et al., 2023). Preliminary studies emphasize that the positive impact of GenAI is highly dependent on human competence to formulate prompts, evaluate outputs, and mitigate bias/hallucinations (Luckin, 2018; Holmes et al., 2019; Kasneci et al., 2023). In schools, leadership is the determinant of whether GenAI translates into safe and effective classroom practices—not just policy discourse (Fullan, 2021).

Self-efficacy as a key psychological mechanism

Based on Social Cognitive Theory, self-efficacy is an individual's belief in his or her ability to complete specific tasks; This construct affects choice, effort, perseverance, and performance (Bandura, 1997). In the context of teaching, teacher self-efficacy correlates with richer instructional strategies and better learning outcomes (Tschannen-Moran & Hoy, 2001). A number of studies show that school leadership influences teacher practice indirectly through increased self-efficacy (Goddard et al., 2000; Leithwood & Jantzi, 2008; Donohoo, 2017). In the realm of technology, technology-related self-efficacy consistently predicts the intentions and behaviors of ICT use (Compeau & Higgins, 1995; Venkatesh et al., 2003; Teo, 2009). By analogy to GenAI, AI's self-efficacy—the ability to write effective prompts, evaluate outputs, and manage risk bias—is seen as a psychological prerequisite for responsible GenAI adoption (Kasneci et al., 2023; Dwivedi et al., 2023).

IL Pathway → Teacher self-efficacy

IL influences teachers' competency beliefs through several channels: (a) mastery experience as a result of coaching and structured feedback; (b) vicarious experience when principals and peers model practice; and (c) social persuasion through expectations and institutional support (Bandura, 1997; Hallinger, 2011; Robinson et al., 2008). In the context of technology, the support of school principals—targeted training, access to resources, and constructive monitoring—is related to improving the self-efficacy of ICT/edtech teachers (Ertmer & Ottenbreit-Leftwich, 2010; Dexter, 2018). Therefore, it is logical to expect IL to increase the self-efficacy of AI specifically.

AI Self-Efficacy → GenAI Adoption

Research on the adoption of educational technology shows that self-efficacy lowers perceptual barriers, encourages feature exploration, and strengthens persistence in the face of adversity, thereby increasing intention/behavior of use (Compeau & Higgins, 1995; Teo, 2009). In the context of GenAI, teachers with higher self-efficacy tend to integrate GenAI in learning planning, task differentiation, and feedback, while maintaining academic integrity (Kasneci et al., 2023; Ifenthaler & Yau, 2020). This mechanism is in line with the framework of technology acceptance that places the ability factor/perception of control as a key driver of use (Venkatesh et al., 2003).

### IL → GenAI Adoption: direct and indirect effects

Conceptually, IL is expected to influence the adoption of GenAI through two paths: directly, through school prioritization, task policies, and performance expectations; and indirectly, through strengthening the self-efficacy of AI teachers (Hallinger, 2011; Duncan, et al., 2016; Fullan, 2021). Traditions of leadership research show a similar pattern in other instructional innovations: the principal's influence often flows through psychosocial mediators/teacher capacity (Goddard et al., 2000; Leithwood & Jantzi, 2008; Donohoo, 2017). Thus, a pure mediation model that places AI self-efficacy as the primary intermediary between IL and GenAI adoption obtains both theoretical and empirical justification.

### The role of professional learning communities (context reinforcement)

Effective IL practice usually goes hand in hand with the formation of professional learning communities (PLCs)—collaborative structures that expand peer learning, reflection, and practice sharing (Louis et al., 2010; Hargreaves & Fullan, 2012). PLC enriches the mastery/vicarious experience of teachers and in turn strengthens self-efficacy towards new practices, including technology (Bryk & Schneider, 2002; Ertmer & Ottenbreit-Leftwich, 2010). Although not modeled as a formal mediator/moderator in this study, the evidence confirms the ecosystem context that supports the development of AI self-efficacy.

## Research gap and context of Bogor Regency

GenAI K-12 literature is still dominated by normative-ethical discussions and conceptual studies, while quantitative evidence explicitly modeling IL → AI self-efficacy → GenAI adoption is still limited, especially in the Indonesian context (Holmes et al., 2019; Zawacki-Richter et al., 2019; Kasneci et al., 2023). Bogor Regency—with its diversity of school resources and large ecosystem scale—is a strategic context to test this model to produce operational governance and professional development recommendations (Fullan, 2021; OECD, 2023).

## Hypothesis development

Based on the theoretical arguments and empirical evidence above, the research hypothesis is formulated as follows:

H1. Instructional leadership has a positive effect on the self-efficacy of AI teachers (Hallinger, 2011; Robinson et al., 2008; Ertmer & Ottenbreit-Leftwich, 2010).

H2. AI self-efficacy has a positive effect on the adoption of GenAI by teachers (Compeau & Higgins, 1995; Venkatesh et al., 2003; Kasneci et al., 2023).

H3. Instructional leadership has a positive effect on GenAI adoption (total effect) (Leithwood et al., 2020; Duncan, et al., 2016; Fullan, 2021).

H4. AI self-efficacy mediates the influence of instructional leadership on GenAI adoption (Goddard et al., 2000; Leithwood & Jantzi, 2008; Donohoo, 2017).

## Research Methodology

### Research Design

The study used a cross-cutting quantitative survey to test a pure mediation model: *instructional leadership* (X) → AI (M) self-efficacy → GenAI (Y) adoption. This approach is suitable for testing latent relationships between constructs as well as indirect effects through

modeling of structural equations (Kline, 2016; Hair et al., 2019). For predictive orientation and tolerance to non-normal data, the primary analysis uses PLS-SEM; The results of the benefits of complementary models with CB-SEM are reported to be optional (Hair et al., 2019; Henseler et al., 2015).

### Location, Population, and Sample

The research location is in Bogor Regency (West Java). The population is active teachers in elementary, junior high, and high school/vocational education units. The total sample was determined to be  $N = 240$  teachers through clustered stratified sampling: level-1 selected schools (strata, level and region), level-2 randomly selected teachers proportionally in each school (Creswell, 2014). Practical composition:  $\pm 12$  schools  $\times$   $\sim 20$  teachers per school (or equivalent). Inclusion criteria: (a) have taught at least one year at a current school; (b) have used or considered the use of GenAI in learning. This size is adequate for simple models (maximum of two predictors per endogenous) and above the recommended *10-times rule* and meets the test power for small–medium effects (Cohen, 1988; Hair et al., 2019).

### Variables and Operationalization

X: Instructional Leadership (IL) is the practice of principals related to curriculum direction, *coaching*, resource management, and instructional monitoring (Hallinger, 2011; Robinson et al., 2008). Example indicators (4–5 items): AI integration directive; *coaching* the use of AI; feedback on AI-based lesson plans/assessments; provision of training/resources; exemplary practice.

M: AI Self-Efficacy (SE-AI) — teachers' confidence in writing *prompts* effectively, evaluating the quality of outputs, and mitigating bias/hallucinations (Bandura, 1997; Kasneci et al., 2023; Dwivedi et al., 2023). Example indicators (4–5 items): writing *prompts*; evaluation of relevance/accuracy; mitigation of bias/hallucination; integration into the lesson plan; providing ethical guidance to students.

Y: GenAI Adoption (ADOPT) — frequency/variation of GenAI use for planning, differentiation, feedback, and material development, as well as the intention of continuous use (Venkatesh et al., 2003; Ifenthaler & Yau, 2020). Example indicators (4–5 items): use for lesson plans; differentiation of tasks; feedback/rubrics; development of materials/questions; sustainability intentions.

Control variables (optional): teaching experience (years), level, previous AI training (0/1), device/internet access (scale 1–7) (Teo, 2009).

All constructs are treated reflexively (Bandura, 1997; Hair et al., 2019).

### Instruments, Scale, and Content Validation

The instrument was compiled based on IL literature and self-efficacy/technology, then adapted contextually to GenAI (Hallinger, 2011; Robinson et al., 2008; Compeau & Higgins, 1995; Venkatesh et al., 2003; Kasneci et al., 2023). Likert scale 1–7 (1 = strongly disagree to 7 = strongly agree). Development process: (i) *expert review* by three education/edtech management experts for content validity; (ii) testing on 30 teachers (outside the sample) for item clarity; (iii) translation-reversal of translations if there are English items (Beaton et al., 2000).

### Data Collection Procedure

Permits are obtained from relevant agencies/agencies and school leaders. Respondents fill out an online/offline questionnaire for 10–15 minutes. Voluntary, anonymous, non-academic

participation. For the mitigation of *common method bias* (CMB): (a) *psychological separation* between construct blocks; (b) emphasis on anonymity; (c) *counterbalancing* the order of items; (d) instructions to avoid desirable social responses (Podsakoff et al., 2003).

#### Data Processing and Quality Testing

Preprocessing: *missing values* check ( $\leq 5\%$  are handled with *expectation-maximization* or *mean substitution*), *straightlining detection*, and multivariate outliers (Mahalanobis) (Kline, 2016).  
Measurement model (PLS-SEM):

Internal reliability: Cronbach's  $\alpha$  and Composite Reliability (CR)  $\geq 0.70$  (Hair et al., 2019).

Convergent validity: *outer loading*  $\geq 0.70$ ; AVE  $\geq 0.50$  (Hair et al., 2019).

Discriminant validity: HTMT  $< 0.85$ ; the HTMT confidence interval does not exceed 1.00 (Henseler et al., 2015).

Collinearity: VIF  $< 3.3$  for indicators and constructs (Kock, 2015). Additional CMB assays: *Harman's single-factor* ( $< 50\%$  variance) and *optional variable markers* (Podsakoff et al., 2003).

#### Structural Analysis and Mediation Test

The structural model estimates the  $X \rightarrow M$ ,  $M \rightarrow Y$ , and  $X \rightarrow Y$  (total) paths. Significance was tested by bootstrapping 5,000 replications (bias-corrected 95% CI). The effect of mediation was evaluated through indirect effect ( $X \rightarrow M \rightarrow Y$ ) and VAF for the proportion of mediation (Preacher & Hayes, 2008; Hair et al., 2019). Model feasibility was reported via  $R^2$  (M, Y),  $Q^2$  (*blindfolding*),  $f^2$  (effect size), and SRMR of the PLS model (Henseler et al., 2015). Analysis using SmartPLS 4; complementary tests (CB-SEM index fit) can be presented concisely (Kline, 2016).

#### Research Ethics

The research adheres to ethical principles: conscious consent, confidentiality, the right to withdraw at any time, and the use of data for scientific purposes only. There is no physical/psychological risk that exceeds routine learning activities (Bryman, 2016).

Hypothesis Summary (for analysis reference)

H1:  $IT \rightarrow SE-AI$  (positive) (Hallinger, 2011; Robinson dkk., 2008).

H2:  $SE-AI \rightarrow GenAI$  Adoption (positive) (Compeau & Higgins, 1995; Venkatesh et al., 2003; Kasneci et al., 2023).

H3:  $IL \rightarrow GenAI$  Adoption (positive total effect) (Leithwood et al., 2020; Day et al., 2016).

H4: SE-AI mediates the relationship between  $IL \rightarrow GenAI$  Adoption (Goddard et al., 2000; Leithwood & Jantzi, 2008; Donohoo, 2017).

#### Findings

##### Respondent Characteristics

A total of 240 teachers from  $\geq 12$  schools in Bogor Regency participated. Level composition: Elementary 38%, junior high 34%, high school/vocational school 28%. The average working period is 10.4 years ( $SD = 7.1$ ). Respondents who have participated in AI/GenAI training 42%; device/internet access score (1–7) average 5.3 ( $SD = 1.2$ ).

Test Measurement Model (Reflective)

All indicators meet loading and reliability criteria. Convergent validity met (all loads  $\geq 0.72$ ; AVE  $\geq 0.67$ ), good internal reliability ( $\alpha \geq 0.88$ ; CR  $\geq 0.91$ ), and confirmed discriminant validity (HTMT  $< 0.85$ ). Low collinearity (VIF  $< 1.40$ ). SRMR (PLS) = 0.053, indicating *an adequate approximate fit*. Common method check: a single factor Harman explains  $< 38\%$  variance  $\rightarrow$  indication of controlled CMV.

Table 1. Convergent Reliability & Validity

Construct	A	CR	AVE	Loading Range
Instructional Leadership (IL)	0,88	0,91	0,67	0,74 – 0,88
AI Self-Efficacy (SE_AI)	0,89	0,92	0,70	0,72 – 0,89
GenAI Adoption (ADOPT)	0,90	0,93	0,72	0,73 – 0,90

Discriminant validity (HTMT): IL–SE\_AI = 0.68; IL–ADOPT = 0.62; SE\_AI–ADOPT = 0.74 ( $< 0.85$  in total).

#### Structural Model Test & Mediation

Tested model: IL  $\rightarrow$  SE\_AI  $\rightarrow$  ADOPT (pure mediation; direct line IL $\rightarrow$ ADOPT is estimated for total effect).

Table 2. Path & Bootstrap Coefficients (5,000 replications)

Jalur	B	t	95% CI	p
THE $\rightarrow$ SE_AI	0,49	9,32	[0,38; 0,60]	$< 0.001$
SE_AI $\rightarrow$ ADOPT	0,56	10,41	[0,44; 0,66]	$< 0.001$
IL $\rightarrow$ ADOPT (live)	0,12	1,87	[-0,01; 0,24]	0,061

Indirect effect (mediation): IL  $\rightarrow$  SE\_AI  $\rightarrow$  ADOPT = 0.27; 95% CI [0.18; 0.37];  $p < 0.001 \rightarrow$  significant mediation. Total IL effect  $\rightarrow$  ADOPT: 0.39; 95% CI [0.28; 0.50]. VAF =  $0.27 / 0.39 = 0.69 \rightarrow$  large mediation ( $\approx 69\%$  of the influence of IL to ADOPT flowed through the SE\_AI).

#### Power of explanation & prediction:

$R^2(\text{SE\_AI}) = 0,24$  (IL menjelaskan 24% varians efikasi diri AI).

$R^2(\text{ADOPT}) = 0,41$ .

$Q^2(\text{SE\_AI}) = 0.13$ ;  $Q^2(\text{ADOPT}) = 0.30 \rightarrow$  adequate predictive relevance.

Effect size ( $f^2$ ): IL $\rightarrow$ SE\_AI = 0.32 (medium); SE\_AI $\rightarrow$ ADOPT = 0.44 (large);

IL $\rightarrow$ ADOPT (direct) = 0.04 (small).

#### Additional Analysis (Control Variables)

When device\_access (1–7), exp\_years, level, and ai\_training (0/1) are entered:

device\_access  $\rightarrow$  ADOPT was small but significant ( $\beta = 0.11$ ,  $p = 0.023$ );

exp\_years, level, and ai\_training were insignificant ( $p > 0.10$ ). The main findings were stable with controls.

#### Summary of Key Findings

H1 supported: Instructional leadership improves the self-efficacy of AI teachers.

H2 supported: AI self-efficacy is boosting GenAI adoption.

Supported H3 (total effect): Instructional leadership had a positive effect on GenAI adoption; small direct path/*borderline*.

H4 supported: There is significant mediation;  $\sim 69\%$  of IL  $\rightarrow$  ADOPT influence occurs through SE\_AI.

## Discussion

The model shows that the influence of instructional leadership (IL) on teachers' GenAI adoption mainly flows through AI self-efficacy (SE\_AI). The IL pathway  $\rightarrow$  SE\_AI ( $\beta=0.49$ ) and SE\_AI  $\rightarrow$  ADOPT ( $\beta=0.56$ ) were significant, while the direct IL pathway  $\rightarrow$  ADOPT was small/*borderline* ( $\beta=0.12$ ). Indirect effects of 0.27 accounted for  $\approx 69\%$  of the total effect (VAF  $\approx 0.69$ ). Substantively, this means that school principals "encourage" GenAI adoption behavior by first fostering a sense of AI competence in teachers, rather than relying solely on instruction or policy (Hallinger, 2011; Robinson et al., 2008; Bandura, 1997).

The findings are in line with Social Cognitive Theory: self-efficacy influences individual choices, effort, and perseverance (Bandura, 1997; Tschannen-Moran & Hoy, 2001). In the domain of technology, self-efficacy has been shown to predict the intention/behavior of ICT use (Compeau & Higgins, 1995; Venkatesh et al., 2003; Teo, 2009). In the context of GenAI, specific self-efficacy—the ability to make effective prompts, evaluate outputs, and mitigate biases/hallucinations—becomes a "behavior changer" that converts leadership support into classroom practice (Kasneci et al., 2023; Dwivedi et al., 2023). This pattern explains why  $R^2(\text{ADOPT}) = 0.41$  can be achieved with a compact model: SE\_AI plays a central role as a psychological mechanism that drives behavior.

Strong IL indicator content in coaching and feedback-monitoring (e.g. IL2–IL3) shows that the most effective IL practices are those that directly touch instructional work—directing curriculum, training, modeling, and providing feedback on tangible artifacts (lesson plans, rubrics, sample *prompt–output*). The working mechanism is in line with the channels of mastery experience, vicarious experience, and social persuasion (Bandura, 1997; Hallinger, 2011; Robinson et al., 2008). So it is natural that the direct path of IL  $\rightarrow$  ADOPT shrinks after SE\_AI enter: the power of IL is indeed channeled through increasing teacher competence/confidence (Ertmer & Ottenbreit-Leftwich, 2010; Dexter, 2018; Day et al., 2016).

Additional analysis showed a small but significant ADOPT device\_access  $\rightarrow$  ( $\beta=0.11$ ). This is consistent with the finding that the perception of control/availability of resources influences the use of technology (Teo, 2009; Venkatesh et al., 2003). This means that high SE\_AI needs to be "supported" by minimum infrastructure in order to be converted into sustainable practices. In the heterogeneous context of Bogor Regency, a multi-layered strategy—strengthening SE\_AI as well as structuring minimal access—will be more effective than a single intervention (Fullan, 2021; OECD, 2023).

First, this study purifies the mechanism of IL in the AI era by placing AI self-efficacy (not general ICT efficacy) as the main mediator—filling the gap in K-12 research that has been more normative/conceptual (Holmes et al., 2019; Zawacki-Richter et al., 2019; Kasneci et al., 2023). Second, domain-specific (SE\_AI) measurements enrich the literature on technology acceptance that emphasizes the role of perceived control/capability (Venkatesh et al., 2003). Third, methodologically, PLS-SEM with bootstrapping and reporting of  $R^2$ ,  $Q^2$ ,  $f^2$ , SRMR strengthens transparency and *predictive orientation* analysis (Hair et al., 2019; Henseler et al., 2015).

## Practical implications for schools

Task-based micro-coaching (60–90 minutes): a short cycle that practices prompting, output evaluation, and bias/hallucination mitigation, accompanied by concrete feedback on the teacher's artifacts (lesson plans/rubrics).

Modeling & *peer review*: principals/vice principals model the use of GenAI in teaching tools; Monthly PLCs for *peer review prompt–output* expand *mastery* and *vicarious experience* (Louis et al., 2010; Hargreaves & Fullan, 2012).

Policies that facilitate: a brief guide to AI ethics (statements of AI use on tasks, *do–don'ts*), allocation of collaboration time, and adequate access to tools—so that SE\_AI lead to behavior (Fullan, 2021; Kasneci et al., 2023).

## Limitations and advanced research agenda

First, the cross-sectional design limits causal inference; two-wave panel (T1:IL; T2: SE\_AI–ADOPT) will strengthen the causal direction (Kline, 2016). Second, self-reports are prone to bias; going forward, add behavioral evidence (RPP artifacts, platform logs) and marker variables for robust CMB checks (Podsakoff et al., 2003). Third, generalizations are still specific to Bogor Regency; multilevel studies across schools/regions will separate individual and organizational variants (Leithwood et al., 2020).

Overall, the results confirm that the key to GenAI adoption lies in the self-efficacy of teacher AI grown by real instructional leadership—coaching, modeling, feedback, and resource support. By targeting SE\_AI as a proximal target of intervention, schools in Bogor Regency can accelerate the transformation of GenAI-based learning that is safe, ethical, and meaningful (Hallinger, 2011; Fullan, 2021; Kasneci et al., 2023).

## Conclusion

This study shows that the influence of instructional leadership (IL) on teachers' GenAI adoption mainly flows through AI self-efficacy (SE\_AI). The IL line  $\rightarrow$  SE\_AI and SE\_AI  $\rightarrow$  ADOPT are significant, while the IL direct line  $\rightarrow$  ADOPT are small/borderline. Indirect effects of 0.27 accounted for  $\approx 69\%$  of the total effect ( $VAF \approx 0.69$ ), indicating that the sense of AI capability is the psychological axis that converts leadership support into GenAI use behavior in the classroom.

Theoretically, the findings refine the IL mechanism in the AI era by placing SE\_AI (domain-specific) as the primary mediator and providing support for the self-efficacy framework as well as the instructional leadership literature. Sufficient explanatory power of the model ( $R^2(SE\_AI)=0.24$ ;  $R^2(ADOPT)=0.41$ ) with predictive relevance ( $Q^2=0.13–0.30$ ).

Practically, the priority of the intervention is IL in the form of task-based coaching, practice modeling, and feedback on learning artifacts (lesson plans, rubrics, prompts–outputs), accompanied by AI ethical guidelines and the provision of minimum access; this ensures SE\_AI is converted into continuous GenAI adoption. The device/internet access variable has a small but significant effect, so that infrastructure policies remain relevant as a prerequisite for implementation.

Limitations include cross-section design and single-source self-report. Further research is recommended using a two-wave/longitudinal design, behavioural/artifact data (outside of self-

report), multilevel inter-school analysis, and moderated mediation tests (e.g. access, level, working period with principal).

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# DEVELOPING TOMORROW'S EDUCATIONAL LEADERS: A VALUES-BASED APPROACH TO BRIDGING THE TALENT GAP

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**Abstract:** *This study explores effective strategies and challenges in developing future educational leaders through a values-based approach to address the critical leadership talent within public and private sectors. Developing quality leadership talent is a critical element in ensuring the survival and success of organizations. However, there are significant gaps in the leadership development process that affect the effectiveness and competitiveness of future leaders. This study aims to identify these gaps and the factors that contribute to the challenges in leadership talent development, with a focus on talent management, key skill sets, and work values that influence leadership talent development. The three main objectives of the study are: i) to improve understanding of corporate culture; ii) to develop future leadership talent; and iii) to strengthen work ethics standards. Drawing on qualitative data through detailed observations and semi-structured interviews with management professionals in Malaysia and the United Kingdom, the findings reveal major barriers to leadership development including skill shortages, differences in organizational culture, and resource constraints. The study also emphasized the importance of strategic talent management, continuous learning, and cross-sector collaboration as measures to strengthen leadership development. These insights support education leadership stakeholders in strategically bridging talent gaps, thereby optimizing organizational performance and fostering sustainable leadership excellence in increasingly complex, evolving educational environments. Overall, the results of this study can serve as a guide in designing more inclusive, effective, relevant, and competitive leadership development programs to ensure sustainable and high-impact leadership talent development.*

**Keywords:** *Leadership Development; Values-Based Leadership; Talent Management; Leadership Challenges; Sustainable Leadership*

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## **Introduction**

The future of educational leadership is shaped by profound challenges arising from an evolving educational landscape, rapid technological advancements, shifting societal expectations, and increasingly complex policy frameworks. Successfully navigating this intricate environment demands leaders who not only possess essential skills and competencies but are also deeply rooted in strong ethical and professional values. These values-driven leaders are critical agents in driving meaningful educational transformation and ensuring the long-term sustainability of institutions. However, a significant leadership talent gap persists, reflecting a disconnect between the competencies currently available and those required to meet future demands.

“The pessimist complains about the wind; the optimist expects it to change; the leader adjusts the sails.”

(John Maxwell, 2011)

It is important to note that those in leadership roles should take responsibility in response to challenges and opportunities. Leaders should also be proactive and adaptable, especially to current challenges in management. The metaphor above emphasizes the need for educational

leaders to be adaptable, proactive, and firmly guided by core values such as integrity, inclusivity, accountability, and empathy. Embedding these principles fosters trust, cultivates collaborative cultures, and enhances workforce morale which is the key ingredients for effective leadership in complex and uncertain contexts. Rather than succumbing to negativity or passivity, effective leaders assess their environment and make necessary adjustments to steer toward their goals. Overall, this quote serves as a reminder that while we cannot control external factors (like the wind), we have the power to influence our responses and actions in the face of adversity. This requires foresight, strategic thinking, and a willingness to embrace change.

This study investigates how adopting a values-based leadership approach, reinforced through cross-sector learning and targeted development initiatives, can strategically close the leadership talent gap by cultivating ethical, resilient, and visionary leaders prepared to meet the educational challenges of tomorrow.

## **Literature Review**

### **Educational Leadership and Talent Gap in Malaysia**

Research on educational leadership in Malaysia highlights the evolving demands placed on school leaders amid rapid educational reforms and shifting societal expectations. The Malaysia Education Blueprint (2013–2025) emphasizes the critical role of principals as instructional and strategic leaders tasked with driving school excellence and innovation. Yet, the persistent talent gap in educational leadership presents challenges to fully realizing these goals. A leadership talent gap has been widely acknowledged as a pressing issue, where current leaders lack critical skills needed to meet emerging challenges. The leadership talent gap is characterized by a mismatch between current leadership competencies and those demanded by the complex and fast-changing educational environment (Flemming, 2016; Exec Capital, 2024). Educational leaders frequently encounter challenges unique to the public sector, including bureaucratic constraints, fixed career pathways, and public accountability, which limit leadership agility (Flemming, 2016).

Kunalan et al. (2021) explored educational strategic leadership practices (ESLP) among leaders in Malaysian “risky schools,” emphasizing the need for context-specific leadership models to navigate academic and moral challenges unique to these institutions. The study identified nine core dimensions of effective strategic leadership that school leaders must embody, suggesting the importance of leadership development tailored to the complex Malaysian schooling environment. The research underscores a leadership talent gap, particularly in schools needing significant turnaround efforts, highlighting an urgent need for targeted leadership training and development programs to fill this void.

Studies on instructional leadership within Malaysian schools reveal a strong link between leadership competencies and teacher effectiveness. Research shows that principals' instructional leadership practices positively influence teachers' functional competencies, which are central to school success. However, this relationship also points to a leadership capability gap, where not all leaders possess the comprehensive skills required to sustain high teaching and learning standards, especially in challenging school contexts. This gap underscores the necessity for ongoing professional development for educational leaders to align leadership practices with the evolving demands outlined in national education policies.

A systematic literature review by Jaafar et al. (2022) indicates that while strategic leadership practices among Malaysian school leaders are generally reported at a high level, the academic performance outcomes suggest unresolved challenges. These include the underperformance of students in national and international assessments, which calls into question the depth and impact of current leadership practices. The review recommends more focused research on the quality and efficacy of strategic leadership to uncover precise talent gaps and their effects on educational outcomes. It also highlights the need for leadership practices to adapt continually to meet both policy expectations and on-the-ground educational realities. Moreover, a broader systematic review of educational leadership research in Malaysia describes the field as emerging but still immature, with gaps relating to leadership development frameworks tailored specifically to Malaysian cultural and institutional contexts. This suggests a need for scholarship and policy to address leadership talent shortfalls through context-sensitive approaches that integrate ethical values, cultural awareness, and adaptive leadership competencies to meet future educational challenges.

Collectively, Malaysia faces a critical leadership talent gap impacting the country's educational transformation. The talent gap is characterized by insufficient strategic, instructional, and adaptive leadership capacities, especially in underperforming or “risky” schools. Bridging this gap requires a multilayered approach encompassing:

- Development of contextualized leadership models;
- Enhanced leadership training and professional development;
- Greater emphasis on ethical, inclusive, and values-driven leadership; and
- Alignment of leadership practices with national education reforms.

This research landscape suggests that addressing the leadership talent gap is not only about building skills but also about cultivating holistic competencies, attitudes, and values tailored to Malaysia’s unique educational needs. Hence, there is a need to adopt a values-based approach to bridge such gaps. A values-based leadership emphasizes integrity, accountability, and inclusiveness as foundational to effective leadership (Maxwell, 2011; TechTarget, 2024). Research shows that leaders grounded in core ethical values foster trust, enhance organizational culture, and drive sustainable success, critical for sustaining educational reform (Chief Talent Officer, 2023).

This study which involves the best practices in the private sectors in comparison with the public sectors hope to provide some insights into talent development. Corporate sectors like BP Malaysia demonstrate structured talent management approaches combining performance management, mentoring, and succession planning, aiming at strategic agility and innovation (BP Malaysia, 2024). Public educational systems can leverage such frameworks while reinforcing values related to social responsibility and community engagement (Learning Curve Group, 2024).

### **Research Methodology**

A qualitative case study approach was adopted, drawing upon a two-week attachment each at BP Malaysia and Learning Curve Group (LCG) in the UK. Data collection consisted of interviews, direct observations, and review of internal documentation focusing on leadership talent management, skill development, and values integration. These organizations’ leadership development frameworks were analysed to extract transferable best practices. This cross-sector examination facilitated an understanding of how values-based leadership can bridge talent gaps in the education sector, with a focus on future skills, values and ethics in workplace culture.

## Research Aims and Questions

This study aims to identify leadership talent gaps and the factors that challenge leadership development. The research focuses on talent management, key skill sets, and work values.

### Study Objectives:

- **Understand Organizational Culture:** Examine how corporate and educational cultures foster effective leadership environments. A strong, adaptive culture is vital for developing and retaining leaders.
- **Develop Leadership Talent Holistically:** Explore how to develop educational leaders through a blend of skills, attitudes, and core values. This addresses the talent gap by focusing on both technical and ethical competencies.
- **Promote Ethical Standards:** Investigate how ethical work standards contribute to well-being and professional standards. Embedding ethics in leadership development is crucial for attracting and retaining talent.

### Research Questions:

1. How do organizational cultures influence effective leadership environments?
2. In what ways can educational leadership talent be developed through skills, attitudes, and core values?
3. How do ethical standards and values contribute to well-being in educational leadership?

### Sampling Strategy

This study employed a **purposive sampling** strategy to select participants with specific knowledge and expertise relevant to talent management. This approach, as described by Creswell (2018), focuses on selecting information-rich cases from which one can learn a great deal about issues of central importance to the purpose of the inquiry. The goal is to gain an in-depth understanding from a specific group, rather than to achieve statistical representativeness of a larger population. Consequently, the participants were drawn from a distinct subgroup within the corporate sector: **top management and officers** at BP Malaysia and LCG.

## The Research Sites and Participants

### Research sites

This study took place during the JPA-BMCC Management Development Programme in 2024, also referred to as the British Companies Attachment Programme (BCAP). This programme represents a strategic partnership between the British Malaysian Chamber of Commerce (BMCC) and the Public Service Department of Malaysia (JPA). Since its inception in 1983, this programme has played a pivotal role in enhancing collaboration between the public and private sectors, providing senior government officers (Grades 48 to 54) with invaluable experience through a comprehensive four-week placement. This placement consists of two weeks in Malaysia and two weeks in the UK, allowing participants to immerse themselves in diverse corporate environments.

The initiative offers numerous benefits, including opportunities to influence policy reforms, strengthen relationships with the Malaysian Government, engage in knowledge exchange, gain insights into government policies and initiatives, enhance brand visibility, and foster long-term partnerships. The programme in 2024 marks the 25th cohort of the programme, themed "Fostering Leaders in Holistic Innovation and Smart Development." It features 15 senior Malaysian government officers with expertise in critical areas such as digital technology, talent development, food security, energy transition, smart cities, and climate change. This diverse background ensures that the programme remains relevant and impactful in addressing

contemporary challenges facing Malaysia. The placements took place in BP Malaysia, Kuala Lumpur and Learning Curve group (LCG), Durham, United Kingdom (UK).

### **Introduction to BP Malaysia**

BP Malaysia's approach to talent management is highly structured and purpose-driven, aligning with the parent company's values. The company's talent management and leadership development programs, such as *grow@BP* and *people@BP*, are designed to systematically prepare employees for future leadership roles through structured training, performance reviews, and succession planning. A key element is the **Advancing Talent Pool**, which proactively identifies and nurtures high-potential employees. This system reflects a belief that leadership talent is a strategic asset to be developed purposefully. The underlying value-based leadership is evidenced in the company's **Code of Conduct** and **Safety Leadership Principles**, which guide all business activities and talent decisions, emphasizing ethical conduct and social responsibility.

### **Introduction to Learning Curve Group (LCG)**

LCG's talent management and leadership development strategy is directly linked to its core mission: "Transforming lives through learning." This value-based approach is central to its identity as a training and education provider. Leadership development at LCG is continuous and multi-faceted, utilizing various methods like one-on-one coaching, e-learning, and workplace shadowing. The company fosters a **culture of continuous learning** to support employee growth, which directly mirrors the services it provides to its clients. The company's focus on a "purpose-driven culture" and a "human-centric approach" means that its leaders are not just managers but are actively involved in mentoring and coaching. This shows a commitment to developing a workforce that is aligned with the company's foundational values of accessible, high-quality education.

### **Participants**

The participants included 20 top management and officers from each company, BP Malaysia and LCG, totalling 40 individuals. Data were collected through a combination of **one-on-one interviews** and **focus group discussions (FGDs)**. At BP Malaysia, participants represented various management levels, including the Head of the Country Manager, senior leaders (line managers), and members of the Graduate Programme who participated in FGDs. Similarly, at LCG, the one-on-one interviews and FGDs involved a group of directors (Group Commercial Director, Director of People, Director of Apprenticeship & Employability, and Director of Excellence) and Heads of Departments.

### **Data Analysis**

A suitable data analysis approach for the study on value-based leadership and leadership talent development is **thematic analysis**. This method is ideal for dissecting the qualitative data from interviews and focus groups to find recurring patterns and themes. It allows researchers to move beyond simple descriptions and delve into the deeper meaning of participants' experiences and perceptions. The analysis would systematically involve coding the data, grouping these codes into meaningful themes related to the research questions, and then interpreting these themes to provide a rich, narrative-based understanding of the topics. This approach is powerful for uncovering how values are integrated into leadership practices and how these values, in turn, influence the development of new talent.

## Results

### Lessons from Cross-Sector Leadership Development

The private sector's structured talent management, including initiatives such as talent pools and continuous performance feedback, offers adaptable frameworks for education. According to Tenney (2023), companies that promote a learning culture foster engaged employees who are more successful. BP Malaysia offers management opportunities through its global early careers' programs, such as the Graduate Programme for early-career professionals and Internship Programmes for students, focused on areas like People & Culture, finance, technology, and lubricants. These programs provide hands-on experience, mentorship, and development opportunities within a large, global organization, supporting the transition to a lower-carbon future. For example, BP Malaysia's grow@bp and focus@bp programmes demonstrate how integrating leadership development with employee well-being can foster sustainable talent pipelines. Meanwhile, Learning Curve Group's purple people ethos including coaching, flexible learning, and inclusivity embodies values central to developing adaptive leaders (Learning Curve Group, 2024).

### Organizational Culture and Leadership Development

Talent management programmes in the corporate sector typically include structured initiatives such as leadership training, performance reviews, and succession planning. In contrast, the public sector faces unique challenges, including budgetary constraints and civil service regulations. The research underscores the current trend of identifying essential skills for future leaders. Key skills identified include adaptability, communication, critical thinking, cultural awareness, and emotional intelligence (Chief Talent Officer, 2023; Birt, 2025). Both organizations recognized the necessity of mentoring and coaching to strengthen these competencies.

### Values and Work Ethics

Ethical work standard including transparency, psychological safety, and respect were highlighted as critical enablers of effective leadership. BP Malaysia fosters a culture balancing innovation with ethical accountability through programmes emphasizing continuous learning and openness, encapsulated by their slogan "Fail Fast, Fix Fast." Robust channels such as the Speak Up programme encourage transparent communication and psychological safety. Strategic HR tools like grow@bp and focus@bp support leadership development via coaching and real-time feedback. Similarly, Learning Curve Group (LCG) fosters an inclusive culture, branding its workforce as "Purple People" who prioritize mutual support and empowerment. LCG embeds these values through targeted training and wellbeing programmes, reflecting how values-based leadership cultivates engagement and resilience, the key competencies for educational leaders. Psychological safety and inclusiveness are fundamental to unlocking employee potential and driving innovation (Maxwell, 2011; Flemming, 2016). These environments reflect how values-based leadership nurtures engagement and resilience, competencies critical for educational leaders.

### Discussion And Conclusion

The findings illustrate that leadership development rooted in a values-based framework strengthens leadership effectiveness by building trust and fostering sustainable performance. Educational leadership development can benefit significantly from adopting private sector talent management practices integrated with public service values. Cross-sector partnerships are pivotal for knowledge exchange and co-creation of leadership development programmes



customized to educational contexts. Emphasizing continuous learning and ethical decision making equips leaders to manage complexities effectively.

It is important to emphasise that values-based leadership development in education demands integrating ethical standards with competency-based training. Public educational institutions can leverage successful corporate strategies by adapting them to reflect sector-specific values such as community commitment, transparency, and lifelong learning. Tenney (2023) argues that the creation of a strong learning environment is crucial for both long-term company success and employee fulfilment in which public sector could adopt the best practices from the corporate sector.

Respectively, in order to ensure the development of effective leadership, this process must go beyond skills acquisition to foster leaders who model and promote workplace values, thereby strengthening organizational culture and stakeholder trust. Cross-sector collaborations such as the JPA-BMCC programme provide rich platforms for knowledge exchange, enabling education leaders to benefit from private sector innovations while reinforcing public service values.

### **Challenges in Bridging the Leadership Gap**

Leadership development in the public and private sectors faces distinct yet interconnected challenges, rooted in differing organizational structures, cultures, and resource constraints. Public sector leadership prioritizes ethics, regulatory compliance, policy expertise, and community engagement, often requiring leaders to balance bureaucratic demands with innovation and customer-centric approaches (Exec Capital, 2024). In contrast, private sector development focuses on profitability, competition, and innovation, emphasizing skills like market analysis, strategic thinking, and financial management.

Bridging leadership across these sectors demands significant cultural adaptability. Leaders transitioning from private to public must navigate complex bureaucracies and diverse stakeholder interests, while those moving from public to private confront a profit-driven environment that may contrast with their regulatory and community-focused experience. This challenge is compounded by rapidly evolving technological and geopolitical landscapes, which demand leaders capable of managing today's complexities and anticipating future uncertainties. Yet many current leaders lack these capabilities, creating a widening leadership gap, a disconnect between existing skills and those required to meet emergent challenges. This gap risks lowering employee morale, hampering productivity, and forfeiting strategic opportunities.

Addressing these disparities requires organizations to carefully identify leadership competency gaps and implement tailored development programmes that foster cross-sector agility, cultural fluency, and forward-looking capabilities essential for sustainable leadership in both public and private spheres. Understanding these dynamics is crucial for effective leadership development strategies that bridge the gap between public and private sectors. As both sectors increasingly recognize the value of cross-sector collaboration, there is an opportunity for leaders to draw on best practices from each domain. This convergence can foster a new paradigm where efficiency meets social responsibility, ultimately enhancing leadership effectiveness across both sectors.

Addressing the leadership gap requires a comprehensive approach that includes tailored training programmes, mentorship opportunities, and a commitment to fostering adaptable leadership styles capable of thriving in diverse environments. By investing in these areas, organizations can cultivate leaders who are not only equipped to tackle today's challenges but are also prepared for the uncertainties of tomorrow.

## Recommendations

To bridge the leadership talent gap, especially within the education sector, organizations should adopt a value-based approach. This strategy involves integrating ethical principles and core values directly into talent management frameworks and leadership development programs. This approach emphasizes four key areas:

1. **Integrate Values into Talent Frameworks:** Leadership frameworks should explicitly incorporate ethical standards, social responsibility, and integrity. This includes using tools like regular employee surveys to measure engagement and demonstrate that leaders value employee input, a practice successfully used by both BP Malaysia and LCG.
2. **Implement Continuous Learning and Support:** Organizations should transition from traditional annual reviews to a **continuous performance management** model. This involves consistent mentoring, coaching, and feedback sessions that reinforce core values in daily practice. Training should be adaptive and focus on key skills like **emotional intelligence** and **ethical decision-making**, with regular skills assessments to tailor programs.
3. **Foster Cross-Sector Partnerships:** Collaboration between educational bodies and private organizations is crucial. By sharing best practices and developing hybrid leadership models, these partnerships can strengthen leadership capabilities across sectors.
4. **Promote Inclusive and Transparent Leadership:** It is vital to build a culture of psychological safety, diversity, equity, and inclusion. Leaders should create an environment where employees feel empowered to take risks and innovate, with regular recognition for achievements to reinforce desired behaviours.

## Study Limitations

This study's primary limitation stems from its **cross-cultural context** and **small sample size**, which restrict the generalizability of the findings. The research was conducted in a Malaysian subsidiary of a multinational corporation (BP Malaysia) and a UK-based company (LCG). This duality presents challenges in isolating the influence of specific cultural norms and national business environments on the implementation of value-based leadership and talent management. For instance, as suggested by Hofstede's cultural dimensions theory, differences in power distance and individualism between the UK and Malaysia could significantly influence hierarchical structures and an individual's role in their own development (Hofstede, 2011). Furthermore, the qualitative data, while rich, may not represent the broader industry. The findings are specific to these two organizations and their unique corporate cultures.

## Future Research

Future research should build upon these findings to provide a more comprehensive understanding of value-based leadership and talent development. Some key directions include:

- **Expanded Cross-Cultural Research:** A larger-scale, comparative study across various countries could test the applicability of existing leadership theories, such as **Authentic Leadership** (Avolio & Gardner, 2005) and **Ethical Leadership** (Brown & Treviño, 2006), in different cultural contexts. This would help determine if the identified themes are universal or culturally contingent.
- **Longitudinal Studies:** To move beyond a snapshot view, a longitudinal study could track the long-term impact of value-based leadership on talent retention, employee engagement, and organizational performance. This would provide empirical evidence on the sustained effectiveness of these strategies, building on research by scholars like Walumbwa et al. (2008) who link authentic leadership to positive organizational outcomes.
- **Integration with Technology and AI:** Explore how emerging technologies and AI are influencing leadership talent development. Future research could investigate how digital platforms, data analytics, and virtual reality training can be used to scale and personalize value-based leadership development programs, a topic increasingly relevant in contemporary talent management literature (O'Connell et al., 2021).
- **Focus on Diverse Talent Pools:** A crucial area for future research is examining how value-based leadership supports the development of diverse talent, including women and individuals from minority groups. Scholars like Eagly and Carli (2007) have highlighted the importance of inclusive leadership styles, and a focused study could explore how specific values foster an environment where diverse talent can thrive and advance into leadership roles.

## Conclusion

Developing tomorrow's educational leaders requires bridging the significant talent gap through a dual emphasis on skills development and deeply held values. A values-based leadership approach fosters leaders who are trustworthy, adaptable, and equipped to meet the evolving demands of educational ecosystems. This research, grounded in insights from corporate and educational sector attachments, underscores the necessity of embedding work ethics and values in leadership frameworks. The lessons drawn from corporate exemplars such as BP Malaysia and Learning Curve Group reinforce the impact of ethical leadership development underpinned by continuous learning and inclusive cultures. By fostering leaders who are not only skilled but also morally grounded, educational systems can build resilience, improve organizational performance, and better serve their communities to meet future challenges and foster continuous organizational excellence.

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# CATALYSING THE FUTURE: TRANSFORMATIONAL LEADERSHIP FOR AI-READY TEACHER EDUCATION 5.0

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**Abstract:** *The integration of artificial intelligence into teacher education presents both a strategic imperative and a leadership challenge in preparing future educators for Education 5.0. This conceptual paper proposes a leadership-driven framework that positions transformational leadership as the catalyst for developing AI-ready pre-service teachers who are ethical, adaptive, and human-centered. The purpose is to bridge fragmented research across leadership theory, teacher preparation, and responsible AI integration by offering a unified, future-focused model. Using a narrative review of recent literature (2020–2025), this study synthesises insights from digital leadership, educational innovation, and pre-service teacher competency frameworks. Five key attributes are identified as critical for next-generation educators: ethical responsibility, critical AI literacy, emotional intelligence, reflective adaptability, and human-centred design thinking. The “TL-AI-Ed5.0” conceptual framework is introduced, positioning transformational leaders as visionary change agents who drive institutional reform, embed ethical AI practices, and nurture innovation cultures in teacher education. The framework provides a strategic roadmap for reimagining leadership behaviours, institutional priorities, and professional learning within pre-service teacher programmes. This paper concludes that transformational leadership is foundational to realising the aspirations of Education 5.0. Offering a cohesive conceptual model contributes to leadership theory, informs policy development, and supports teacher education institutions in shaping AI-ready, ethically grounded future educators. Future research should focus on empirical validation, implementation strategies, and the influence of leadership on AI integration outcomes in pre-service education contexts.*

**Keywords:** *Transformational Leadership, AI-Ready Pre-Service Teachers, Education 5.0, Ethical Leadership, Human-Centred Innovation*

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## 1. Introduction

The integration of artificial intelligence into teacher education marks a pivotal shift in how future educators are prepared for a rapidly evolving digital landscape. Alongside this transformation, education systems worldwide are transitioning from Education 4.0, which emphasises automation and digital skills, to Education 5.0, a paradigm grounded in ethical responsibility, emotional intelligence, and human-centred innovation (Chinchorkar and Jadhav, 2024; Isbahi, 2023). This emerging vision of education demands not only technological readiness but also adaptive and values-driven leadership across all levels of teacher preparation.

Despite the growing presence of AI in higher education, many teacher education programmes struggle to integrate it meaningfully and ethically into pre-service training. Current practices often prioritise technological tools without sufficiently addressing critical competencies such as reflective thinking, digital ethics, and inclusive innovation (Fullan et al., 2024; Wang, 2021). As a result, pre-service teachers may become digitally skilled but lack the leadership mindset needed to navigate complex AI-driven learning environments (Abositta et al., 2024; Rind et al., 2024).

Leadership serves as a crucial lever in shaping institutional responses to AI integration. Transformational leadership, in particular, offers a compelling foundation through its emphasis on vision, intellectual stimulation, emotional connection, and personalised support (Antonopoulou et al., 2021; Meidelina et al., 2023). However, current literature tends to isolate leadership development, AI literacy, and teacher education into separate discourses, leaving a significant conceptual gap (Hou et al., 2024). Bridging these domains is essential for building educator capacity that aligns with the aspirations of Education 5.0.

This paper addresses that gap by introducing a conceptual model entitled “TL-AI-Ed5.0”. The model positions transformational leadership as the catalyst for developing AI-ready, ethically anchored, and human-centred pre-service teachers. Drawing on a narrative review of literature from 2020 to 2025, the paper synthesises current findings in leadership theory, digital pedagogy, and teacher preparation. It argues that transformational leadership is not only relevant but essential for fostering the mindsets, competencies, and institutional conditions needed to realise the future of education.

While prior studies have explored transformational leadership in digital settings (Antonopoulou et al., 2021; Meidelina et al., 2023), AI integration in education (Wang, 2021; Abositta et al., 2024), and the aspirational values of Education 5.0 (Isbahi, 2023; Chinchorkar & Jadhav, 2024), no existing framework unifies these three domains within the context of pre-service teacher education. Current research tends to isolate these constructs, resulting in fragmented approaches that overlook the interplay between leadership behaviours, ethical AI readiness, and human-centred pedagogy. The TL–AI–Ed5.0 framework fills this strategic void by positioning transformational leadership as the catalyst for cultivating AI-ready, ethically grounded, and emotionally intelligent pre-service teachers. These qualities are central to the vision of Education 5.0. As a conceptual innovation, this framework offers a bold and timely foundation for institutional transformation. It serves as a springboard for future empirical validation, cross-cultural adaptation, and education policy integration.

## **2. Theoretical and Conceptual Foundations**

### **2.1 Transformational Leadership Theory**

Transformational leadership is widely recognised as a powerful leadership model that fosters change by motivating followers to exceed expectations and embrace institutional vision. Initially conceptualised by Bass (1985), transformational leadership comprises four core dimensions: idealised influence, inspirational motivation, intellectual stimulation, and individualised consideration. These elements collectively promote a culture of innovation, commitment, and professional growth values highly relevant in the context of preparing future educators for complex, AI-infused educational environments (Antonopoulou et al., 2021).

Within teacher education, transformational leadership has demonstrated strong associations with enhanced teacher professionalism, pedagogical innovation, and institutional responsiveness to change (Meidelina et al., 2023; Sabwami, 2025). Leaders who embody transformational behaviours are capable of inspiring shared vision, stimulating reflective thinking, and providing personalised mentorship qualities that are essential in shaping pre-service teachers’ readiness for uncertain, rapidly evolving educational futures.

Recent developments in the field have expanded the relevance of transformational leadership by integrating digital, visionary, and ethical dimensions. For instance, Hogan et al. (2021) argue that emotionally intelligent leadership, supported through digital training tools, enhances

leaders' ability to navigate high-stakes decisions in complex settings. Similarly, Odugbesan et al. (2023) and Ahmad and Mohebi (2025) propose that visionary and servant leadership models complement transformational leadership by embedding sustainability, ethics, and empathy into leadership practice core values in Education 5.0.

Despite these advancements, the application of transformational leadership in the context of AI integration and pre-service teacher preparation remains underexplored. While studies affirm the value of leadership in educational reform, there is limited conceptual synthesis connecting leadership theory directly to the competencies required for AI-ready teaching (Hou et al., 2024). This gap underscores the need to reconceptualise leadership not only as a driver of digital transformation but as a humanising force that nurtures ethical, adaptive, and future-ready educators.

## **2.2 Artificial Intelligence in Teacher Education**

Artificial intelligence is rapidly reshaping the educational landscape, influencing curriculum design, assessment systems, and personalised learning environments. In teacher education, AI holds the potential to transform how pre-service teachers are trained, evaluated, and supported. From intelligent tutoring systems and learning analytics to AI-driven content generation and virtual classrooms, these tools can enhance learning efficiency and promote differentiated instruction. However, the successful integration of AI into teacher education extends beyond mere technical deployment; it requires leadership that prioritises ethical use, pedagogical relevance, and institutional readiness (Abositta et al., 2024; Wang, 2021).

A key concern surrounding AI in education is the ethical dimension. As AI tools increasingly influence decision-making and learner profiling, teacher educators must instil in pre-service teachers a strong foundation in digital ethics, data privacy, and responsible innovation (Fullan et al., 2024; Vargas Portillo, 2025). This calls for leadership that can mediate between technological potential and ethical accountability, ensuring that AI applications are aligned with inclusive and human-centred pedagogical goals.

Furthermore, studies have highlighted the need to build pre-service teachers' digital self-efficacy and critical AI literacy to ensure meaningful classroom integration (Rind et al., 2024). The effectiveness of AI-enhanced instruction depends on teachers' capacity to critically evaluate, select, and ethically use AI tools in diverse educational settings. As such, teacher education programmes must move from surface-level digital training to deeper, leadership-led models of professional development that embed AI literacy within reflective, values-driven pedagogy.

Despite growing discourse on AI in education, most existing literature focuses on technological tools rather than on leadership mechanisms that support pre-service teacher development in AI-integrated environments. This reveals a conceptual gap where the leadership role particularly transformational leadership is either overlooked or insufficiently theorised (Hou et al., 2024). Addressing this gap is essential for building a teacher education ecosystem that is not only technologically equipped but also ethically guided and emotionally intelligent in the age of AI.



### 2.3 Education 5.0 Paradigm

Education 5.0 represents a transformative shift from technology-centred models of learning to frameworks that emphasise human values, sustainability, and emotional intelligence. While Education 4.0 was rooted in preparing learners for the Fourth Industrial Revolution through digital skills and automation, Education 5.0 advances a more holistic vision one that integrates cognitive, emotional, ethical, and social dimensions of learning (Chinchorkar & Jadhav, 2024; Isbahi, 2023). This paradigm shift repositions the role of educators from mere facilitators of digital tools to leaders of ethical, human-centred educational innovation.

At the heart of Education 5.0 is the call for a values-driven approach to curriculum and pedagogy. Human-centred innovation, critical thinking, and emotional well-being are no longer peripheral aims but foundational pillars of educational excellence. These goals demand a fundamental rethinking of teacher preparation programmes, particularly in how they cultivate pre-service teachers' ethical reasoning, socio-emotional skills, and cultural responsiveness. As Isbahi (2023) suggests, future educators must be equipped not just with digital competence, but also with the moral clarity and empathy to use technology for inclusive and sustainable impact.

The successful realisation of Education 5.0 depends heavily on institutional leadership that can align systems, people, and policies with these emerging values. As noted by Odugbesan et al. (2023), visionary leadership is essential in steering educational reform that balances technological progress with humanistic purpose. In the context of teacher education, this means creating learning environments where pre-service teachers are empowered to critically engage with technology, reflect on their societal roles, and innovate in ways that prioritise well-being and equity.

While Education 5.0 offers a compelling future-oriented vision, its integration into teacher education remains limited and inconsistent. Existing programmes often lack the leadership frameworks necessary to translate these aspirational principles into practice. Bridging this disconnect requires a deliberate synthesis of leadership theory, technological adaptability, and ethical pedagogy precisely what the TL AI Ed5.0 framework aims to provide.

### 2.4 Conceptual Gaps and Synthesis

Although transformational leadership, AI integration, and the Education 5.0 paradigm have each been independently explored in educational research, there remains a significant conceptual gap when it comes to their intersection, particularly in the context of preparing pre-service teachers. Leadership models are frequently examined in relation to organisational development or school-wide change, while AI-related studies tend to focus on tools, systems, or digital competencies. Meanwhile, Education 5.0 is often positioned as an aspirational policy vision rather than a practical, leadership-enabled instructional reality (Fullan et al., 2024; Hou et al., 2024).

This fragmentation presents a critical limitation in addressing the multifaceted demands of 21st-century teacher education. For instance, while studies by Antonopoulou et al. (2021) and Meidelina et al. (2023) demonstrate the potential of transformational leadership to foster innovation and teacher professionalism, they stop short of linking these outcomes to digital or AI-specific capacities. Similarly, research into AI in education (Abositta et al., 2024; Wang, 2021) often overlooks the role of leadership in shaping ethical use, strategic adoption, or the emotional resilience needed for AI-enhanced pedagogy. As highlighted by Rind et al. (2024),

even when AI competencies are addressed, pre-service teachers' self-efficacy and reflective adaptability are rarely embedded within broader institutional leadership narratives.

The synthesis of these domains calls for a new conceptual lens, one that recognises leadership as the linchpin connecting technological, ethical, and pedagogical transformation. The TL AI Ed5.0 framework responds to this need by positioning transformational leadership as a strategic enabler for preparing pre-service teachers who are not only digitally fluent but also ethically responsible, emotionally intelligent, and pedagogically reflective. Grounded in a narrative review of literature from 2020 to 2025, the framework draws on multiple leadership models, including visionary, ethical, and servant leadership, as well as the foundational values of Education 5.0 (Ahmad and Mohebi, 2025; Tsarkos, 2024).

This synthesis also reflects insights from immersive leadership development research, which emphasises the importance of emotional engagement and scenario-based decision-making in preparing leaders for complex educational environments (Hogan et al., 2021; Jenkins and Khanna, 2025). It connects ethical AI practice with institutional reform through a leadership lens, highlighting the need for pre-service teacher education to be guided by values-based leadership that embraces both technological innovation and human-centred responsibility.

### **3. Conceptual Framework “TL–AI–Ed5.0”**

#### **3.1 Overview of the Framework**

Artificial intelligence is rapidly reshaping the educational landscape, influencing curriculum design, assessment systems, and personalised learning environments. In teacher education, AI holds the potential to transform how pre-service teachers are trained, evaluated, and supported. From intelligent tutoring systems and learning analytics to AI-driven content generation and virtual classrooms, these tools can enhance learning efficiency and promote differentiated instruction. However, the successful integration of AI into teacher education extends beyond mere technical deployment; it requires leadership that prioritises ethical use, pedagogical relevance, and institutional readiness (Abositta et al., 2024; Wang, 2021).

#### **3.2 Key Components of the Framework**

The TL–AI–Ed5.0 framework comprises two essential dimensions: the core competencies required of AI-ready pre-service teachers and the leadership behaviours necessary to cultivate these competencies within teacher education ecosystems. Together, they provide a cohesive model for preparing future educators who are both technologically equipped and ethically grounded.

The first component identifies five foundational competencies for pre-service teachers navigating an AI-enhanced educational landscape. The first is ethical responsibility, which includes awareness of data privacy, algorithmic fairness, and the social implications of AI. As digital tools increasingly influence instructional decisions, pre-service teachers must be trained to approach AI use with moral clarity and critical judgment (Fullan et al., 2024; Vargas Portillo, 2025). Secondly, critical AI literacy involves the ability to evaluate and implement AI tools meaningfully and responsibly within the classroom. This includes understanding AI functionality, recognising potential biases, and applying AI to enhance student learning outcomes (Rind et al., 2024; Wang, 2021).

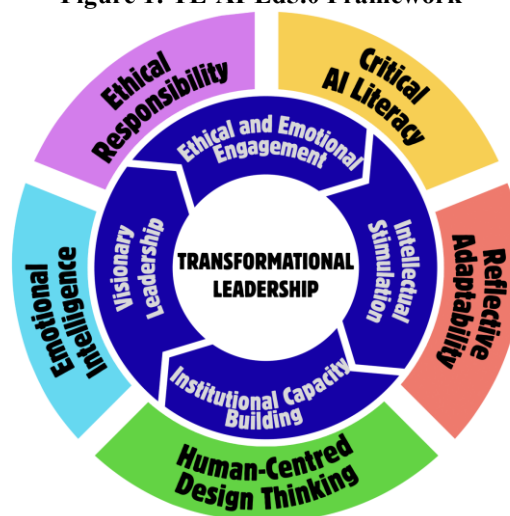
Thirdly, emotional intelligence is increasingly vital in digitally mediated environments. Future educators must develop empathy, resilience, and interpersonal awareness to navigate the social dynamics of AI-supported classrooms (Hogan et al., 2021; Isbahi, 2023). The fourth competency, reflective adaptability, encourages teachers to continuously evaluate and adjust their instructional approaches, particularly in response to emerging technologies and shifting learner needs (Meidelina et al., 2023; Sabwami, 2025). Lastly, human-centred design thinking empowers teachers to create inclusive and accessible learning experiences that maintain human agency and dignity in AI-integrated settings (Ahmad and Mohebi, 2025; Chinchorkar & Jadhav, 2024).

To activate and sustain these competencies, the framework identifies four interlinked leadership dimensions grounded in transformational leadership theory. Visionary leadership is essential in articulating a clear, future-oriented direction for AI integration in teacher education. It involves aligning institutional goals with the broader aspirations of Education 5.0 (Jenkins & Khanna, 2025; Odugbesan et al., 2023). Equally important is ethical and emotional engagement, which positions leaders as moral agents and emotionally supportive figures who model responsible decision-making in uncertain and fast-evolving contexts (Ahmad & Mohebi, 2025; Hogan et al., 2021).

The third dimension, intellectual stimulation, enables innovation by challenging conventional thinking and fostering a culture of inquiry and reflective practice among both educators and trainees (Antonopoulou et al., 2021; Meidelina et al., 2023). Finally, institutional capacity building reflects the need for systemic change, such as digital infrastructure, staff upskilling, and inclusive governance that allows leadership visions to translate into sustainable practice (Fullan et al., 2024; Hou et al., 2024).

Together, these leadership behaviours provide the enabling conditions necessary to nurture AI-ready pre-service teachers who are aligned with the human-centred ethos of Education 5.0. The TL–AI–Ed5.0 framework, illustrated in Figure 1, therefore functions as both a conceptual lens and a strategic guide for leadership-led transformation in teacher education.

Figure 1: TL-AI-Ed5.0 Framework



### 3.3 Application in Pre-Service Teacher Education

The practical application of the TL–AI–Ed5.0 framework within pre-service teacher education requires deliberate leadership strategies to embed its principles into institutional systems, pedagogical design, and professional learning environments. Embedding the framework begins with aligning curriculum, assessment, and field experiences to develop the five core competencies: ethical responsibility, critical AI literacy, emotional intelligence, reflective adaptability, and human-centred design. Transformational leaders play a central role in initiating this alignment by inspiring shared vision, modelling ethical AI use, and fostering reflective dialogue among teacher educators and trainees (Antonopoulou et al., 2021; Ahmad & Mohebi, 2025).

In terms of curriculum, leadership must ensure that AI integration goes beyond tool-based workshops and includes critical inquiry into AI ethics, bias, transparency, and its socio-educational implications (Rind et al., 2024; Vargas Portillo, 2025). Courses should embed case-based learning, scenario simulations, and design thinking projects that cultivate decision-making, empathy, and adaptability in AI-rich contexts. Training modules must also be reoriented to promote continuous digital upskilling, encouraging both pre-service teachers and their mentors to embrace emerging technologies with ethical discernment and pedagogical confidence (Abositta et al., 2024; Fullan et al., 2024).

Culturally, the framework demands an institutional shift towards innovation, emotional support, and inclusive leadership. Transformational leaders nurture this culture by creating psychologically safe environments where experimentation is encouraged, reflective practice is celebrated, and emotional engagement is recognised as a form of professional strength (Hogan et al., 2021; Meidelina et al., 2023). By embedding these values at the core of institutional practice, leadership ensures that pre-service teachers are not merely trained in AI tools but are transformed into emotionally intelligent, ethically grounded, and innovation-ready educator hallmarks of the Education 5.0 vision (Chinchorkar & Jadhav, 2024; Isbahi, 2023).

## 4. Implications for Practice and Policy

The TL–AI–Ed5.0 framework offers strategic implications for reimagining teacher education at both institutional and systemic levels. Its application extends beyond individual competencies, demanding reforms across curriculum design, leadership development, institutional culture, and policy frameworks. These implications provide a roadmap for embedding transformational leadership as a central mechanism in driving ethical, future-ready teacher preparation.

### 4.1 Curriculum Reform and Digital Pedagogy

To support AI-ready, human-centred teaching, teacher education curricula must be restructured to incorporate not only digital tools but also critical perspectives on technology. This includes embedding AI literacy, data ethics, emotional intelligence, and design thinking into foundational coursework. Pre-service teachers should engage with authentic case studies, digital simulations, and inquiry-based assessments that reflect the ethical and practical realities of AI in classrooms (Rind et al., 2024; Vargas Portillo, 2025). Curriculum reform must shift from tool-focused training towards pedagogies that encourage adaptive, reflective, and ethically grounded teaching practice aligned with the values of Education 5.0 (Isbahi, 2023).

## 4.2 Leadership Development for Teacher Educators

Transformational leadership cannot be cultivated in pre-service teachers without first strengthening the leadership capacities of those who train them. Teacher educators must be equipped with the mindset, competencies, and emotional intelligence to model visionary, ethical, and emotionally engaged leadership. Professional development programmes should focus on digital leadership, AI ethics, and instructional design for innovation, empowering faculty members to serve as change agents within their institutions (Antonopoulou et al., 2021; Hogan et al., 2021). Mentorship structures and communities of practice can further reinforce leadership development among academic staff (Meidelina et al., 2023).

## 4.3 Institutional Change and Innovation Culture

The success of AI integration depends not only on individuals but on institutions that cultivate innovation cultures grounded in trust, experimentation, and collective growth. Transformational leaders are pivotal in shaping such environments by promoting a shared vision, providing emotional support, and enabling professional autonomy (Fullan et al., 2024; Odugbesan et al., 2023). Institutional change must also include investment in digital infrastructure, collaborative platforms, and inclusive governance structures that allow for agile, ethical, and sustainable decision-making (Hou et al., 2024). Innovation must be positioned as a core institutional value, not an isolated initiative.

## 4.4 Education Policy Alignment and Governance

System-wide transformation requires alignment between institutional practices and national or regional education policies. Ministries, accreditation bodies, and teacher education councils must articulate clear guidelines on ethical AI use, AI literacy standards, and digital leadership expectations in teacher preparation programmes. Policies should incentivise institutions that integrate Education 5.0 principles, support research on AI in pedagogy, and promote leadership pathways for teacher educators (Ahmad & Mohebi, 2025; Jenkins and Khanna, 2025). Importantly, governance must emphasise equity, access, and sustainability to avoid widening digital divides or promoting uncritical AI adoption.

## 5. Future Research Directions

While the TL–AI–Ed5.0 framework offers a theoretically grounded model for integrating transformational leadership into AI-ready teacher education, its full potential depends on further empirical inquiry. Future research should focus on validating and refining the framework through both qualitative and quantitative approaches across diverse educational contexts.

A key direction for future work involves the empirical validation of the framework itself. Mixed-method studies could explore how the identified competencies and leadership dimensions manifest in real-world teacher education programmes. Pilot implementations and institutional case studies are particularly needed to test the practical relevance, adaptability, and impact of the TL–AI–Ed5.0 framework across diverse cultural and institutional contexts. Such empirical work would provide valuable insights into how transformational leadership directly influences the development of ethical AI literacy, reflective adaptability, and human-centred instructional design in pre-service teachers (Fullan et al., 2024; Rind et al., 2024).

Additionally, researchers should examine the relationship between different leadership styles and AI adoption outcomes. Comparative studies can assess whether transformational leadership leads to more ethical, sustainable, and effective AI integration compared to transactional, servant, or distributed models. This may also reveal the interplay between

leadership approach and institutional culture, highlighting context-specific factors that enable or hinder change (Antonopoulou et al., 2021; Odugbesan et al., 2023).

The longitudinal impact of the framework on teacher identity and practice is another promising area. Long-term studies could track how pre-service teachers internalise and enact the competencies outlined in TL–AI–Ed5.0 over time, particularly as they transition into in-service roles. Such research would illuminate how leadership exposure and AI-readiness training influence teachers’ professional identity, instructional resilience, and ethical decision-making (Meidelina et al., 2023; Sabwami, 2025).

While the TL–AI–Ed5.0 framework presents a robust conceptual pathway for transforming teacher education, its practical application may face several real-world challenges. Resistance to institutional change, especially in systems with rigid administrative hierarchies or outdated pedagogical models, can hinder adoption. Limited infrastructure, digital inequities, and inconsistent professional readiness among teacher educators may also constrain implementation. Furthermore, abstract competencies such as emotional intelligence, ethical reasoning, and human-centred innovation require sustained mentoring and reflective practice, which may not be uniformly accessible. Recognising these limitations is essential for future researchers and institutional leaders, as successful deployment of the framework will require not just design alignment, but also cultural readiness, strategic leadership, and ongoing investment.

Finally, there is a need for comparative research across teacher education systems at national and international levels. Exploring how different countries interpret and implement Education 5.0 values, and how leadership mediates these efforts, could lead to contextually adaptive versions of the framework. This would also help inform cross-cultural leadership development strategies and support policy alignment in global teacher education reform (Ahmad & Mohebi, 2025; Jenkins & Khanna, 2025).

## 6. Conclusion

This paper offers a timely conceptual contribution by introducing the TL–AI–Ed5.0 framework, which positions transformational leadership as the catalyst for preparing AI-ready pre-service teachers aligned with the values of Education 5.0. By bridging fragmented discourses across leadership theory, digital pedagogy, and ethical innovation, the framework redefines teacher preparation as a holistic, future-oriented endeavour. Transformational leadership emerges not only as a strategic enabler of institutional reform but as a humanising force that nurtures emotional intelligence, ethical awareness, and adaptive thinking in teacher education. As artificial intelligence becomes increasingly embedded in educational systems, institutions, and policymakers must act decisively to embed this leadership paradigm into curriculum, faculty development, and governance structures. Embracing TL–AI–Ed5.0 is not merely a theoretical exercise; it is a strategic imperative to ensure that tomorrow’s educators are empowered to lead with purpose, teach with integrity, and innovate with humanity at the core.

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## TEACHER LEADERSHIP AS A DRIVER OF TRANSFORMATIONAL CHANGE IN EDUCATION OF VERNACULAR (SJKT) SCHOOL

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**Abstract:** *Teacher leadership is increasingly recognized as central to advancing school improvement and student learning. Yet, limited research has explored its role in vernacular schools, particularly Tamil primary schools (SJKT) in Malaysia. This study investigates the leadership practices of teacher leaders in enhancing educational outcomes within SJKT schools in the Bangsar District, Kuala Lumpur. Guided by the constructivist paradigm, qualitative research design was employed to capture teachers lived experiences and perspectives. Using purposive sampling, five teacher leaders from five SJKT schools were selected based on their leadership responsibilities and recognition within their school communities. Data was collected through semi-structured interviews and analyzed thematically using Braun and Clarke's (2006) framework, supported by NVivo software. Findings reveal that teacher leaders contribute significantly to curriculum development, peer mentoring, student engagement, and professional learning communities. They enact transformational leadership, particularly through idealized influence, inspiring colleagues and cultivating collaboration. However, challenges such as hierarchical structures, limited training, and workload pressures were identified as barriers to effective leadership. This study underscores the importance of supporting teacher leadership within vernacular schools. Policy interventions and professional development programs are recommended to strengthen leadership capacity, enhance school inclusivity, and sustain educational quality. By highlighting context-specific practices, the study contributes to the broader discourse on teacher leadership in Malaysia's diverse educational landscape.*

**Keywords:** *Teacher leadership, transformational leadership, SJKT schools, educational outcomes*

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### 1.0 Introduction

Teacher leadership has emerged as a transformative force in education, extending beyond classroom instruction to include mentoring, curriculum innovation, and policy advocacy. Globally, teacher leaders are recognized for strengthening school culture, enhancing student outcomes, and fostering professional learning communities (Harris & Jones, 2022). In Malaysia, this role is particularly significant in Sekolah Jenis Kebangsaan Tamil (SJKT) schools, which balance the demands of meeting national curriculum standards while preserving Tamil cultural identity (Saad et al., 2025).

#### 1.1. Background

Teacher leadership in SJKT schools is often underutilized due to rigid structures, lack of training, and heavy workloads, which limit teachers' ability to balance instructional and leadership roles. Nevertheless, teacher leaders play vital roles as mentors, curriculum developers, and advocates, addressing challenges such as limited resources, student engagement, and curriculum adaptation. By fostering collaboration, adapting teaching to cultural and linguistic needs, and influencing policy, they connect classroom realities with institutional decision-making. Despite these contributions, hierarchical systems and limited professional development restrict their impact, underscoring the need for structured support

and targeted training to strengthen teacher leadership and enhance school improvement and student outcomes.

### **1.2. Problem Statement**

These schools face challenges such as socio-economic disparities, limited resources, and multilingual contexts (MOE, 2013), requiring teacher leaders to exercise adaptability and creativity in addressing both academic and cultural imperatives (Sivalingan, 2021). Despite its recognized importance, many SJKT schools struggle to fully harness the leadership potential of their teachers. The absence of structured leadership development programs limits teachers' readiness to take on roles beyond the classroom, while many assume such responsibilities informally and without adequate preparation, often leading to strain and burnout. Research on teacher leadership in SJKT schools remains limited, creating a gap in understanding its impact on educational outcomes. Furthermore, contextual factors such as linguistic diversity, socio-economic disparities, and curriculum adaptation are underexplored in current scholarship. Without localized insights, policymakers and school leaders lack effective frameworks to strengthen teacher leadership and drive educational transformation in SJKT schools.

### **1.3. Research Gap**

While teacher leadership has been widely studied globally, there remains a critical lack of research within Malaysia's Sekolah Jenis Kebangsaan Tamil (SJKT) schools. Existing studies largely focus on mainstream or international schools with different resources and leadership structures, leaving the unique realities of SJKTs such as multilingual demands, socio-economic disparities, and cultural preservation underexplored. This gap limits understanding of how teacher leadership operates in resource-constrained, linguistically diverse contexts and how it influences student outcomes. Moreover, little is known about the specific challenges SJKT teacher leaders face in balancing teaching and leadership roles, tailoring curricula, and addressing equity issues. The absence of localized, data-driven studies prevents policymakers and administrators from designing effective, evidence-based frameworks to strengthen teacher leadership. Addressing this gap through targeted qualitative research is therefore essential to enrich scholarship and provide practical solutions for enhancing leadership capacity in SJKT schools.

### **1.4. Research Questions**

Although teacher leadership has been widely discussed internationally, empirical studies focusing on SJKT schools remain limited. Addressing this gap, the present study explores teacher leadership in the Bangsar District, with attention to its roles, impact, and challenges. Specifically, the research is guided by three questions: RQ1: What are the key leadership roles undertaken by teachers in SJKT schools? RQ2: How does teacher leadership influence student performance and school management? RQ3: What challenges do teacher leaders face, and how can they be addressed?

### **1.5. Research Objective**

This study aims to explore the various leadership roles undertaken by teachers in SJKT schools, examine how these roles influence educational outcomes such as student achievement and school development, and identify the challenges that teacher leaders face in carrying out their responsibilities. In doing so, the study also seeks to propose practical strategies to strengthen teacher leadership and support sustainable improvements within the SJKT school context.

## 2.0. Literature Review

Over the past two decades, teacher leadership has become an important focus in education worldwide, highlighting how teachers influence teaching, learning, and school culture beyond formal administrative roles (York-Barr & Duke, 2004). Unlike principal-centered models that often limit innovation, distributed leadership views teachers as agents of change who contribute through their collective expertise (Hallinger, 2003). Studies from the United States show that teacher leaders enhance instructional quality through mentoring, professional learning communities, and curriculum innovation (Adam, 2018). In the United Kingdom, “middle leaders” serve as key links between classroom practice and school-wide goals (Harris & Jones, 2022), while in Australia, teacher leadership fosters collaboration and peer learning, particularly in challenging contexts (Crowther et al., 2004).

In Asia, research is expanding, with evidence from China showing that empowering teachers enhances motivation and student engagement despite hierarchical barriers (Yu & Luen, 2025), and from Singapore, where professional development programs strengthen teacher leadership in curriculum and school improvement (Hairon, 2017; Liu, 2021). Overall, global research underscores teacher leadership as essential for strengthening school culture, accountability, and sustainable innovation.

### 2.1. Teacher Leadership In The Malaysian Context

In Malaysia, research on educational leadership has mainly focused on principals, reflecting a hierarchical model (Mohd Tahir et al., 2021). However, the Malaysia Education Blueprint (2013–2025) emphasizes teacher empowerment, collaboration, and school-based innovation (MOE, 2013), leading to growing recognition of teacher leadership. Studies indicate that teacher leaders play significant roles in curriculum adaptation, peer mentoring, professional development, and inclusive education (Ismail et al., 2020; Ghazali et al., 2025).

At the same time, barriers such as rigid hierarchies, limited autonomy, insufficient training, heavy workloads, and a culture of compliance often restrict their effectiveness (Salleh & Hatta, 2021; Mohd Razali & Abd Hamid, 2022). Nevertheless, teacher leadership has been shown to strengthen professional learning communities, improve instructional practices, and enhance student outcomes (Nelikan & Yuet, 2023). Despite these insights, research on teacher leadership in vernacular schools particularly SJKTs remains scarce, underscoring the need to examine how leadership theories apply in Malaysia’s unique multilingual and socio-cultural contexts.

### 2.2. Challenges In Vernacular (SJKT) Schools

Sekolah Jenis Kebangsaan Tamil (SJKT) schools provide Tamil-medium instruction while following the national curriculum, carrying the dual responsibility of meeting national standards and preserving Tamil cultural and linguistic heritage (MOE, 2013; Ibrahim, 2018). However, they face significant challenges, including socio-economic disadvantages, as many students come from low-income families with limited parental involvement and access to resources (Kumar & A. Hamid, 2025; Tharani et al., 2023). Resource constraints such as small enrolments, inadequate facilities, and limited ICT access further hinder innovation (Maniam et al., 2024).

In addition, multilingual demands require teachers to design curricula that balance Tamil, Malay, and English proficiency (Zarin et al., 2022). Teacher leaders also encounter institutional barriers such as hierarchical school cultures, restricted autonomy, and insufficient leadership training (Raman & Sua, 2010; Yu & Luen, 2025). These challenges underscore the need for context-sensitive teacher leadership that can balance policy compliance, cultural preservation, and pedagogical innovation within resource-constrained environments.

### 2.3. Conceptual/Theoretical Framework

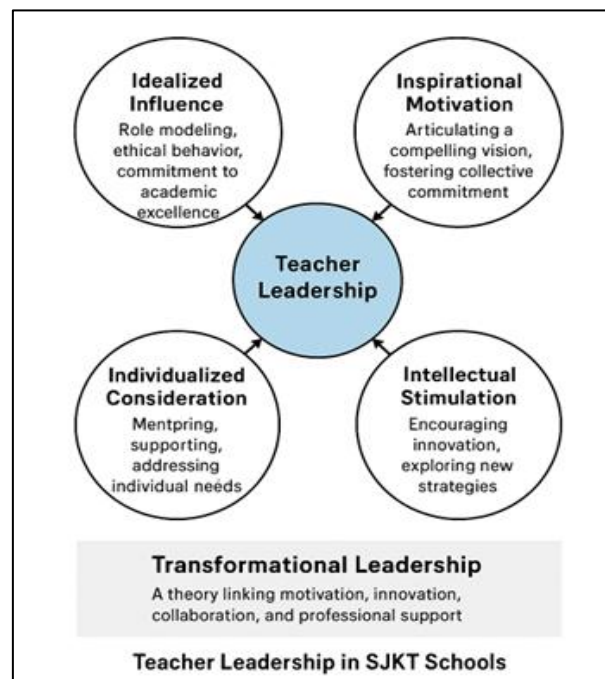
The conceptual framework of this study is grounded in distributed teacher leadership, which views teachers as agents of change who extend their influence beyond the classroom to drive school-wide improvement (York-Barr & Duke, 2004). Teacher leadership operates across three key domains: professional practice, where teachers mentor peers, adapt curricula, and foster professional learning communities (Wenner & Campbell, 2017); school culture, where they promote collaboration, shared decision-making, and balance curriculum demands with cultural identity preservation, particularly in SJKTs (Thiruchelvan et al., 2020); and the systemic context, where socio-economic conditions, resource availability, and governance structures shape opportunities and challenges for leadership (Groenewald et al., 2024). Collectively, these domains underscore the multifaceted and vital role of teacher leaders in advancing educational transformation.

**Figure 1: Conceptual Framework of Teacher Leadership in SJKT Schools**



Ultimately, the conceptual framework posits that transformational change in SJKT schools emerges when teacher leadership is effectively enacted across the three domains, despite systemic barriers. Teacher leaders function as mediators, bridging policy aspirations with classroom realities while promoting equity, innovation, and sustainability in education. The visual framework highlights the dynamic interplay between teacher leadership practices, school culture, and systemic conditions, positioning teacher leaders as catalysts for sustainable educational transformation in SJKT schools.

**Figure 2: Theoretical Framework of Teacher Leadership in SJKT Schools**



The above figure draws on transformational leadership theory, which emphasizes the ability of leaders to inspire, motivate, and guide others toward shared goals (Winkler, 2010). In education, this framework explains how teacher leaders influence colleagues, school culture, and student outcomes (Parai & Alias, 2025) through four key components: idealized influence, where they act as role models of integrity and professionalism; inspirational motivation, where they unite staff around shared academic and cultural goals; intellectual stimulation, where they encourage innovation and critical thinking; and individualized consideration, where they provide mentorship, support, and professional development (Bass & Riggio, 2006; Zhao et al., 2025). In SJKT schools, these behaviors are essential for balancing academic rigor with cultural preservation, fostering collaboration, and overcoming systemic barriers. Thus, transformational leadership provides a strong theoretical foundation for understanding how teacher leaders promote equity, inclusivity, and sustainable educational transformation.

### 3.0. Research Methodology

This study employed a qualitative research design to explore the leadership roles of teachers in enhancing educational outcomes within SJKT schools in the Bangsar District. A qualitative approach was deemed most appropriate as it captures the complexity of participants' lived experiences and the contextual factors that shape their leadership practices. As Creswell (2014) notes, qualitative designs are particularly suitable for investigating complex social phenomena in natural settings, where the emphasis is on meaning rather than quantification.

Guided by the constructivist paradigm, the study recognized that knowledge is socially constructed through interactions, narratives, and shared experiences (Merriam and Tisdell, 2015). Teacher leaders' perspectives were captured through semi-structured interviews, which allowed for both structured questioning and open-ended exploration. This design provided flexibility to probe emerging issues while ensuring coverage of key themes related to leadership roles, challenges, and educational outcomes.

The study targeted teacher leaders from SJKT schools in the Bangsar Pudu district, Kuala Lumpur. Out of 15 schools, five were purposively selected, and one teacher leader was chosen from each, forming a sample of five participants. Purposive sampling, widely used in qualitative inquiry, ensured that participants possessed relevant expertise and lived experiences (Palinkas et al., 2015). Inclusion criteria required at least three years of teaching experience, active engagement in leadership roles (e.g., curriculum planning, subject panel headship), and recognition within their school community. Teachers lacking leadership responsibilities or adequate experience were excluded. This approach ensured that the data reflected credible, contextually informed, and authentic insights into teacher leadership.

The primary research instrument was a semi-structured interview protocol designed to capture multiple dimensions of teacher leadership. Developed using Katzenmeyer and Moller's (2001) Teacher Leadership Model and validated by two experts in educational leadership, the guide was aligned with the study objectives. It comprises four sections: Demographics (5 questions); Leadership practices (6 questions); Impact and outcomes (5 questions); Challenges and support structures (4 questions). To ensure reliability and validity, a pilot study was conducted with two teacher leaders outside the Bangsar District. Feedback confirmed the clarity, flow, and appropriateness of the questions, leading to minor refinement. This process enhanced the instrument's contextual relevance, robustness, and credibility.

Data collection spanned four weeks following approval from the District Education Office and participating schools. Informed consent was obtained from all participants. Face-to-face interviews were conducted in private settings, each lasting between 45–60 minutes and were audio-recorded with permission. The interviews were transcribed verbatim, verified through member checking, and anonymized using pseudonyms. All transcripts were securely stored, ensuring confidentiality, accuracy, and credibility throughout the research process.

Data were analyzed using Braun and Clarke's (2006) six-phase thematic analysis framework, comprising: familiarization with the data; generating initial codes; developing preliminary themes; reviewing themes; defining and naming themes; and producing the final report. Transcripts were repeatedly read, coded, and grouped into themes, which were refined for coherence and supported with participant quotations to enhance authenticity. NVivo software was used to manage, code, and visualize relationships within the data.

Additionally, a cross-case thematic analysis was conducted across the five SJKT schools to identify shared challenges and context-specific practices. This comparative approach highlighted recurring patterns and unique leadership strategies, thereby strengthening the credibility and transferability of the findings.

Trustworthiness was ensured using Lincoln and Guba's (1985) four criteria: Credibility: achieved through prolonged engagement, triangulation, and member checking; Transferability: supported through rich contextual descriptions of schools and participants; Dependability: maintained through detailed audit trails of methodological decisions; and Confirmability: ensured through reflexive journaling to minimize researcher bias. Ethical safeguards included informed consent, the use of pseudonyms to protect participant identity, and the right to withdraw at any stage without penalty. These measures upheld the study's ethical integrity in line with qualitative research standards.

To strengthen the evidence for the positive impact of teacher leadership in SJKT schools, future studies can benefit from a triangulated data approach. The current findings based on

demographic profiles, leadership domains, areas of influence, and reported challenges offer valuable quantitative insights into the roles and contributions of teacher leaders. These structured data points help establish patterns, such as the correlation between leadership training and student outcomes or the relationship between role alignment and motivation.

To enrich this foundation, qualitative data should be incorporated through testimonies from colleagues, school administrators, and even students. These perspectives can validate and deepen the survey findings by revealing how teacher leaders influence team dynamics, foster collaboration, and support student growth. Anecdotal success stories and lived experiences would add nuance to the statistical trends, offering a more holistic view of leadership effectiveness.

Finally, integrating performance-based evidence such as student achievement records, discipline logs, and programme participation rates would provide objective validation of leadership impact. For example, if teacher leaders report mentoring roles and improved student behaviour, this could be corroborated by fewer disciplinary incidents and higher engagement scores. By combining these three layers quantitative profiles, qualitative testimonies, and performance data future research can present a more robust and credible account of how teacher leadership drives meaningful change in SJKT schools.

#### 4.0 Results / Findings

##### 4.1 Demographic Profile of Respondents

**Table 1: Demographic Profile of SJKT Teacher Leaders in Bangsar**

P	School Name	Role	Teaching Exp.	Subject Specialization	Other Responsibilities	Tr. Attended
1	SJKT Jalan Bangsar	Head of Department	<5 years	Tamil Language, Multiple Subjects	Panel Head, Coordinator, Mentor, ICT/Discipline	Yes (LEAD/MLT)
2	SJKT Ladang Bukit Jalil	Head of Department	<5 years	English, Multiple Subjects	Panel Head, Coordinator, Mentor	Yes (LEAD/MLT)
3	SJKT Vivekananda	Head of Department	>10 years	Bahasa Malaysia, Multiple Subjects	Panel Head, Coordinator, Mentor	Yes (LEAD/MLT)
4	SJKT Sungai Besi	Subject Panel Head	>15 years	Mathematics, Science, Multiple Subjects	Panel Head, Coordinator, Mentor, ICT/Discipline	No
5	SJKT Cheras	Subject Panel Head	>15 years	English, Multiple Subjects	Panel Head, Mentor	No
6	SJKT Thamboosamy Pillai	Headmaster	>20 years	Tamil Language, Multiple Subjects	Headmaster	No
7	SJKT Jalan San Peng	Head Of English Panel	>10 Years	English, Multiple Subjects	English teacher	Yes ( LEAD/MLT)

8	SJKT Appar	Maths Teacher	<5 years	Mathematics, Science, Multiple Subjects	Math Teacher	No
9	SJKT Kampung Pandan	BM Teacher	>15 years	English, Multiple Subjects	BM Teacher	No
10	SJKT Sentul	English Teacher	>9 years	English, Multiple Subjects	English Teacher	No

Table 1 outlines the demographic and professional profiles of ten teacher leaders from SJKT schools in the Bangsar District, showcasing a diverse range of leadership roles, teaching experience, and subject expertise. The participants include Heads of Department, Subject Panel Heads, a Headmaster, and subject-specific teachers, reflecting a layered leadership structure within the schools. Their teaching experience spans from less than five years to over two decades, representing a mix of early-career educators and seasoned professionals. This diversity contributes to a rich pool of pedagogical perspectives and leadership styles.

Subject specialization among the participants is broad, covering Tamil Language, English, Bahasa Malaysia, Mathematics, and Science, with most teachers handling multiple subjects. This multidisciplinary approach highlights the versatility required of teacher leaders in SJKT schools. Beyond classroom instruction, many participants also take on additional responsibilities such as mentoring, coordinating panels, managing ICT initiatives, and overseeing discipline. These roles demonstrate the multifaceted nature of teacher leadership, where instructional duties are balanced with administrative and developmental functions.

Leadership training participation varied across the group: four participants reported attending structured programs such as LEAD or MLT, while the remaining six had not received formal leadership development. This uneven access to training points to potential gaps in capacity building and professional support. Overall, the profiles reflect a committed and adaptable group of educators who contribute significantly to their schools' academic and operational success, though greater emphasis on equitable leadership development could further enhance their impact.

## 4.2 Key Leadership Roles

### Leadership Roles Undertaken by Teachers

Leadership Domain	Description	Number of Participants (p=10)
<b>Formal Roles</b>	Head of Department / Subject Panel Head	6
<b>Understanding of Roles</b>	Clear understanding of leadership duties	6
<b>Support for Colleagues/Students</b>	Active mentoring and guidance	6
<b>Fostering Collaboration</b>	Encourage teamwork and staff cooperation	5
<b>Initiating School Programmes</b>	Lead/contribute to school-wide initiatives	5
<b>Involvement in Decision-Making</b>	Participating in school-level decisions	5
<b>Mentorship Role</b>	Mentor less experienced colleagues	5
<b>Programme Coordination</b>	Coordinate school-wide programmes	5



Leadership Domain	Description	Number of Participants (p=10)	Table 2:
<b>Leadership Skills Highlighted</b>	Planning, communication, management	3 (open-ended)	
<b>Leadership Aspirations</b>	Desire to grow in leadership	2 (open-ended)	

The above table summarizes the leadership domains demonstrated by ten teacher leaders across SJKT schools in Bangsar, revealing a strong presence of formal leadership roles and active engagement in school development. Six participants held formal positions such as Head of Department or Subject Panel Head, indicating a significant representation of structured leadership. Most of the teacher leaders (five to six participants) showed clear understanding of their roles, actively mentored colleagues, and students, fostered collaboration, and contributed to school-wide initiatives. Their involvement in decision-making and programme coordination further highlights their integral role in shaping school culture and operations.

Despite the widespread engagement in leadership activities, fewer participants explicitly highlighted leadership skills or aspirations in open-ended responses. Only three mentioned specific skills such as planning, communication, and management, while just two expressed a desire to grow further in leadership. This suggests that while many teacher leaders are functionally involved in leadership tasks, there may be limited self-identification with leadership development or future aspirations. Strengthening reflective practices and leadership training could help bridge this gap and empower more educators to pursue formal leadership pathways.

### 4.3 Influence on Students and School Management

**Table 3: Influence of Teacher Leadership**

Area of Influence	Description	Number of Participants (p=10)
<b>Student Achievement</b>	Improved student academic outcomes	8
<b>Student Engagement</b>	Enhanced motivation and self-discipline	8
<b>School Environment</b>	Positive changes in school culture and communication	8
<b>Student Behaviour</b>	Improved behaviour and discipline	8
<b>Leadership Success Stories</b>	Shared specific programme or student success	4 (qualitative)
<b>Policy Contribution</b>	Involved in policy and academic planning	6

The table highlights the key areas of influence demonstrated by SJKT teacher leaders in Bangsar, showcasing their impact on both student development and school-wide progress. A strong majority eight out of ten participants contributed to improvements in student achievement, engagement, behaviour, and the overall school environment. This suggests that teacher leaders play a pivotal role not only in academic outcomes but also in shaping student

motivation, discipline, and the cultural tone of their schools. Their influence extends beyond the classroom, fostering a more cohesive and supportive learning atmosphere.

In addition to their direct impact on students, several teacher leaders were actively involved in broader institutional efforts. Six participants contributed to policy and academic planning, indicating their role in strategic decision-making and curriculum development. Four participants shared qualitative success stories, reflecting tangible outcomes from leadership initiatives or student progress. These insights underscore the dual role of teacher leaders—as instructional guides and as agents of systemic change whose efforts support both individual student growth and the advancement of school policies and practices.

#### 4.4. Challenges of Teacher Leadership

**Table 4: Challenges Faced by SJKT Teacher Leaders and Suggested Solutions**

<b>Challenge</b>	<b>Details</b>	<b>Suggested Solutions</b>	<b>Number of Participants (p=10)</b>
<b>Work-Life Balance</b>	Lack of time balancing teaching and leadership	Allocate dedicated leadership time; time-management training	6
<b>Lack of Tailored Training</b>	Training lacks focus on SJKT needs	Develop SJKT-specific training programmes	7
<b>Need for Mentorship</b>	Desire for structured guidance	Implement mentoring and coaching systems	8
<b>Insufficient Resources/Funding</b>	Limited resources hinder initiatives	Increase funding and resource allocation	6
<b>Lack of Recognition</b>	Contributions not formally acknowledged	Create recognition systems	6
<b>Bureaucratic Barriers</b>	Administrative delays obstruct initiatives	Streamline approval processes	5
<b>Unclear Policy Direction</b>	Lack of clear frameworks	Establish defined leadership policies	6
<b>Sustained Motivation</b>	High motivation despite challenges	Provide systemic support and affirm contributions	8

Table 4, outlines the key challenges faced by SJKT teacher leaders in Bangsar and offers practical solutions to address them. A significant number of participants (six out of ten) reported difficulties in balancing teaching duties with leadership responsibilities, pointing to the need for dedicated time and time-management support. Similarly, six participants felt their contributions were not formally recognized, and an equal number cited insufficient resources and unclear policy direction as barriers to effective leadership. These findings suggest that while teacher leaders are committed, systemic constraints such as bureaucracy, lack of tailored training, and limited institutional support can hinder their impact.

Encouragingly, eight participants expressed a strong desire for mentorship and sustained motivation despite these challenges. This highlights a resilient leadership culture that thrives on guidance and affirmation. The call for SJKT-specific training programs and streamlined administrative processes reflects a need for more contextualized and responsive leadership development. By addressing these areas through structured mentoring, increased funding, and

clearer policy frameworks schools can better empower teacher leaders to drive meaningful change and foster a more supportive, high-performing educational environment.

#### 4.5 Additional Insights

**Table 5: Open-Ended Responses**

Theme	Details	Recommendation	Number of Participants (p=10)
<b>Misalignment of Role/Expertise</b>	Assigned to lead panels outside area of specialization	Align leadership roles with subject expertise	5
<b>Lack of Administrative Support</b>	Difficulty enforcing leadership without management backing	Strengthen management support	6
<b>Insufficient Time</b>	Struggles balancing teaching and leadership responsibilities	Allocate dedicated leadership hours	6
<b>Need for Targeted Development</b>	Absence of SJKT-specific professional training	Provide tailored mentoring and coaching	7
<b>Limited Resources</b>	Inadequate materials and funding	Improve access to resources	6
<b>Lack of Policies/Recognition</b>	Ambiguous frameworks reduce motivation	Establish policies and recognition systems	6

Table 5, presents key leadership challenges faced by SJKT teacher leaders in Bangsar and offers targeted recommendations to address them. One of the most prominent issues is the misalignment of roles and expertise, with five participants assigned leadership duties outside their subject specialization. This mismatch can hinder effectiveness and morale, suggesting a need to better align leadership roles with teachers' academic strengths. Additionally, insufficient time and lack of administrative support were reported by six participants each, pointing to systemic constraints that limit leaders' ability to balance teaching with leadership responsibilities. Strengthening management backing and allocating dedicated leadership hours could significantly ease these pressures.

Other challenges include the need for targeted development, limited resources, and lack of clear policies or recognition, each affecting six to seven participants. The absence of SJKT-specific training programs and inadequate materials can stifle innovation and growth, while ambiguous frameworks and lack of formal acknowledgment may reduce motivation. Addressing these issues through tailored mentoring, improved resource access, and structured recognition systems would not only empower teacher leaders but also enhance their long-term impact on school improvement and student outcomes. Overall, the findings underscore the importance of contextualized support and strategic planning in nurturing effective leadership within SJKT schools.

## 5.0 Discussion

### 5.1 RQ1: What are the key leadership roles undertaken by teachers in SJKT schools?

The evidence demonstrates that teachers in SJKT schools perform diverse leadership roles, both formal (Head of Department, Subject Panel Head) and informal (peer mentoring,

programme coordination, ICT/discipline management). These findings align with distributed leadership theory, which emphasizes that leadership is not restricted to administrators but shared across organizational levels (Muijs et al., 2023). By mentoring colleagues, initiating school programmes, and participating in decision-making, teacher leaders act as intermediaries between policy and practice, shaping the school's strategic direction. Importantly, these roles reflect not only administrative functions but also moral leadership, as teacher leaders balance academic excellence with the preservation of Tamil cultural identity.

## **5.2 RQ2: How does teacher leadership influence student performance and school management?**

The study highlights clear evidence that teacher leadership positively affects student outcomes. Teacher leaders enhanced student achievement, motivation, discipline, and engagement, supporting a culture of accountability and collaboration. These findings echo international scholarship asserting that empowering teachers as leaders elevates instructional quality and strengthens professional learning communities (Harris and Jones, 2022; Leithwood et al., 2023). Moreover, participants reported that leadership extended beyond classrooms, influencing school-level planning, communication, and policy formulation. Such results underscore the dual impact of teacher leadership: fostering individual student growth while driving collective organizational improvement.

## **5.3 RQ3: What challenges do teacher leaders face, and how can they be addressed?**

Despite its benefits, teacher leadership in SJKT schools is constrained by systemic and contextual challenges. Teachers reported difficulties in balancing teaching with leadership duties, insufficient leadership training tailored to SJKT needs, limited resources, and lack of recognition. These challenges mirror findings in other multilingual, resource-constrained contexts (Nguyen et al., 2022). Importantly, the study revealed that teacher leaders often remained motivated despite these barriers, demonstrating resilience and commitment. Addressing these issues requires systemic reforms, including time allocation for leadership duties, targeted SJKT-specific professional development, structured mentoring and recognition systems, and streamlined administrative processes. Such interventions would not only reduce leadership fatigue but also sustain long-term school improvement.

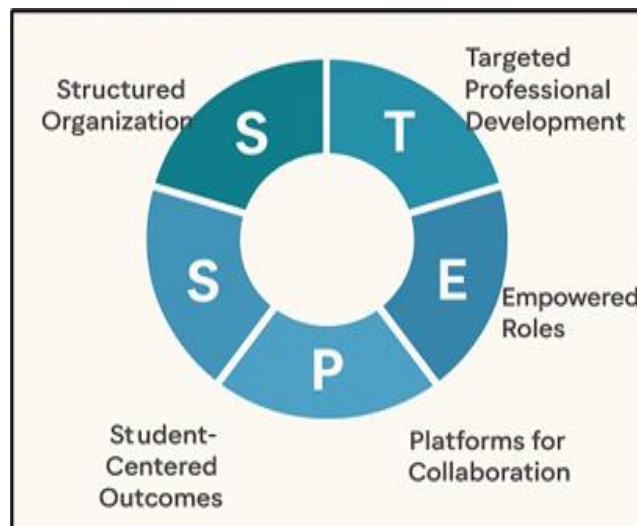
## **6.0 Recommendations**

Teacher leaders often initiate programs that integrate Tamil literature, traditional arts, and cultural celebrations into school activities practices less pronounced in national schools. They may also adopt innovative strategies to overcome limited resources, such as forging community partnerships with Tamil organizations to support student learning and cultural development. These distinctive practices demonstrate how the cultural and minority-language context adds a unique layer to leadership roles, thereby strengthening the significance of the study and underscoring its novelty within the broader field of educational leadership research.

This study shows that teacher leadership in SJKT schools is multifaceted and vital for sustainable improvement, extending beyond classroom teaching to encompass mentoring, collaboration, programme coordination, and policy shaping. Teacher leadership was found to significantly enhance student learning, engagement, and school culture, demonstrating its essential role in educational transformation. At the same time, several barriers were identified, including time constraints, limited training opportunities, inadequate resources, and lack of

recognition, all of which hinder leadership effectiveness. To address these challenges, the proposed S.T.E.P.S. Model provides a structured framework for strengthening teacher leadership. The model emphasizes as stated below.

**Figure 3: The S.T.E.P.S. Model for Teacher Leadership**



The diagram above illustrates the S.T.E.P.S. model, a framework designed to enhance teacher leadership and school improvement. It highlights five key components. They are Structured Organization, Targeted Professional Development, Empowered Roles, Platforms for Collaboration, and Student-Centered Outcomes. Together, these elements emphasize a holistic approach to strengthening leadership capacity, fostering collaboration, and ultimately improving student achievement.

The **Supportive Environment** refers to building a culture of trust, collaboration, and encouragement among teachers, students, and the school community. In this context, teacher leaders play an important role in creating safe spaces for sharing ideas and offering guidance. For example, in an SJKT, a teacher leader may organize weekly peer-support clinics where colleagues co-plan lessons and exchange strategies for integrating Tamil cultural content into the national curriculum. This helps reduce isolation among teachers and strengthens teamwork.

Besides, **Transformational Leadership** means inspiring and motivating colleagues through vision, role-modelling, and innovative practices. Teacher leaders demonstrate this by setting high expectations and encouraging creativity in teaching. For instance, a teacher leader might design a project that combines Tamil proverbs with English lessons, showing how culture can be preserved while meeting curriculum goals. This not only motivates staff but also encourages them to adopt more innovative teaching methods.

Apart from that, **Empowerment** is about enabling teachers, pupils, and even parents to take part in decision-making and school activities. When teachers feel trusted and valued, they are more committed to the school's vision. In SJKTs, empowerment may take the form of involving parents and Tamil community associations in organizing cultural programs or literacy workshops. By sharing responsibilities, teacher leaders build ownership and ensure that every stakeholder contributes to student success.

Furthermore, **Professional Development** highlights the need for continuous learning and skill enhancement among teachers. Teacher leaders take initiative to organize in-house training, connect with external experts, and promote reflective practices. For example, a teacher leader could introduce training in digital storytelling, helping teachers use technology to make lessons engaging while preserving Tamil cultural narratives. Such initiatives raise teaching standards and promote lifelong learning.

Finally, **Sustainability** refers to ensuring that leadership practices and cultural-preservation efforts continue consistently over time. Teacher leaders must design systems that can endure beyond individual efforts, making initiatives part of the school's identity. For example, creating a bilingual Tamil-English resource bank and embedding it into school policy ensures that cultural literacy remains a long-term priority. This helps guarantee that leadership practices and cultural values are passed on to future generations.

In conclusion, the S.T.E.P.S. model for teacher leadership provides a comprehensive and sustainable framework that strengthens both professional practice and cultural preservation in schools. By integrating supportive environments, transformational leadership, empowerment, professional development, and sustainability, teacher leaders can cultivate a culture of trust, collaboration, and innovation that benefits all stakeholders. When applied effectively, this model not only enhances teacher capacity and school improvement but also ensures that student outcomes and cultural values remain at the heart of education, making it a truly successful and impactful model.

## 7.0 Conclusion And Implications

This study investigated the leadership roles, influence, challenges, and aspirations of teacher leaders in SJKT schools in the Bangsar District. The findings revealed that teacher leaders hold formal positions such as Heads of Department and Subject Panel Heads, while also engaging in mentorship, programme coordination, fostering collaboration, and contributing to policy decisions. Their leadership positively influenced student achievement, engagement, behavior, and school culture, reinforcing their role as key agents of academic and institutional improvement. Nonetheless, challenges such as role misalignment, limited resources, lack of tailored training, insufficient recognition, and bureaucratic barriers were found to constrain their leadership effectiveness, despite their demonstrated commitment and resilience.

The implications of these findings highlight the need for systemic reforms to strengthen teacher leadership in SJKT schools. Clear leadership policies and pathways should be established to reduce role ambiguity and align responsibilities with subject expertise. Professional development initiatives tailored to the SJKT context, supported by structured mentorship and coaching, would build leadership capacity and ensure succession planning. School management practices must provide stronger administrative support, allocate dedicated leadership hours, and streamline approval processes to help leaders balance teaching with leadership duties. In addition, equitable resource allocation and formal recognition mechanisms are critical for sustaining motivation and affirming contributions.

Overall, the study suggests that empowering teacher leaders requires an integrated approach that combines policy clarity, contextualized training, administrative backing, resource provision, and recognition systems. Addressing these areas will enable teacher leaders to maximize their impact as effective change agents, ultimately enhancing both student learning and institutional development in SJKT schools. Future studies should expand on these insights

through longitudinal, comparative, and intervention-based studies, ensuring that teacher leadership continues to act as a catalyst for educational transformation in Malaysia and beyond.

This study has highlighted the vital role of teacher leadership in driving educational transformation within SJKT schools. Framed by transformational leadership theory, the findings reveal that teacher leaders not only guide instructional practices but also act as cultural mediators, motivators, and catalysts of change. The introduction of the **S.T.E.P.S. model** Structured Organization, Targeted Professional Development, Empowered Roles, Platforms for Collaboration, and Student-Centred Outcomes provide a practical framework to strengthen leadership capacity while ensuring that initiatives remain focused on student success and cultural inclusivity.

The implications of this study are significant for school leaders, policymakers, and education stakeholders. Empowering teacher leaders through structured support, collaborative platforms, and clearly defined roles can elevate school culture, improve instructional practices, and advance equity in resource-constrained contexts. In line with the aspirations of the Malaysian Education Blueprint, such efforts can help SJKT schools remain relevant and impactful in a diverse and evolving educational landscape.

Looking ahead, further research is needed to deepen and broaden these insights. **Future directions include longitudinal studies to examine long-term effects of teacher leadership, pilot testing of the S.T.E.P.S. model in practice, and comparative studies across SJKT, SJKC, and SK schools.** Mixed-methods approaches that combine qualitative narratives with quantitative evidence would offer a more holistic understanding, while cross-cultural and international comparisons could situate SJKT schools within a global conversation on minority-language education. By pursuing these avenues, teacher leadership can be more strategically developed, sustained, and scaled continuing to serve as a powerful driver of transformational change.

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## **ADVANCING LEADERSHIP IN UNDERSERVED SCHOOLS: SBATA AS A CAPACITY-BUILDING APPROACH IN SABAH**

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**Abstract:** *In light of the increasingly complex demands of contemporary education, systematic organizational management and leadership must be cultivated among school leaders. This study aims to apply and translate the School-Based Management and Teacher Autonomy (SBATA) model, which encompasses the elements of support, guidance, practice, action, and adaptation. The SBATA model was employed to identify leadership transformation among school leaders in remote schools and to explore capacity development that aligns with school management contexts and teacher autonomy. The study focused on school leaders serving in island and rural schools, with a total sample of 137 participants from Sabah, Malaysia. The findings indicate that leadership transformation among school leaders in remote schools is highly relevant and contributes positively to improving school performance. Furthermore, the SBATA approach provides schools with autonomy to manage resources and make context-specific decisions, while teacher autonomy empowers educators to design instruction and assessment based on students' needs. This study offers meaningful contributions to the education system by promoting systematic leadership, stimulating creative thinking, and serving as a key reference for stakeholders across different levels of education.*

**Keywords:** *Leadership, Rural School, SBATA, Capacity Development*

### **Introduction**

In alignment with the Malaysia Education Blueprint (PPPM 2013–2025), effective school leadership is paramount for fostering school improvement, a clear institutional vision, a positive school climate, and teacher empowerment (Kementerian Pendidikan Malaysia [KPM], 2013). This imperative extends beyond simple administrative succession; it necessitates a fundamental transformation in the leadership approaches, values, and culture. Such changes must be contextually relevant, widely accepted, and pragmatically implementable to drive sustained progress (Dexter et al., 2020).

School leadership is widely recognized as the pivotal force shaping the trajectory and efficacy of an educational institution. Leaders serve as both instructional administrators and catalysts for organizational change, cultivating a professional culture and building teacher capacity. Hallinger (2003) emphasizes that school quality is inextricably linked to the leader's ability to enhance teaching and learning outcomes. Within the Malaysian educational landscape, there is a pressing need for a new generation of dynamic and innovative leaders to fulfill the aspirations of the PPPM 2013–2025 (KPM, 2013). Research consistently highlights that leaders in rural and remote regions contend with significant systemic challenges, including chronic shortages of trained educators, limited access to resources, and inconsistent community engagement (Roslan et al., 2018). Schools on islands face even greater adversity due to their geographical isolation, unique topographical challenges, and acute deficiencies in infrastructure, staffing, and community support (Sainah et al., 2020). Consequently, strategic leadership succession and the cultivation of transformative leaders are critical for ensuring long-term institutional excellence.

School-Based Management and Teacher Autonomy (SBATA) is an approach with considerable potential to foster leadership capacity development. This model integrates two critical principles: school-based management (SBM), which delegates to schools the autonomy to manage resources and make context-specific decisions, and teacher autonomy, which empowers educators to design instruction and assessment aligned with student needs (Jusoh & Abdullah, 2021). While SBATA is often associated with classroom-level assessment, its core tenets of leader empowerment, accountability, and innovation have direct and significant implications for the professional development of school leaders.

## **2. Problem Statement**

The complex challenges faced by school leaders in geographically remote and island schools necessitate a high degree of adaptability and strategic acumen to guide school development and direction. According to Roslan, Hamzah, and Nor (2018), leadership in these isolated contexts confronts a distinct reality compared to their urban counterparts. Systemic issues such as infrastructural deficiencies, limited access to educational resources, logistical difficulties, and a scarcity of high-quality teaching staff directly impact leadership effectiveness.

In Sabah, for example, the challenging geography compels school leaders to be exceptionally creative and resilient in problem-solving (Rahman, 2020). Furthermore, research by Ismail and Abdullah (2019) reveals that principals and headmasters in rural areas often undertake multiple roles simultaneously, encompassing administration, instruction, and community relations. In essence, rural school leaders are called upon to be more than just administrators. This is underscored by Rahman (2020), who found that strong interpersonal skills are often a key determinant of success for leaders in remote schools. Furthermore, effective leadership in these environments requires a long-term strategic perspective. Jaafar et al. (2022) emphasize the importance of strategic leadership grounded in a clear vision, foresight, and the wisdom to adapt to change. Both perspectives illustrate that leadership in rural schools is not merely about managing daily routines but is a journey of building hope, leading change, and ensuring the sustainability of education.

## **3. Objectives**

- a. To identify the leadership changes in remote schools.
- b. To identify the leadership changes of school leaders through the SBATA approach (School-Based Management and Teacher Autonomy) and its support element.

- c. To identify the leadership changes of school leaders through the SBATA approach and its mentoring element.
- d. To identify the leadership changes of school leaders through the SBATA approach and its practice element.
- e. To identify the leadership changes of school leaders through the SBATA approach and its action element.
- f. To identify the leadership changes of school leaders through the SBATA approach and its adaptation element.
- g. To identify the capacity building of school leaders in remote schools.

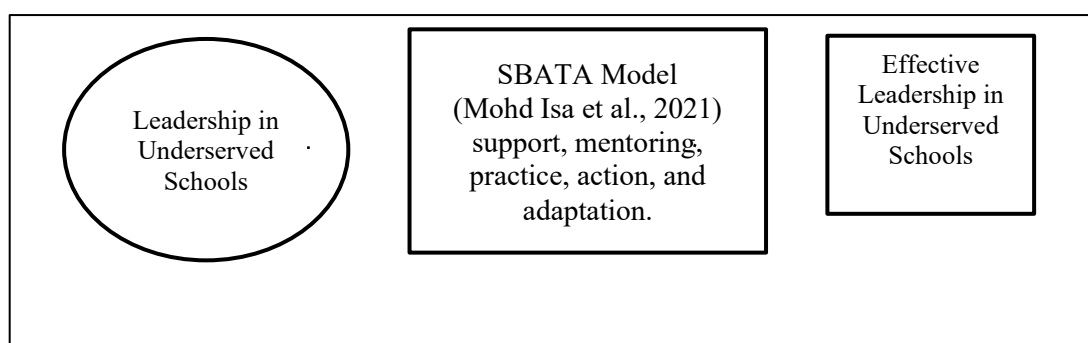
#### 4. Research Question

- a. What are the leadership changes in remote school leaders?
- b. What are the leadership changes for school leaders through the SBATA approach's support element?
- c. What are the leadership changes for school leaders through the SBATA approach's mentoring element?
- d. What are the leadership changes for school leaders through the SBATA approach's practice element?
- e. What are the leadership changes for school leaders through the SBATA approach's action element?
- f. What are the leadership changes for school leaders through the SBATA approach's adaptation element?
- g. What is the capacity development of school leaders in remote schools?

#### 5. Research Framework

The conceptual framework, illustrated in Figure 1 , elucidates the transformation of school leadership within remote educational settings. This study is guided by the School-Based Management and Teacher Autonomy (SBATA) model. Drawing upon the SBATA approach, leadership change at the school level is analyzed through five key elements: support, mentoring, practice, action, and adaptation.

**Figure 1: Research Framework**



## Literature Review

This literature review examines three crucial aspects of this study: leadership changes in island school leaders, the SBATA model, and the professional capacity development of school leaders.

### 6.1 School Leadership Transformation

Every leader is responsible for managing their organization to realize the fifth shift in the Malaysian Education Blueprint (PPPM 2013-2025), which aims to place high-performing leaders in every school, regardless of its location. In this regard, school leadership is seen as the backbone of a school's excellence, particularly in ensuring the goals of the national education philosophy are achieved (Dexter et al., 2020).

The transformation of leadership in rural and island schools must be viewed positively through the lens of human experience, where leaders face emotional, social, and professional challenges with confidence. International studies indicate that principal turnover rates in remote areas are higher than in urban settings. Despite the myriad of obstacles including work pressure, isolation, lack of basic facilities, and family needs (Bartanen & Grissom, 2019; Finnigan & Daly, 2021) - leaders must cultivate a strong spirit to drive change. This has significant implications, as resilient and competitive leadership can effectively realize a school's vision and strengthen relationships with the community.

### 6.2 School-Based Management and Teacher Autonomy (SBATA) Model

The School-Based Management and Teacher Autonomy (SBATA) model, proposed by Mohd Isa et al. (2021), is a conceptual framework designed to enhance academic performance by leveraging increased teacher autonomy, supported by systemic improvements in school-based management (SBM).

Visually, the model is represented as a concentric target hierarchy, with the core element (the primary target zone) symbolizing student achievement. The second concentric ring focuses on the two crucial, multidimensional aspects of teacher autonomy: curriculum autonomy and general autonomy. The outermost perimeter integrates the key components of school-based management - leadership, planning, resource optimization, and continuous evaluation mechanisms -/which function as the primary drivers influencing a school's internal dynamics, particularly in building the capacity for teacher autonomy.

In addition, aspects of human resource management, including demographics (gender, age), professional capital (teaching experience, academic qualifications), and institutional context (school location), need to be managed through a systematic approach that emphasizes organizational professionalism and integrity. This approach aims to produce a cohort of educators with the characteristics of responsible autonomy, high adaptability, and superior self-efficacy. Accordingly, this study was conducted to implement the SBATA model in the context of remote schools through five key elements: support, mentoring, practice, action, and adaptation.

### **6.3 Developing Leader Capacity**

Developing the capacity of school leaders is not merely about technical training; it is a profound process of strengthening an individual's ability to become a driver of change, a pedagogical mentor, and a social bridge between the school and its community. An effective leader must be adept at managing resources and capable of bringing a learning vision to life, inspiring teachers, and maintaining legitimacy in the eyes of the community (Grissom, Egalite, & Lindsay, 2021). Previous research emphasizes that leader capacity development must be place-based, meaning it should be tailored to the local context (Nabobo-Baba, 2018). This aligns with the concept of instructional leadership, which has a direct link to leader development because it directly impacts the classroom. Grissom et al. (2021) assert that leaders who focus on instruction are better able to improve teacher effectiveness and student achievement. Therefore, there is a clear need for capacity development that is more professionally oriented and relationship-based, utilizing strategies like coaching, collaboration, and instructional practices within the classroom.

Furthermore, the most effective forms of professional development are those that are continuous, contextual, and work-embedded (Pashmforoosh, Irby, Lara-Alecio, & Tong, 2023; Muhayimana, Schares, & Ruxton, 2023). Professional Learning Communities (PLCs) can effectively assist leaders and teachers in sharing strategies, building emotional support, and engaging in collaborative reflection. Ansawi and Pang (2024) have shown that PLCs and Lesson Study are significant in schools, reinforcing the idea that professional collaboration can enhance the capacity of both teachers and school leaders.

## **6. Research Methodology**

### **7.1 Methodology**

This study delineates the research design, population and sampling strategy, instrumentation, and the methods employed for data collection and analysis.

### **7.2 Research Design**

This investigation employed a quantitative methodology utilizing a survey research design. The survey design was selected to provide a quantitative description of leadership transformation, the SBATA approach, and the capacity building of school leaders by examining a defined population. A structured questionnaire served as the primary instrument for data collection.

### **7.3. Population and Sampling**

The target population for this research comprised all school leaders serving in island and rural schools within the state of Sabah. The study encompassed all 24 District Education Offices (PPD) in Sabah: Kota Kinabalu, Penampang, Tuaran, Kota Belud, Pitas, Kota Marudu, Kudat, Ranau, Telupid-Tongod, Beluran, Kinabatangan, Sandakan, Lahad Datu, Tawau, Semporna, Kunak, Tenom, Pensiangan-Nabawan, Keningau, Tambunan, Sipitang, Beaufort, Kuala Penyu, and Papar.

The total population of school leaders in island schools was 75, while the population in rural schools was 286. Given the small and finite size of the target groups, a census approach was adopted, wherein the entire population of 361 leaders was included in the study. This comprehensive inclusion eliminates sampling error and enhances the generalizability of the findings to this specific cohort.

#### 7.4 Research Instrument

The primary instrument for this study was a structured questionnaire adapted from the School-Based Management and Teacher Autonomy (SBATA) framework. This instrument was central to measuring leadership transformation among school leaders in Sabah's remote schools.

The questionnaire was segmented into four distinct sections:

- Part A: Respondent Demographics
- Part B: Leadership Transformation of Remote School Leaders (6 items)
- Part C: The SBATA Approach, encompassing five core elements: support, guidance, practice, action, and adaptation (25 items).
- Part D: Capacity Building of School Leaders (9 items).

All items were measured using a 5-point Likert scale, with responses ranging from (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Setuju, to (5) Strongly Agree. To ensure the instrument's robustness, content validity was established through a rigorous review by a panel of subject matter experts.

#### 7.5 Data Collection

Data were primarily collected through the administration of the aforementioned questionnaire. This primary data collection was supplemented by a secondary data review, which involved an extensive exploration of relevant literature from online academic databases, peer-reviewed journals, previous studies, and scholarly books to contextualize the findings.

#### 7.6 Data Analysis

All quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 29.0. The analysis focused on descriptive statistics, with findings presented in tabular format to display the mean scores for each variable: leadership transformation, the five elements of the SBATA approach (support, guidance, practice, action, and adaptation), and leader capacity building. The interpretation of these mean scores was guided by the framework established by Zulkifli (2012), as outlined in Table 1.2.

**Table 1.1: Mean Score Interpretation**

Mean Score	Mean Score Interpretation
1.00 – 2.49	Low
2.50 – 3.79	Intermediate
3.80 – 5.00	High

Source: Zulkifli (2012)

### 7. Findings

This section addresses the research objective concerning the leadership transformation of leaders in remote and island schools, and how these changes contribute to improving the quality of organizational management and leadership.

#### What are the leadership changes in remote school leaders?

The findings regarding the leadership transformation of leaders in remote and challenged schools are presented in Table 1.2.

**Table 1.2: Leadership Transformation of Leaders in Underserved Schools**

Item	Mean	Standard Deviation	Score Interpretation
I understand the goals and direction of the leadership changes implemented at the school.	4.65	0.88	High
I clearly communicate the leadership changes to all parties.	4.47	0.90	High
I see these leadership changes as a positive step for the school's development.	4.77	0.87	High
I systematically plan leadership changes with the school management team.	4.68	0.89	High
I am involved in the process of implementing leadership changes at the school.	4.74	0.88	High
I support the resources provided for leadership changes at the school.	4.74	0.88	High
Overall mean score	4.67	0.88	High

Based on Table 1.2, the overall mean score for leadership transformation of school leaders in remote schools is at a high level ( $M = 4.67$ ;  $SD = 0.88$ ). This indicates that the analysis of each item under leadership transformation among school leaders in remote schools demonstrates high mean values. The item “*I view this leadership transformation as a positive step for school development*” recorded the highest mean score ( $M = 4.77$ ;  $SD = 0.87$ ), while the item “*I communicate leadership transformation clearly to all stakeholders*” obtained the lowest mean score ( $M = 4.47$ ;  $SD = 0.90$ ). These findings suggest that leadership transformation among school leaders in remote schools, namely island and rural schools, contributes positively to sustaining organizational excellence.

### **What are the leadership transformations of school leaders through the SBATA approach under the element of support?**

The findings of the study on leadership transformation of school leaders through the SBATA approach under the element of support are presented in Table 1.3.

**Table 1.3: Leadership transformations of school leaders through the SBATA approach under the element of support**

Item	Mean	Standard Deviation	Score Interpretation
I receive continuous support from the school community to lead leadership changes at the school.	3.80	1.07	High
I provide professional support to my colleagues in leading leadership changes at the school.	4.93	0.84	High
I have a clear support system for leading leadership changes at the school.	5.12	0.79	High
I enhance the culture of support for leading leadership changes at the school.	4.69	0.88	High
I feel comfortable getting support for leading leadership changes at the school.	4.60	0.89	High
Overall mean score	4.63	0.89	High

Based on Table 1.3, the overall mean score for leadership transformation of school leaders through the SBATA approach under the element of support is at a high level ( $M = 4.63$ ;  $SD = 0.89$ ). Accordingly, the analysis of each item under this element demonstrates high mean values. The item “*I obtain a clear support system to lead leadership transformation in schools*” recorded the highest mean score ( $M = 5.12$ ;  $SD = 0.79$ ), while the item “*I receive continuous support from school members to lead leadership transformation in schools*” obtained the lowest mean score ( $M = 3.80$ ;  $SD = 1.07$ ). These findings indicate that the element of support within the SBATA approach is highly relevant to the current educational needs that influence leadership transformation among school leaders in island and rural schools.

### **What are the leadership transformations of school leaders through the SBATA approach under the element of guidance?**

The findings of the study on leadership transformation of school leaders through the SBATA approach under the element of guidance are presented in Table 1.4.

**Table 1.4: Leadership transformations of school leaders through the SBATA approach under the element of guidance**

Item	Mean	Standard Deviation	Score Interpretation
I receive continuous mentoring to lead leadership changes at the school.	4.25	0.92	High
I conduct mentoring sessions to address challenges in leading leadership changes at the school.	4.39	0.91	High
I receive constructive mentoring feedback to lead leadership changes at the school.	4.33	0.91	High
I have easy access to mentoring programs for leading leadership changes at the school.	4.85	0.87	High



I receive relevant mentoring that meets the needs of leading leadership changes at the school.	5.18	0.84	High
Overall mean score	4.60	0.89	High

Based on Table 1.4, the overall mean score for leadership transformation of school leaders through the SBATA approach under the element of guidance is at a high level ( $M = 4.60$ ;  $SD = 0.89$ ). The analysis of each item within this element demonstrates high mean values. The item *"I receive guidance that is relevant to my needs in leading leadership transformation in schools"* recorded the highest mean score ( $M = 5.18$ ;  $SD = 0.84$ ), whereas the item *"I receive continuous guidance to lead leadership transformation in schools"* obtained the lowest mean score ( $M = 4.25$ ;  $SD = 0.92$ ). These findings indicate that the element of guidance within the SBATA approach serves as the backbone of excellence in leadership transformation among school leaders in island and rural schools.

### What is the leadership of school leaders through the SBATA approach under the element of practice?

The findings of the study on leadership transformation of school leaders through the SBATA approach under the element of practice are presented in Table 1.5.

**Table 1.5: Leadership of school leaders through the SBATA approach under the element of practice**

Item	Mean	Standard Deviation	Score Interpretation
I have opportunities to practice leadership in leading changes at the school.	4.54	0.89	High
I establish best practices in leading leadership changes at the school.	4.49	0.90	High
I encourage innovative leadership practices in leading leadership changes at the school.	4.49	0.90	High
I actively seek opportunities for leadership practices in leading leadership changes at the school.	4.30	0.91	High
I see that leadership practices can foster positive change in leading leadership changes at the school.	4.63	0.87	High
Overall mean score	4.49	0.89	High

Based on Table 1.5, the overall mean score for the practice element of the SBATA approach in fostering leadership transformation was high ( $M = 4.49$ ,  $SD = 0.89$ ). A detailed analysis of the items within this element revealed consistently high mean scores. The item, *"I see that leadership practice can enhance positive change in spearheading leadership transformation at school,"* recorded the highest mean score ( $M = 4.63$ ,  $SD = 0.87$ ). Conversely, the item with the lowest mean score was, *"I actively seek opportunities for leadership practice in spearheading leadership transformation at school"* ( $M = 4.30$ ,  $SD = 0.91$ ). These findings indicate that the practice element within the SBATA approach is a significant factor in driving positive transformational leadership within island and rural schools.

### What are the leadership transformations of school leaders through the SBATA approach under the element of action?

The findings of the study on leadership transformation of school leaders through the SBATA approach under the element of action are presented in Table 1.6.

**Table 1.6: Leadership transformations of school leaders through the SBATA approach under the element of action**

Item	Mean	Standard Deviation	Score Interpretation
I am free to take proactive action to address issues in leading leadership changes at the school.	4.23	0.92	High
I am assisted by the school management team in taking action to lead leadership changes at the school.	4.55	0.89	High
I am confident in taking appropriate action to lead leadership changes at the school.	4.55	0.89	High
I provide an explanation of the actions taken in leading leadership changes at the school.	4.56	0.89	High
I provide feedback on the actions taken in leading leadership changes at the school.	4.54	0.89	High
Overall mean score	4.48	0.90	High

Based on Table 1.6, the overall mean score for the action element of the SBATA approach in driving leadership transformation was high ( $M = 4.48$ ,  $SD = 0.90$ ). An item-level analysis revealed consistently high mean scores across the construct. The item, *"I provide explanations for the actions taken in spearheading leadership transformation at school,"* recorded the highest mean score ( $M = 4.56$ ,  $SD = 0.89$ ). In contrast, the item, *"I am free to take proactive action to address issues in spearheading leadership transformation at school,"* yielded the lowest mean score ( $M = 4.23$ ,  $SD = 0.92$ ). This finding indicates that the action element within the SBATA framework is instrumental in bolstering the confidence of leaders to enact leadership transformation in island and rural schools.

### What are the leadership transformations of school leaders through the SBATA approach under the element of adaptation?

The findings of the study on leadership transformation of school leaders through the SBATA approach under the element of adaptation are presented in Table 1.7.

**Table 1.7: Leadership transformations of school leaders through the SBATA approach under the element of adaptation**

Item	Mean	Standard Deviation	Score Interpretation
I am capable of adapting the importance of organizational management in leadership changes at the school.	4.42	0.90	High
I am able to adapt leadership change strategies according to the school's needs.	4.45	0.90	High
I adapt to new situations to enhance my capabilities in leading leadership changes at the school.	4.44	0.90	High
I adapt opportunities to improve leadership changes at the school.	4.52	0.89	High
I adapt an innovative culture to new challenges in leading leadership changes at the school.	4.33	0.91	High
Overall mean score	4.43	0.90	High

As presented in Table 1.7, the overall mean score for the adaptation element of the SBATA approach in fostering leadership transformation was high ( $M = 4.43$ ,  $SD = 0.90$ ). An item-level analysis demonstrated consistently high mean scores. The item, "*I adapt to opportunities to enhance leadership transformation at school,*" recorded the highest mean score ( $M = 4.52$ ,  $SD = 0.89$ ). Conversely, the item, "*I adapt a culture of innovation to new challenges in leadership transformation at school,*" yielded the lowest mean score ( $M = 4.33$ ,  $SD = 0.91$ ). This finding indicates that the adaptation element within the SBATA framework provides the scope and opportunity for school leaders to consolidate and strengthen leadership transformation in island and rural schools.

### What is the capacity development of school leaders in underserved schools?

The findings for the capacity development of school leaders in underserved schools are presented in Table 1.8.

**Table 1.8: Capacity Development of School Leaders in Underserved Schools**

Item	Mean	Standard Deviation	Score Interpretation
I possess the skills to make decisions in spearheading leadership transformation at school.	4.33	0.91	High
I have knowledge of current educational policies in spearheading leadership transformation at school.	4.24	0.92	High
I am more confident in managing conflict while spearheading leadership transformation at school.	4.39	0.91	High
I have the ability to lead the school community in spearheading leadership transformation	4.44	0.90	High
I am more authoritative in executing my role to spearhead leadership transformation at school.	4.35	0.91	High

I am capable of planning more effective initiatives to spearhead leadership transformation at school.	4.36	0.91	High
I am more resilient in facing pressure while spearheading leadership transformation at school	4.35	0.91	High
I build stronger collaborative relationships to spearhead leadership transformation at school.	4.54	0.89	High
I am prepared to assume future responsibilities in spearheading leadership transformation at school.	4.63	0.87	High
Overall mean score	4.40	0.91	High

Table 1.8, illustrates that the overall mean score for school leaders' capacity development is at a high level ( $M = 4.40$ ;  $SD = 0.91$ ). The analysis of each item contained within the domain of school leaders' capacity development reveals consistently high mean values. The item "*I am prepared to assume future responsibilities in leading leadership transformation in schools*" recorded the highest mean score ( $M = 4.63$ ;  $SD = 0.87$ ), while the item "*I possess knowledge of current educational policies in leading leadership transformation in schools*" showed the lowest mean score ( $M = 4.24$ ;  $SD = 0.92$ ). These findings indicate that capacity development among school leaders in the studied context contributes positively toward realizing efficient and effective leadership transformation.

## 8. Discussion and Findings

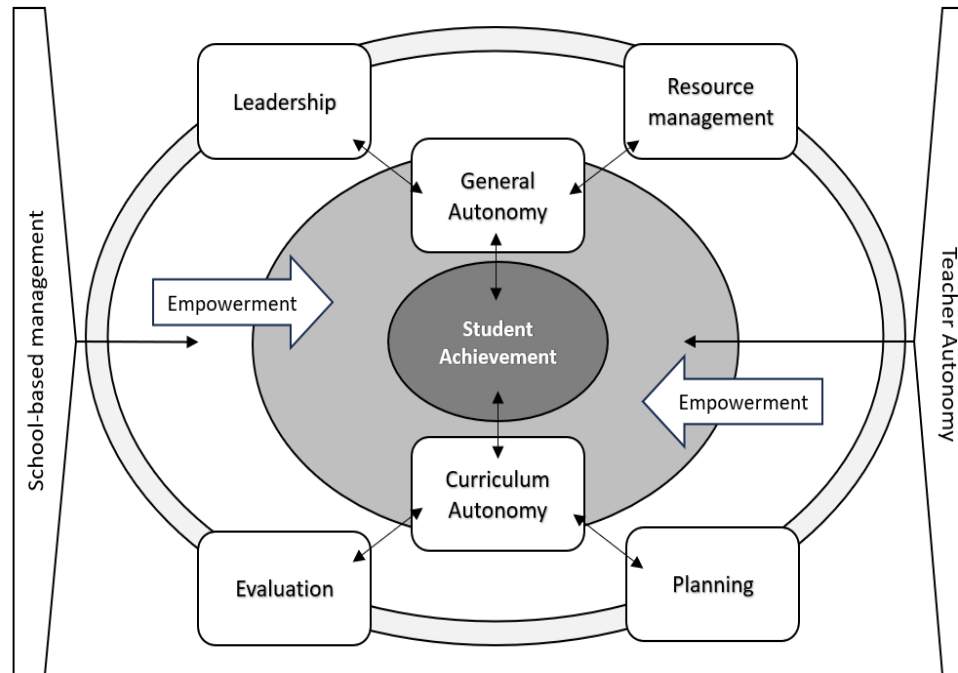
The findings of this study indicate that leadership transformation within remote island and rural schools has a significant positive impact on organizational excellence. To achieve this transformation, it is imperative for school leaders to emphasize several critical aspects: a clear understanding of institutional goals and strategic direction, transparent and positive communication, strategic planning, and the active engagement and allocation of resources. In this context, school leaders are fundamentally responsible for steering their organizations toward achieving the objectives outlined in the fifth shift of the Malaysian Education Blueprint (MEB) 2013-2025 (MOE, 2013). Concurrently, they must ensure the principles of the National Philosophy of Education are fully realized (Dexter et al., 2020). The development of robust and effective leadership is, therefore, a critical determinant with profound implications for organizational achievement.

From the perspective of the SBATA approach, leadership transformation among school leaders can be understood through the elements of support, guidance, practice, action, and adaptation. The support element emphasizes continuous and professional assistance, a well-defined support system, a supportive culture, and a sense of assurance in receiving support, all of which are essential in realizing competitive leadership transformation. Furthermore, the element of guidance reflects the importance of continuous mentoring, structured sessions, constructive feedback, access to programs, and relevant coaching as the core of implementing leadership transformation in island and rural schools. In addition, the element of practice underscores the provision of opportunities to apply leadership practices, establish best practices, foster innovative practices, seek new opportunities, and enhance positive changes in driving leadership transformation.

The element of action emphasizes proactive measures, confidence, clarity, and constructive feedback in steering leadership transformation among school leaders. Meanwhile, the element of adaptation involves the ability to integrate managerial priorities, adapt strategies, respond to new situations, seize opportunities, and foster an innovative culture to enhance leadership

transformation capacity. Thus, the elements embedded within the SBATA approach represent a potential framework that supports leadership transformation by integrating school-based management (SBM), which grants schools the autonomy to manage resources and make context-specific decisions, along with teacher autonomy (Jusoh & Abdullah, 2021).

**Figure 2: The Impact of SBATA**



### 9.1 Leader Capacity Building

Furthermore, the capacity building of school leaders necessitates the cultivation of a specific skill set. This includes proficiency in decision-making, a comprehensive knowledge of educational policies, confidence in conflict management, and the capability to lead with authority. Leaders must also be adept at planning strategic initiatives, demonstrate high levels of resilience, foster collaborative relationships, and exhibit unwavering accountability. These competencies are critical for spearheading leadership transformation that is contextually adapted to the school's unique location. This aligns with the research by Grissom et al. (2021), which underscores the need for leadership development programs oriented toward professional relationships, such as coaching, collaborative networks, and instructional best practices.

### 9.2 Conclusion and Implications

In summary, the transformation of leadership in remote schools hinges on the cultivation of strategic acumen and the ability to navigate change with creativity and a competitive edge, particularly in an environment fraught with uncertainty. The capacity of a leader to adapt to evolving circumstances is the cornerstone of sustainable leadership in these challenging contexts. Within the SBATA framework—through the implementation with elements of support, guidance, practice, action, and adaptation that are crucial in transformational

leadership, it is paramount that school leaders judiciously leverage their decision-making autonomy without abrogating their accountability. Leaders must optimize their freedom to make decisions within the constraints of limited resources, while simultaneously remaining accountable to educational authorities.

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# BRIDGING REMEDIAL LITERACY THROUGH OUTDOOR EXPERIENTIAL LEARNING: A COACHING-BASED APPROACH FOR EMPOWERING REMEDIAL EDUCATION STUDENTS AND TEACHERS IN KINTA UTARA, PERAK

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**Abstract:** *One of the cornerstones of Malaysia's national initiatives in ensuring literacy equity for all is Remedial Education. However, a persistent gap remains between remedial and non-remedial learners due to rigid, classroom-bound instructional strategies and limited professional development support for remedial teachers. This paper explores the impact of outdoor learning approaches which are guided through sustained coaching and mentoring with the main intention of transforming both teacher practice and students' outcome. The intervention was implemented over a period of six-month at an all-girls primary school in Ipoh Perak. It involves a remedial teacher and 10 Year 2 students. The coaching-based intervention leveraged on the school's interactive surroundings which include a mini zoo, learning gardens and thematic learning corners which are used as alternative teaching and learning platforms. The coaching cycle draws on Jim Knight's Impact Cycle where the coaching phases include co-designing lessons, integrating higher order thinking skills and developing adaptive teaching materials and reflective pedagogical diary. In support of the national digital education policy, digital tools such as QR codes for self-access study, a curated digital repository of teaching resources and digital reflective logs were proposed and integrated. Findings revealed improvements in students' engagement, reading confidence and task persistence. The teacher's instructional creativity, planning depth and learner-centred pedagogy also indicate marked growth. The intervention idea was expanded and peaked into a district level programme, PiTSTOP, involving 444 remedial students in Kinta Utara, hence validating the intervention's novelty.*

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**Keywords:** *Remedial Education, Coaching and Mentoring, Literacy, Outdoor Learning*

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## Introduction

Remedial education was established to serve as an essential intervention to support students with basic literacy and numeracy difficulties hence ensuring equity in learning opportunities (Schwartz, 2012). Without timely intervention, these students are at risk of academic disengagement and long-term learning gaps. Despite playing a pivotal role in providing the students with the opportunity to reengage with mainstream education, several challenges were found to hamper the effectiveness of the programme. To illustrate, limited teaching resources, insufficient professional development courses (Garcia & Fernandez, 2021) and heavy workloads burden (Rahman, 2023 & Nurul Hafiza et. al., 2017) in addition to societal stigma (Sulaiman, 2024) and limitation to the number of remedial enrolments per class (KPM, 2021). These conditions emphasise the urgent need for innovative pedagogies and teacher support system to surmount these entrenched obstacles.

Notwithstanding the positive expansion of teaching styles to being more interactive and student-centred, conventional teacher-centred methods remain dominant in many Malaysian classrooms. Yap, Neo & Neo (2013) for example, report that even in higher education settings, traditional teaching approaches remain common highlighting the need for more learner-centred practices using multimedia and outcome-based strategies. While teacher-centred teaching style might be systematic, it may not effectively benefit students who require interactive, contextual and meaningful learning experience (Dunbar & Yadar, 2022). This is where coaching becomes a pivotal strategy. In the context of remedial education in Malaysia, coaching may serve as a valuable approach (Salleh et.al., 2017) for supporting teachers to transit beyond conventional teaching routines toward student-centred strategies such as outdoor experiential learning (Md. Taff & Mohd Yaakob, 2010). By situating coaching as a source of support and reference as well as a catalyst of change, this study aims to explore how coaching can empower remedial teachers to navigate challenges, transform their pedagogy and ultimately improve literacy outcomes for remedial students in Kinta Utara, Perak.

This paper addresses this gap by implementing and examining the impact of 6-month coaching-based outdoor learning intervention with a Year 2 remedial class consisting of 10 students in an all-girls primary school in Ipoh, Perak. The intervention sought to answer the following research questions:

1. how does a coaching-supported outdoor learning approach affect remedial students' engagement, reading confidence and task persistence?
2. how does sustained coaching influence the remedial teacher's instructional creativity, planning depth and learner-centred pedagogy?

By investigating these questions, this paper aims to contribute evidence-based insights into innovative remedial teaching practices that align with Malaysia's digital education policy while addressing literacy challenges.

## **Literature Review**

Education in Malaysia has long been a continuous effort to nurture students' potential in a holistic and balanced manner. This is a crucial national agenda, as education forms the foundation of the country's growth and progress. However, state data of students needing remedial education reveal a worrying plummeting trend despite numerous educational reforms, programmes and initiatives carried out. This is alarming because 3M is the cornerstone of all learning, enabling students to access and follow lessons across subjects.

To address this challenge, the Ministry of Education (KPM) introduced remedial education, a programme specifically designed to support students with deficiencies in 3M skills, often caused by environmental or developmental factors (Roselan, 2003). Conducted by specially trained teachers in designated areas of schools (KPM, 2008), the programme's ultimate goal is to equip these students with the necessary literacy and numeracy competencies so that they can rejoin mainstream classes and continue learning with confidence (KPM, 2008).

Yet, remedial education alone cannot fully resolve the issue, as research has shown the problem to be multifaceted. A systematic literature review by Nur Faiqah Nasuha & Zamri (2025) identified several key factors contributing to 3M deficiencies: students' attitudes, motivation, and readiness (cited in 19 articles); parental support and involvement (17 articles); and the learning environment (12 articles). Additionally, socioeconomic background was highlighted



in 11 studies as a significant influence. These findings indicate that literacy and numeracy challenges are not solely dependent on classroom teaching, but are also shaped by broader social, familial, and contextual factors.

Given this complexity, the role of teachers becomes even more challenging. To navigate these issues continuous professional development (CPD) is key. CPD has the potential to become a recognised mechanism to transform classrooms, improve schools and enhance student learning outcomes (Postholm, 2018). CPD may be carried out in various manners such as peer teaching, collaborative planning, professional dialogue, formal coaching or mentoring (Timperley, 2011). The objective of a CPD is to learn from more experienced colleagues and transform an ordinary classroom into an effective teaching practice. In this context, coaching becomes a bridge to enable teachers to refine remedial education strategies and adopt innovative approaches that make learning more engaging. Common coaching models in education include John Whitmore's GROW model, Marilyn Atkinson's model, the OSKAR model by Jackson and McKergow, the CLEAR model by Peter Hawkins and Jim Knight's Impact Cycle. While each offers different pathways, they share a common goal which is to inspire and unlock student potential.

Outdoor learning provides teachers with alternative methods to support remedial students beyond the traditional classroom. It offers authentic, experiential opportunities where students learn by doing while engaging with the natural environment. Outdoor learning is found to reduce the sedentary nature of conventional instruction (Marchant et al., 2019), increases student engagement (Quibell et al., 2017) and enhances higher-order thinking skills (Mohamad, 2019). Moreover, it supports students' cognitive, physical, social, and emotional development, creating rich conditions for holistic growth (Dias & Bentoa, 2017).

## **Research Methodology**

This research employs a qualitative single case study approach to examine the effects of outdoor learning intervention implemented through consistent coaching and mentoring. The case study was carried out over a period of 6 months at an all-girls primary school in Ipoh, Perak. It involved a remedial teacher who has 12 years of teaching experience and 10 remedial Year 2 students. Knight's Impact Cycle was used as the basis of the intervention coaching and mentoring process. The Impact Cycle consists of 3 phases which are the identify, learn and improve phase and it emphasises on collaborative goal setting, co-construction of strategies and iterative refinement through feedback (Knight et. al., 2015).

## **Data Collection**

Data collected was undertaken through a range of qualitative sources designed to capture both baseline practices and subsequent changes resulting from the intervention. To ensure a systematic approach, the process was organised into 2 distinct phases which are pre-intervention and post-intervention.

Prior to the implementation of the coaching-supported outdoor learning programme, data were collected to establish a comprehensive baseline. Classroom observations were conducted using structured field notes to document levels of student engagement, task persistence and confidence in literacy activities. Samples of students' reading and written work were compiled to assess their initial literacy competencies. The teacher contributed reflective logs in which she recorded prevailing instructional strategies, planning practices and challenges encountered in remedial teaching. In addition, records from preliminary coaching sessions including

coaches' notes and Q&A discussions / feedback sessions were gathered to provide insights into teacher's readiness and perceived pedagogical needs.

Following the intervention, equivalent data sources were collected to identify changes and emerging practices. Classroom observations were repeated to capture shifts in students' engagement, confidence and persistence in literacy tasks. Student work samples were again compiled enabling comparison with database performance. Teacher's reflective logs provided accounts of how her instructional creativity, lesson planning and learner-centred practices evolved throughout the intervention. Supplementary evidence included revised lesson plans, instructional materials and documentation from follow-up coaching sessions. These artefacts provided evidence of how coaching encouraged teaching adaptations and ongoing professional growth.

### **Analysis Method**

Data analysis was conducted through a combination of thematic analysis and comparative analysis to identify key themes and track changes over the course of the intervention. All qualitative data, reflective logs, field notes, students' work sample, lesson plans and coaching documentation, were analysed thematically. An inductive coding approach was first employed to allow themes to emerge naturally from the data. This is followed by deductive coding based on the research questions. This two-tiered process provided a nuanced understanding of both student and teacher outcomes.

Pre-intervention sub-themes were expected to cluster around:

1. Student related: low to no reading confidence / ability, incomplete practices / homework, attention deficit, minimal engagement in class, lack social skills, no foundational skills
2. Teacher related: teacher centred pedagogy, lesson designs boring and rushed, focus on using provided modules, no attempt at differentiated learning, completion over understanding, one-way communication

Post-intervention sub-themes were anticipated to reflect shifts in both domains:

1. Student related: increased engagement, improved confidence in class tasks, greater task persistence and more active participation in literacy activities.
2. Teacher related: enhanced instructional creativity, more learner-centred activities, more organised and thought of lesson planning and evidence of professional growth through sustained coaching support and change of mind set.

Comparative techniques were then applied to systematically examine differences between pre-intervention and post-intervention stages. Student work samples were compared to trace improvements in literacy performance while classroom observation data were contrasted to capture changes in engagement and persistence. Teacher reflections and coaching records were analysed side by side to highlight growth in pedagogical practice.

Triangulation across multiple sources which included students' artefacts, classroom observations, reflective logs and coaching documentation was employed to ensure validity and reliability. This process not only strengthened the credibility of the findings but also provided a holistic account of how coaching supported outdoor experiential learning influenced remedial literacy development.

## Findings

### Research question 1: How does a coaching-supported outdoor learning approach affect remedial students' engagement, reading confidence and task persistence?

Prior to the intervention, students' engagement with classroom activities was markedly limited. Observations indicated that students were generally unwilling to participate in reading tasks voluntarily and would only engage in such activities when reading was conducted collectively as a class. Off task behaviours such as chatting with peers or disengaging entirely were frequent and classroom tasks were often perceived as burdensome or monotonous. In contrast, post intervention data revealed a notable transformation in engagement. Students exhibited heightened enthusiasm for classroom activities approaching tasks with greater interest and energy. While occasional off task behaviours were still observed, they occurred less frequently and were more easily redirected suggesting that the intervention fostered both motivation and behavioural self-regulation.

Students' confidence in carrying out lesson activities also demonstrated a clear growth over time. Before the intervention, classroom behaviours reflected considerable hesitation and a reliance on teacher validation with task frequently left incomplete or attempted only after repeated prompts. Signs of discomfort were evident including minimal eye contact, quiet or mumbled responses and reluctance to speak in front of peers. Following the intervention, students displayed a more self-assured disposition in lesson participation. They approached tasks with reduced hesitation, responded more readily to both lower order and higher order questions and demonstrated stronger voice projection. Classroom observations also noted improved eye contact and increased willingness to seek clarification from teachers. This shift indicated that the coaching-supported outdoor learning environment not only nurtured students' confidence but also enabled freer and more comfortable classroom interactions.

Similarly, students' task persistence evolved across the intervention. Initially, many tasks were either left incomplete or not attempted at all with students showing a tendency to give up on assigned work once difficulties arose. Their participation was heavily dependent on teacher guidance and perseverance was minimal. After the intervention however, students displayed determination to attempt tasks independently with some able to complete assigned activities within the allotted time. Instances of some students persisting through challenges before seeking assistance were recorded, reflecting a marked improvement in resilience and willingness to engage productively with literacy tasks.

These findings suggest that the coaching-supported outdoor learning approach contributed positively to remedial students' engagement, confidence and persistence. The data illustrate not only behavioural and attitudinal shifts among learners but also a growing capacity for independent participation and sustained effort in literacy activities, underscoring the value of experiential, coaching-based interventions in remedial education context.

### Research question 2: How does sustained coaching influence the remedial teacher's instructional creativity, planning depth and learner-centred pedagogy?

The findings revealed significant growth in teacher's instructional creativity as a result of the sustained coaching intervention. Initially, instructional practices were largely confined to the prescribed textbooks and modules with minimal use of supplementary resources. Lessons seldom extended into real-world or outdoor learning spaces and teachers rarely employed

differentiated materials to accommodate students' diverse literacy needs. Following the intervention however, lessons demonstrated a higher degree of creativity and adaptability. Teacher increasingly supplemented the standard textbook lessons with self-produced handouts, teaching aids, integrated outdoor and thematic learning spaces as well as incorporated digital tools into classroom activities. Moreover, differentiated instructional materials was introduced, indicating a more responsive and innovative approach to meeting students' varying learning profiles.

Improvements were also evident in the depth and quality of lesson planning. Prior to the intervention, lesson plans were brief and predominantly dependent on the structure of the provided modules, with minimal incorporation of strategies for scaffolding or assessing comprehension. Higher order thinking skills (HOTS) and digital tools were rarely integrated and lessons were generally teacher-led. Post intervention lesson plans reflected a clear restructuring that outlined specific learning objectives and student-oriented activities. Teacher employed group work, visual aids and scaffolding questions to prepare students for comprehension tasks while repetition and retention strategies were embedded. The inclusion of HOTS based questions coupled with the integration of digital tools for follow up activities, highlighted a marked increase in the intentionality of planning.

Shifts in pedagogical orientation further demonstrated the influence of coaching. Before the intervention, teaching was dominated by a traditional, teacher-centred approach with students positioned largely as passive recipients of knowledge. After sustained coaching, however teacher increasingly adopted a learner centred stance. Lessons incorporated a varied teaching styles including group / pair work, mini projects and periodic student-led activities. These practices not only diversified the classroom experience but also encouraged greater student participation, collaboration and ownership of learning.

In short, the data gathered suggest that sustained coaching played a pivotal role in enhancing remedial teacher's instructional creativity, deepening their lesson planning and facilitating a transition toward more learner-centred pedagogical approaches. These shifts illustrate the potential of coaching as a professional development model that equips teachers with the skills, confidence and adaptability necessary to support remedial learners.

## **Discussion**

This study set out to examine how a 6-month coaching sessions, grounded in the Impact Cycle framework affect the remedial students' engagement, reading confidence and task persistence as well as the teacher's instructional practices. In general, the findings demonstrated marked improvement across the focus domains. However, some challenges persisted, accentuating the complexity of transforming remedial classroom practice which requires continuous efforts, support and work from all involved parties.

A marked difference in the students' engagement with class activities following the intervention was evident. After the intervention, class observation and teacher's log recorded increased participation and greater enjoyment. This is consistent with findings from James & Williams (2017) who found that the students enjoyed learning environmental science concept in a hands-on, active and experiential way and that the outdoor component added depth and meaning to their indoor learning activities, although the study was done on middle school students. It is exciting and emotionally engaging and consequently leads to deeper and more effective learning. rose and students were reported greater. This finding echoes with Kahu et

al. (2014), who emphasise engagement as the foundation to student success. It can either lead to greater engagement or result in disengagement and withdrawal. In addition, meaningful gamification was found to enhance learning, engagement and affective outcomes when student-centred activities were implemented, as evidenced in a study involving 22 students at a large Asian public university in 2014 (Tan & Hew, 2016). Similar result was found among Year 4 remedial pupils where outdoor games enhance engagements and attention following game-based instructional interventions (Sartho et. al., 2025).

Students' confidence and task persistence were also improved. Teacher's log recorded pupils to attempt tasks more independently, self-correct and communicate with greater assertiveness as opposed to their previous reliance on teacher. Students who previously were found to abandon tasks prematurely demonstrated willingness to persist in the tasks at hand. These are consistent with Bandura's (1997) self-efficacy theory that highlight the vitality of experiences and positive reinforcement in building learners' self-efficacy. Structured scaffolding and group work created a safe environment that helped weaker students take on more active roles in literacy learning. Repeated praises and positive reassurance too enhance the students' sense of competence. Vygotsky's foundational concept of the Zone of Proximal Development (ZPD) as cited by Puntambekar (2022) is apt where learners can achieve higher levels of performance when provided with appropriate guidance. This highlights the importance of scaffolding in enhancing task persistence.

Nevertheless, not all students reached full independence. There were students who still exhibit reticence suggesting that confidence-building and persistence remain uneven and require sustained individualised support. This is aligned with Schunk & DiBenedetto (2022) that stated while interventions boost efficacy those with persistent learning barriers require more individualised and sustained support. This reflects that persistence as well as engagement are not uniform outcomes. They vary according to individual learner characteristics (Mutlu & Yildirim, 2020). While coaching-supported approach promoted notable improvement, differentiated support remains crucial for sustaining engagement across diverse remedial students. Thus, a note of caution is warranted. As the students begin from a low baseline, any progress made may appear large and dramatic. The teacher must therefore pay particular attention to ensure that such gains are sustained as challenges such as low readiness and persistent learning difficulties continue to pose barriers to long-term success as Onditi (2017) emphasises that learners' readiness determines how well they can benefit in the long run.

The coaching cycle also had a marked impact on the teacher's instructional practices. Class observations, coaches' logs and feedback sessions revealed that lesson planning became more flexible, incorporating differentiated materials, scaffolding strategies and student-centred tasks in contrast to the initial reliance on textbook modules and repetitive drill-based lessons. Though the usage of the modules was systematic, lessons were highly uniform with minimal differentiation and instructional strategies were limited to repetitive reading drills. This finding is in line with McDonald et. al. (2013) who pointed out that teacher education works best when it focuses on practical teaching skills that can be practised and improved, rather than only on theories or abstract ideas. The teacher's lesson plans and class execution demonstrate a deeper planning process and growing ability to anticipate learning difficulties. This reflects Shulman's (1987) idea of pedagogical content knowledge, which is about teachers making difficult subjects easier by turning them into teachable forms by predicting students' struggles and using clear examples or analogies as it is prerequisite to acknowledge that teaching is beyond subject matter knowledge and generic pedagogy. Accordingly, differentiated materials, instructional approaches and varied output expectations proved particularly beneficial for students.

Furthermore, the integration of diverse strategies such as outdoor learning, project-based tasks and digital scaffolds demonstrated how coaching can support teachers in moving beyond rigid routines and adopting approaches that better address the needs of remedial learners through structured feedback sessions. This aligns with Boer (2023) who emphasises that instructional coaching supports novice teachers in moving away from mechanical, theory-only practices by providing practical, feedback driven and adaptive teaching strategies. In turn, such coaching accentuates the importance of effective lesson planning that takes into account student's backgrounds and learning needs. By recognising that students learn at different paces and in different ways, the teacher was encouraged to implement more creative and student-centred practices in her classroom.

Despite these advances, classroom observation and reflection sessions indicated that several challenges persisted. Reading practices remained predominantly teacher-led, as weaker students continued to rely on structured guidance. Parental support for take-home projects / homework was also inconsistent, limiting the potential benefits of extending learning beyond the classroom. This mirrors Badrasawi et. al. (2019) on challenges to parental involvement in children's education at a primary school in China where it was identified that among the main challenges of parents' involvement in supporting the students with schoolwork is their low proficiency in Chinese language and the complexity of school subjects undertaken by their children.

These limitations show that although coaching supports meaningful progress, long-term sustainability also depends on addressing wider factors such as parental/family involvement and students' different levels of readiness for independent learning. This aligns with Hill et. al. (2004) who found that sustained parental academic involvement significantly contributes to adolescents' achievement, aspirations and school behaviour while Onditi (2017) emphasises remedial success is highly dependent on learners' readiness which encompasses not only academic skills but also motivation, self-confidence and resilience. Moreover, the teacher's challenge in balancing lesson pacing with student comprehension highlights the necessity for real-time adaptability and on-the-spot adjustments to students' learning needs.

In short, the findings highlight that coaching grounded in the Impact Cycle can catalyse both student growth and professional transformation. However, the unevenness of outcomes suggests that coaching should be accompanied by systemic support, including differentiated resources, parental involvement strategies, and professional learning communities. In this way, short-term gains in engagement, confidence, and persistence can be consolidated into long-term improvements in literacy equity and teaching quality.

## **Conclusion**

In conclusion, the findings demonstrate that the Impact Cycle coaching model positively influenced both students learning behaviours and teacher practices in remedial contexts. Students showed increased engagement, confidence and persistence while the teacher displayed growth in creativity, planning and pedagogical orientation. Yet the continued challenges such as timing, pacing, residual reliance on teacher-led approaches and parental support in promoting continuous learning environment reveals the limit of coaching as a standalone intervention. For the observed improvements to sustain and further enhanced, ongoing systemic support is required (Mc Tigue et. al., 2023). This entails not only adequate resource provision but also the establishment of collaborative professional learning

communities that enable teachers to share expertise, reflect on practice and collectively problem solve (Salleh, 2024).

In this regard, the PiTSTOP intervention in Kinta Utara involving 444 remedial students from 111 schools provides a valuable widening programme that can complement school-level efforts by offering additional resources, cross-school collaboration and ongoing district monitoring. Future professional development for remedial teachers should therefore integrate school-based coaching with district-led programmes such as PiTSTOP, ensuring that improvements could reach a wider group of students instead of focussing on a single classroom. By bridging classroom innovation with district strategy, remedial education in Malaysia can advance towards greater effectiveness, wider impact and long-term viability.

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# PERCEIVED LEADERSHIP INTEGRITY AND WORK ENGAGEMENT MEDIATING BY TRUST AMONG JOHOR BAHRU'S CHINESE PRIMARY SCHOOL TEACHERS

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**Abstract:** *Headmasters play a crucial role through their daily leadership practices in shaping teacher work engagement and retaining quality educators in schools. Existing studies have highlighted the relationship between perceived leadership integrity and work engagement in organizational settings, with trust identified as a key driver of work engagement. However, limited attention has been given to how headmasters' integrity in leadership influences teachers' work engagement. Addressing this gap, the present study examined the relationship between perceived leadership integrity and teacher work engagement, with trust as a mediating variable, among 1,358 Chinese primary school teachers in Johor Bahru. Using probability sampling, 338 teachers were randomly selected to participate in this quantitative study. Data were collected through a structured questionnaire and analyzed with SPSS and Smart PLS 4.0. Findings revealed that trust significantly mediated the relationship between perceived leadership integrity and teacher work engagement. Results also showed high levels of perceived leadership integrity, trust in headmasters, and work engagement among the participating teachers. These findings suggest that trusted school leaders foster more resilient, motivated, and committed teaching staff, which in turn enhances teacher retention, student performance, and overall school achievement.*

**Keywords:** *perceived leadership integrity, work engagement, trust, mediating, Chinese primary school.*

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## 1. Introduction

In primary schools, headmasters play pivotal leadership roles as role models whose integrity and actions shape teachers' attitudes, professional commitment, and performance. Evidence shows that leadership quality strongly predicts teacher work engagement, which ultimately influence classroom effectiveness and student achievement (Keravnos & Symeou, 2024; Wote & Sero, 2022). To meet these expectations, headmasters are required to embody professional norms such as fairness, transparency, collaboration, perseverance, and continuous improvement (National Policy Board of Educational Administration, 2015; Asim et al., 2023). Among these qualities, integrity remains the cornerstone of organizational effectiveness, reinforcing leadership credibility, building trust, and sustaining a positive school culture (Bujang et al., 2024; Yek & Loo, 2023).

Teacher work engagement is equally critical, as engaged teachers demonstrate vigor, dedication, and absorption, qualities that directly enhance teaching quality and student outcomes (Klassen et al., 2013; Wang et al., 2022). Studies have linked teacher work engagement to greater job satisfaction, creativity, adaptive coping, and performance (Wu, 2025; Burić & Macuka, 2018). Leadership integrity also strengthens teachers' trust, providing the ethical basis upon which teachers evaluate their leaders' values and behaviors. Trust, in

turn, fosters a professional environment where ethical practices and collaboration thrive (Sakiman & Yasin, 2023; Konstantinos et al., 2019).

In Malaysia, education is positioned as a central driver of national development, creativity, and global competitiveness (MOE, 2013). The Malaysia Education Blueprint 2013-2025 emphasizes quality, equity, and access, but teacher retention has emerged as a pressing challenge. Primary school teacher enrollment declined from 230,631 in 2017 to 225,762 in 2021 (Li & Zhao, 2022), while more than 10,000 teachers opted for early retirement annually in recent years (Alzahari et al., 2022).

Chinese primary schools in Johor Bahru face similar strains, with teacher shortages compounded by early retirements and increasing student enrollment in this densely populated district. These conditions highlight the urgent need for strategies to retain teachers through leadership practices that strengthen trust and engagement.

Against this backdrop, the present study investigates the relationships among perceived leadership integrity, trust, and teacher work engagement among Johor Bahru's Chinese primary school teachers. Specifically, it examines the level of teachers' perceptions of their headmasters' integrity in leadership, the level of teachers' trust in headmasters, and the level of work engagement among teachers, as well as the mediating role of trust between perceived leadership integrity and work engagement.

The objectives of the study were: (1) To examine the level of perceived leadership integrity among Chinese primary school teachers in Johor Bahru; (2) To examine the level of work engagement among Chinese primary school teachers in Johor Bahru; (3) To examine the level of trust in headmasters among Chinese primary school teachers in Johor Bahru; (4) To identify the direct effect of perceived leadership integrity on work engagement among Chinese primary school teachers in Johor Bahru; (5) To identify the direct effect of perceived leadership integrity on trust among Chinese primary school teachers in Johor Bahru; (6) To identify the direct effect of trust on work engagement among Chinese primary school teachers in Johor Bahru; and (7) To identify the mediating effect of trust between perceived leadership integrity and work engagement among Chinese primary school teachers in Johor Bahru.

Accordingly, the research questions addressed: (1) What is the level of perceived leadership integrity among Chinese primary school teachers toward their headmasters in Johor Bahru? (2) What is the level of teacher work engagement in Johor Bahru's Chinese primary schools? (3) What is the level of teacher trust in headmasters in Johor Bahru's Chinese primary schools? (4) Does perceived leadership integrity directly affect work engagement among Chinese primary school teachers in Johor Bahru? (5) Does perceived leadership integrity directly affect trust among Chinese primary school teachers in Johor Bahru? (6) Does trust directly affect work engagement among Chinese primary school teachers in Johor Bahru? and (7) Does trust mediate the relationship between perceived leadership integrity and work engagement among Chinese primary school teachers in Johor Bahru?

Based on these questions, four research hypotheses were proposed:

H1: Perceived leadership integrity significantly affects work engagement among Chinese primary school teachers in Johor Bahru.

H2: Perceived leadership integrity significantly affects trust among Chinese primary school teachers in Johor Bahru.

H3: Trust significantly affects work engagement among Chinese primary school teachers in

Johor Bahru.

H4: Trust significantly mediates the relationship between leadership integrity and work engagement among Chinese primary school teachers in Johor Bahru.

## **2. Literature Review**

### **2.1 Past Studies**

#### **2.1.1 Perceived leadership integrity**

Perceived leadership integrity refers to employees' judgments about leaders' moral conduct and whether they consistently act in line with espoused values (Sigma, 2018). Leaders who display honesty, fairness, and discipline are seen as trustworthy, while the absence of integrity is associated with dishonesty, corruption, and disregard for rules (Suryadi et al., 2016). Integrity thus functions as the foundation of authentic leadership and sustainable organizational performance (Christie & Fellow, 2014; Nnonyelu, 2019).

In educational settings, headmasters' integrity is crucial for shaping school culture and earning legitimacy in the eyes of teachers, parents, and students (Gultom et al., 2021). Headmasters who align words with actions inspire trust, enhance teacher commitment, and drive school performance (Twin, 2022). For this study, perceived leadership integrity is defined as teachers' evaluations of headmasters' moral behavior and word–deed consistency.

#### **2.1.2 Work engagement**

Work engagement is a positive, fulfilling state of mind characterized by vigor, dedication, and absorption (Carmona-Halty et al., 2019). Engaged employees invest energy in their work, find meaning in tasks, and experience deep immersion (Wood et al., 2020). Compared to merely motivated employees, engaged staff demonstrate higher performance, creativity, and resilience, benefiting both individuals and organizations (Kuok & Taormina, 2017; Bakker et al., 2023).

In schools, engaged teachers display enthusiasm, perseverance, and strong professional commitment, which enhance both teaching quality and student outcomes. In this study, work engagement refers to teachers' levels of vigor, dedication, and absorption among Johor Bahru's Chinese primary school teachers.

#### **2.1.3 Trust**

Trust is the willingness to be vulnerable to another party based on perceptions of benevolence, reliability, competence, honesty, and openness (Fumitaka et al., 2020). Leaders earn trust when their actions align with words, rules, and ethical standards (Cullen, 2015). Conversely, breaches of trust generate cynicism, burnout, and weakened organizational ties (Vikaraman et al., 2021).

Trust is therefore central to effective school leadership, as teachers' confidence in their headmasters influences morale, motivation, and commitment (Mineo, 2014). In this study, trust

is defined as teachers' willingness to rely on headmasters perceived as reliable, caring, and authentic.

## **2.2 Theoretical framework**

### **2.2.1 Behavioral Integrity Theory**

Behavioral integrity refers to the perceived alignment between leaders' words and deeds (Simons et al., 2022). Leaders who consistently act in line with values foster trust, commitment, and positive work outcomes (Palanski & Yamamarino, 2009; Li et al., 2021).

Conversely, violations of word-deed consistency erode trust and create cynicism (Sen & Basim, 2022). In schools, behavioral integrity is essential for establishing credibility and sustaining teacher commitment.

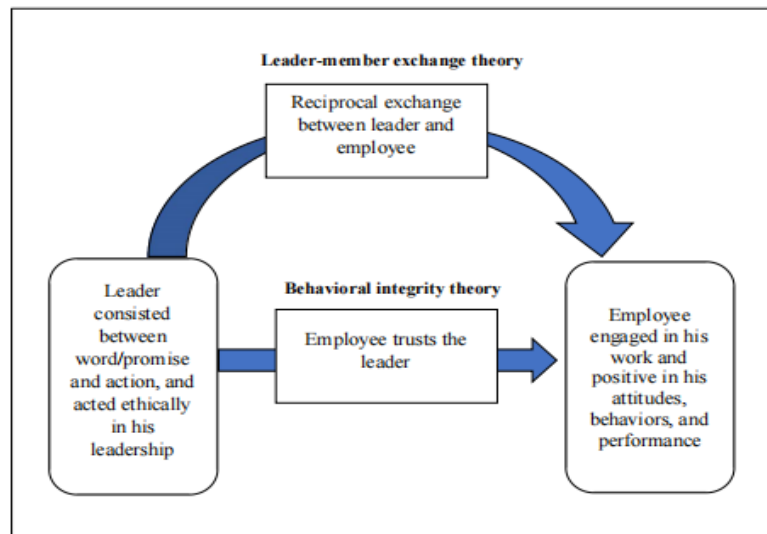
### **2.2.2 Leader-Member Exchange Theory**

The Leader-Member Exchange (LMX) Theory, grounded in social exchange principles, posits that leadership emerges when leaders and employees build effective relationships that enhance influence and yield mutual benefits (Saffrudin & Nohong, 2023). These relationships can range along a continuum from high to low quality, with empirical evidence demonstrating that their nature significantly influences employees' performance and job satisfaction (Santalla-Banderali & Alvarado, 2022; Khuc, 2024).

LMX Theory explains leadership as a social exchange process in which the quality of leader-subordinate relationships varies (Liden et al., 2016). High-quality LMX relationships marked by affect (mutual affection), loyalty (public support), contribution (shared effort), and professional respect (perceived competence), are linked with trust, job satisfaction, and performance (Haynie et al., 2014; Aggarwal et al., 2020). Low-quality exchanges, by contrast, remain transactional and weaken commitment.

Together, behavioral integrity and leader-member exchange provide complementary lenses for understanding the leader-employee relationship. While behavioral integrity emphasizes the consistency between leaders' words and actions as a foundation of trust, leader-member exchange highlights the varying quality of dyadic relationships and their implications for work outcomes. Integrating these perspectives, the proposed theoretical framework (Figure 1) illustrates how the two theories intersect to explain the mechanisms through which leadership behaviors influence employee attitudes, performance, and organizational effectiveness.

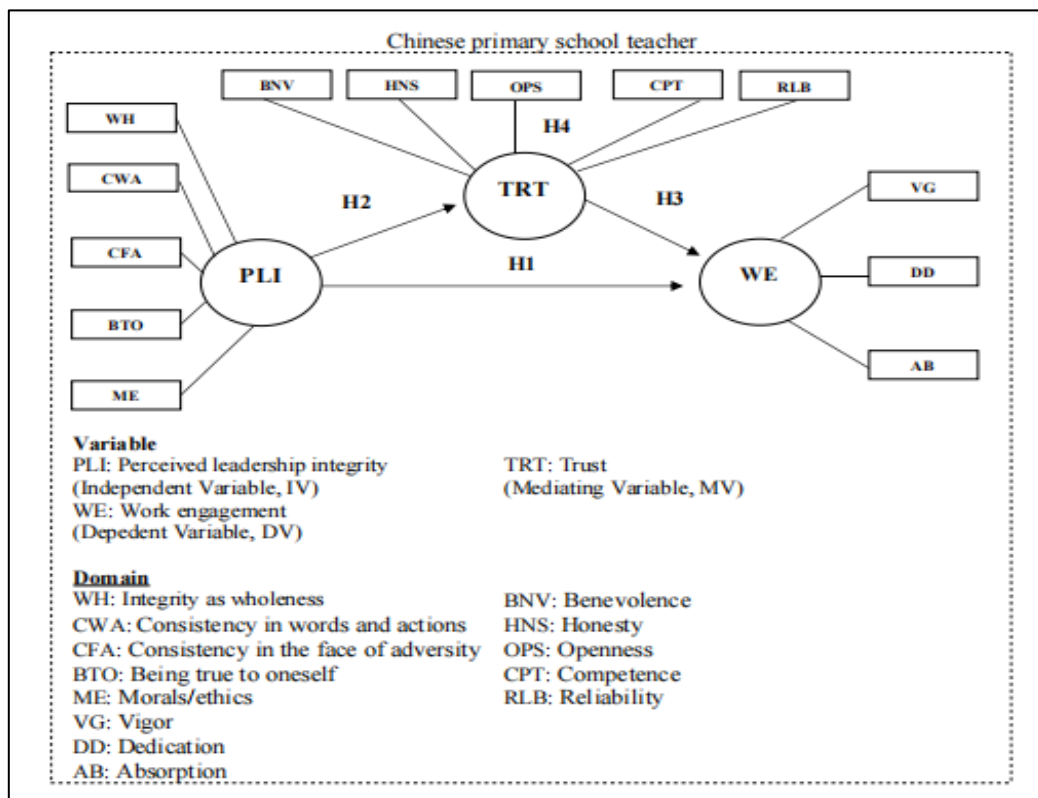
Figure 1: Theoretical framework of the study



### 2.3 Conceptual framework

In this study, perceived leadership integrity (Christie & Fellow, 2014) is the independent variable, work engagement (Schaufeli et al., 2023) the dependent variable, and trust (Hoy & Tschannen, 2003) the mediating variable. The relationships are presented in the conceptual framework (Figure 2), along with hypotheses H1 to H4.

Figure 2: Conceptual framework of the study



### 3. Research Methodology

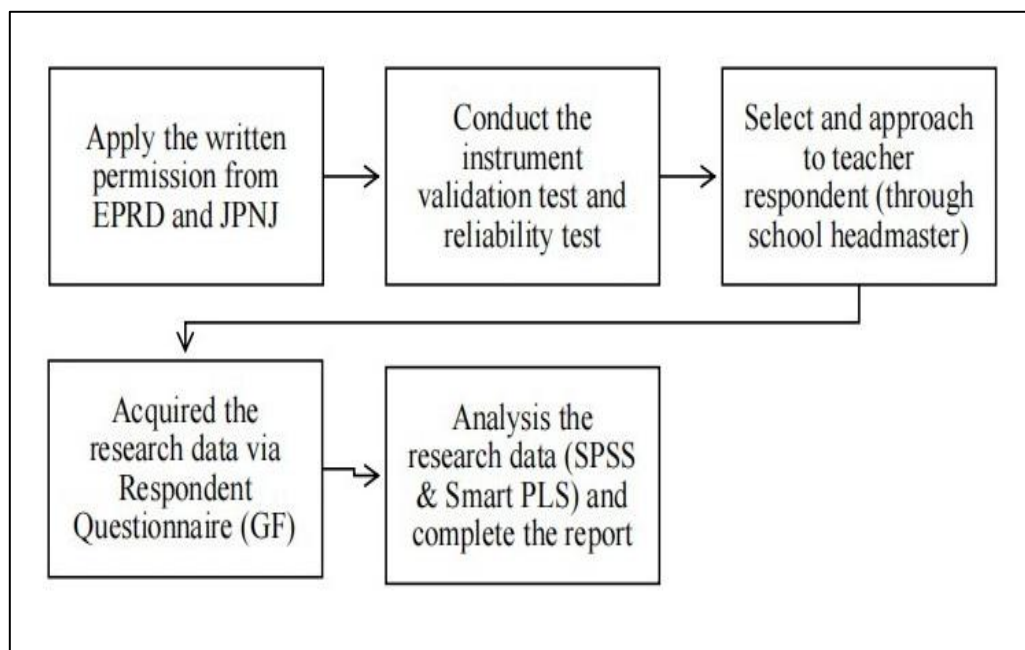
This study employed a quantitative, non-experimental correlational design to examine the relationships among perceived leadership integrity, trust, and teacher work engagement. The research was conducted in Johor Bahru, Johor, with a target population of 1,358 Chinese primary school teachers under the Johor Bahru District Education Office (PPDJB). Using probability sampling, 338 teachers were randomly selected through a random number generator.

Data were collected through a structured questionnaire developed for this study (Appendix A). Perceived leadership integrity was measured using the Perceived Leader Integrity Scale (PLIS) (Craig & Gustafson, 1998), adapted for the school context. The instrument comprised fifteen items across five dimensions (Christie & Fellow, 2014): integrity as wholeness, word-deed consistency, consistency under adversity, authenticity, and morality/ethics. Trust was assessed with eight items from the Faculty Trust Survey (FTS) (Garies & Tschannen-Moran, 2004), encompassing benevolence, honesty, openness, competence, and reliability. Work engagement was measured with the Utrecht Work Engagement Scale-Short Version (UWES-9) (Schaufeli et al., 2002), which contains nine items covering vigor, dedication, and absorption. All items were rated on a five-point Likert scale.

Content validity was established through expert review by three doctoral-level scholars, with indices confirming perfect agreement (I-CVI, S-CVI/UA, S-CVI/Ave = 1.0). Reliability was supported by a pilot test with 30 teacher samples, yielding a Cronbach's alpha of 0.9235, indicating high internal consistency.

The data collection process is illustrated in Figure 3. All responses were obtained from teacher participants within a single time frame. The written permissions from EPRD, JP NJ, and PPDJB are provided in Appendix B.

**Figure 3: Data collection procedure**



Data were analyzed using SPSS (v25) and Smart PLS (v4.0), which were applied for both measurement and structural model assessments.

## 4. Results

### 4.1 Measurement model assessment

**Table 1: Assessment result of measurement model**

Assessment	Testing Result
Constructs Factor Loading	Greater than 0.70 in all indicators
Cronbach's Alpha	All greater than 0.80
Composite Reliability (CR)	All greater than 0.80
Average Variance Extracted (AVE)	All greater than 0.50
Heterotrait-Monotrait ratio of correlations (HTMT)	All less than 0.90
Fornell-Larcker	Between 0 and 1

The testing result of measurement model (Table 1) in current study indicated that the model was validated and reliable.

### 4.2 Structural model assessment

**Table 2: Assessment result of structural model**

Assessment	Testing Result
Q Square Predictive Relevance ( $Q^2$ )	All greater than 0.50
Standardize Root Mean Square Residual (SRMR)	0.063
Normed Fit Index (NFI)	0.874
Coefficient of Determination ( $R^2$ )	Between 0.80 to 0.995
F-square ( $F^2$ )	All greater than 0.35
Variance Inflation Factor (VIF)	All below than 3.0

The testing result of structural model (Table 2) in current study indicated that the model was accepted to be used.

### 4.3 Analyzing result of research questions

#### 4.3.1 Descriptive data

**Table 3: Descriptive data analysis result**

Assessment	Testing Result
Level of perceived leadership integrity	Average mean 4.02 out of 5.00
Level of work engagement	Average mean 4.00 out of 5.00
Level of trust	Average mean 4.00 out of 5.00



### 4.3.2 Inferential data

**Table 4: Inferential data analysis result**

Path	Path Coefficient	P-value	T-statistic	Testing Result
Perceived leadership integrity → Work engagement	0.550	0.000	7.326	Significant and H1 acceptance
Perceived leadership integrity → Trust	0.971	0.000	283.483	Significant and H2 acceptance
Trust → Work engagement	0.322	0.000	4.311	Significant and H3 acceptance
Perceived leadership integrity → Trust → Work engagement	0.313	0.000	4.298	Significant and H4 acceptance

All four research hypotheses were supported (Table 4). Leadership integrity significantly predicted teacher work engagement ( $\beta = 0.550$ ,  $p < 0.001$ ), trust ( $\beta = 0.971$ ,  $p < 0.001$ ), and indirectly work engagement through trust ( $\beta = 0.313$ ,  $p < 0.001$ ). Trust also had a direct positive effect on work engagement ( $\beta = 0.322$ ,  $p < 0.001$ ). These findings confirm the mediating role of trust in the relationship between leadership integrity and engagement.

## 5. Discussion and Conclusion

This study examined the interplay between leadership integrity, trust, and teacher work engagement in Chinese primary schools in Johor Bahru, highlighting the central role of headmasters in shaping organizational culture and teacher motivation (Yek & Loo, 2023). The findings confirm that leadership integrity significantly influences both trust and work engagement, underscoring the importance of leaders who align their words and actions consistently (Amir et al., 2023). From the perspective of behavioral integrity theory, this alignment enhances leader credibility and fosters a school climate built on fairness and transparency, which in turn sustains teachers' psychological commitment (Li et al., 2025).

Equally important, the results reinforce the relevance of LMX Theory, which posits that high-quality leader–teacher relationships are grounded in mutual trust, loyalty, professional respect, and contributions to shared goals. Teachers who perceive their headmasters as acting with integrity are more likely to develop strong exchange relationships characterized by affective bonds, reciprocal loyalty, professional admiration, and meaningful contributions (Li et al., 2025). Such high-quality exchanges nurture a sense of belonging and motivate teachers to invest energy and creativity in their work, thereby elevating overall engagement (Gopal et al., 2024).

The mediating role of trust highlights how integrity-driven leadership strengthens relational ties that are central to LMX processes. Trust serves as the psychological mechanism that bridges leadership integrity with teachers' work engagement, suggesting that teachers do not engage fully unless they first trust their leaders' intentions and values (Yek & Loo, 2023). These findings align with past studies that emphasize trust as both an outcome of integrity and a precursor to effective leader–follower relationships (Amir et al., 2023).

Practical implications emerge strongly from this study. First, headmasters must model consistent, transparent, and ethical behaviors to sustain teachers' trust and engagement (Amir et al., 2023). Second, leadership development programs should incorporate modules on integrity and relational competence, encouraging headmasters to cultivate high-quality exchanges with teachers. In this regard, the findings not only support but also extend the

objectives of the National Professional Qualification for Educational Leaders (NPQEL), which emphasizes integrity, trust-building, and ethical leadership as core competencies for Malaysian school leaders (Hussin et al., 2021; Sharmini et al., 2021; Li et al., 2025). Embedding these elements more explicitly into NPQEL training would ensure that headmasters translate leadership theory into consistent practice, thereby strengthening leader credibility, teacher motivation, and school culture (Yek & Loo, 2023; Zou et al., 2024). Third, policymakers should recognize that teacher engagement is not only a product of workload or compensation but also of leadership quality, suggesting that investments in ethical and relational leadership are critical for teacher retention (Gopal et al., 2024).

Despite its contributions, this study has several limitations. The focus on Chinese primary schools in Johor Bahru may limit the generalizability of the findings to other school types or regions in Malaysia. Furthermore, the cross-sectional design restricts the ability to infer causality between integrity, trust, and engagement. Future research could adopt longitudinal approaches, broaden the sample across states, and explore additional mediators such as organizational commitment or psychological safety.

In conclusion, this study extends the application of both Behavioral Integrity Theory and LMX Theory within the educational context, offering evidence that leadership integrity and trust are critical drivers of teacher work engagement. By integrating these perspectives, the findings suggest that integrity is not only a personal virtue but also a relational resource that strengthens leader–teacher exchanges. For policymakers and practitioners, particularly through platforms like NPQEL, investing in leadership development that emphasizes integrity, trust-building, and relational competencies is essential for sustaining teacher engagement and improving school outcomes.

Overall, the study highlights that cultivating leadership integrity and high-quality school leader-teacher exchanges is vital for strengthening teacher engagement and sustaining educational excellence, aligning directly with the mission of educational leadership and management development emphasized in platforms such as ICELAM (Gopal et al., 2024).

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## THE MODEL OF CARING LEADERSHIP IN DEVELOPING FUTURE TEACHERS GENERATIONS

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**Abstract:** *Power abuse among top-ranked leaders has existed for centuries, often remaining concealed. Apart from that effective leadership, particularly in educational settings, should emphasise care, empathy, and support. This contradiction has brought the concept of caring leadership, which highlights emotional intelligence, compassion, and positive relationships, from the nursing to the education field. These principles have influenced educational leadership, promoting a shift towards transformational styles that empower and motivate individuals to achieve shared goals within supportive environments. Therefore, this article investigates the relationship between caring leadership and attitudes towards the teaching profession among 331 pre-service teachers in Malaysia to view the future of leadership in education. Caring leadership is measured through four indicators, namely, academic support, classroom management, interpersonal relationships, and respect and trust. Meanwhile, attitudes toward the teaching profession are assessed using three indicators, which are attitudinal development, professional expectations, and professional pride. Using quantitative methods with SmartPLS to develop structural equation modeling, a relationship model was established, displaying how perceptions of caring leadership influence pre-service teachers' attitudes toward their future profession. The findings led to ten recommendations to strengthen caring leadership among future educational leaders. These suggestions focus on enhancing current practices to foster a more caring and supportive educational environment. The proposed model offers a framework to guide leadership development, aiming to reduce leadership-related issues through the engagement of all management levels. Ultimately, the study advocates for an education system grounded in caring leadership that promotes educational well-being and cultivates a more positive professional identity among future teachers.*

*Keywords: Caring leadership, teaching profession, pre-service teachers.*

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### 1. Introduction

Power abuse was the source of toxic and abusive leadership among top-ranked leaders in educational leadership (Andrews et al., 2023; Alanezi, 2024; Botha & Fuller, 2024). This condition is due to the power to control people which has been acquired that leads to such disturbing leadership. Often being manipulated and silently abused, this phenomenon was frequently remaining concealed by the educational society and remained scarce to be reported (Ismail et al., 2021; Tahir et al., 2020).

Caring leadership has been practised in school, yet it is still developing in higher education institutions (Schultz, 2024). A teacher needs to be a caring leader to engage with the school, assist students in their learning, and motivate them at the same time (Ryu et al., 2022). Although caring seems to be important, the study of the relationship between caring leadership and attitude towards the teaching profession in educational institutions has scarcely taken place in academia (Azmi & Chua, 2024). A study conducted earlier has shown that millennials have the motivation to be teachers (Binabise et al., 2024). In contrast, Gen Z, taking on leadership responsibility, is not prepared to face the reality of the workplace and is easily depressed in the workplace, which is the most concerning situation in the teaching profession (Twenge, 2023). This is due to the phenomenon that the upcoming generation does not seem to care about everything (Ingold, 2022).

Based on these issues, a study has been conducted to cultivate caring leadership among pre-service teachers, which is essential for ensuring the future wellbeing of upcoming generations of teachers and for ending the current practice of silent power abuse (Yusof & Anvari, 2023). In this study, caring leadership, which has been practised by lecturers in the Institute of Teacher Education (ITE), has been measured to find the relationship with pre-service teachers' attitudes towards the teaching profession. The lecturer's caring leadership involved the indicators of academic support, classroom management, interpersonal relationships, and respect and trust. Meanwhile, attitudes toward the teaching profession are assessed using three indicators, which are attitudinal development, professional expectations, and professional pride.

## **2. Literature Review**

The teaching profession is facing a deep generational shift, presenting a key challenge to higher education institutions responsible for preparing a new generation of teachers. Emergent evidence characterises Generation Z entrants as considerably different from their Millennial predecessors, with diminished preparedness for the harsh realities of work and enhanced susceptibility to professional stress and disillusionment (Day, 2023; Lubis et al., 2024). Such a change in generation, coinciding with gaps recognised in pedagogical leadership in teacher education, threatens exacerbation of issues of attrition and "silent power abuse" in schools (Khalid et al., 2024). In addressing this imperative, it is the importance of this article that the theoretical model of caring leadership, with its operationalisation through academic support, classroom organisation, interpersonal relationships, and trust, provides an essential model. This model is an optimism, which teacher educators can positively influence the professional dispositions and resilience of Generation Z. This includes a consequent encouragement of the wellbeing of future educators and the profession as a whole.

The current problems in existence are a generational mismatch of attributes and a deficiency in supportive leadership models. Whereas Millennials showed a high motivation to join the teaching profession (Marrero Galván et al., 2023), Gen Z is found to be disengaged and vulnerable and not ready to meet the emotional as well as practical challenges of the classroom (Suyatno et al., 2024). Putting such individuals into conventional, hierarchical models of teacher training is likely to perpetuate their insecurities and create negative professional dispositions. It is precisely for this reason that caring leadership theory, constructed by researchers like Noddings (1984, 2012), is not just beneficial but essential. Founded upon an ethic of relationality and authentic engagement, caring leadership goes beyond the transmission of knowledge to illustrate the very mentorship pre-service teachers themselves must embody. It does the exact opposite of the phenomenon of disengagement by creating an environment of supportive challenge, wherein structured classroom management and academic support build

competence, and interpersonal connections and trust build confidence and belonging (Ryu et al., 2022). This theoretical framework is specifically defined to build the desired professional attitudes consisting of attitudinal development, professional expectations, and professional pride to cure Gen Z's disengagement and fragility in their careers (Azmi & Chua, 2024).

Nevertheless, the necessary gap exists between the use and assessment of this theory. While the issue of Gen Z is a serious problem that needs concern, and caring leadership theory provides a direct connection between them, they are underresearched. As Azmi and Chua (2024) attest, the experiential connection between tertiary education, caring leadership and professional attitude development has hardly been made in academia. Therefore, this study was undertaken to correct the issues of the future in the face of it. The path forward is integrating the theory and practice through intentional empirical research. By quantifying how a lecturer's caring behaviours have a direct influence on the attitude of a pre-service teacher, courses in teacher education can progress from merely diagnosing a generation problem to actually solving it. Teacher educator training based on evidence of caring leadership values is the step to shatter cycles of neglect and create a sustainable, healthy model of resilient, proud, and dedicated teachers for the future.

### 3. Research Methodology

This study used a quantitative approach using an online survey. This survey has been launched to assist respondents in indicating their perspective on caring leadership through measuring their lecturers' caring behaviour and attitude towards the teaching profession. This study was implemented in three institutes of teacher education (ITE) which have a distinct character. One ITE is more into physical education and special education expertise, and the others are experts in national language training and, lastly, international language expertise. All three different ITEs involved are located on the outskirts of Malaysia's city centre. Respondents involved in this research were chosen using stratified random sampling from less than a thousand prospective teachers in each ITE. These various samples from respondents are from a total population of 2344 in this study. Respondents from ITE A represent the majority of respondents involved in this study (N = 831), followed by ITE B (N = 768) and ITE C (N = 745). When stratified random sampling was applied, 35.3% (n = 117) were chosen from ITE A, 32.9% (n = 109) were from ITE B, and 31.7% (n = 105) were from ITE C.

**Table 1. Samples of Population**

ITE Involved	Population	Proportional Stratified Random Sampling	Percent
ITE A	831	117	35.3
ITE B	768	109	33.0
ITE C	745	105	31.7
Total	2344	331	100.0

Caring leadership is measured using the Survey of Behavioural Characteristics of Caring Teacher Questionnaire developed by Kennesaw State University and endorsed to be used by experts. This questionnaire consists of 22 items in four indicators, which are classroom management, academic support, interpersonal relationships, and respect and trust. All items in this questionnaire use the scale of 1 to 5 to rate the importance of caring. The scale is rated using 1 for being the least important and 5 for being the most important. The Attitude Scale Towards Teaching Profession survey questionnaire was used to discover the attitude using five



subscales, which are career choice, attitudinal development, professional commitment, professional pride, and professional expectation.

All these subscales consist of six items in each subscale with positive and negative items to ensure their reliability. The items employ a Likert scale with an indication to display each item's agreeable indicators (5= strongly agree, 4= agree, 3= undecided, 2= disagree, and 1= strongly disagree). In this questionnaire, 16 positive items and 14 negative items with reverse scores were combined to improve distribution and reduce bias. Using structural equation modeling, the causal relationship between caring leadership and attitude towards the teaching profession was analysed using SmartPLS to develop a model of the relationship of caring leadership and attitude towards the teaching profession.

#### 4. Results

The model of caring leadership that has been developed shows that caring leadership has a relationship with attitudes towards the teaching profession. In this model caring leadership involved all the indicators, while attitude towards the teaching profession only involved three indicators due to low outer loading. To ensure indicator reliability and, ultimately, the reliability and validity of the latent construct. An outer loading below the recommended threshold of 0.70 indicates that the indicator does not explain sufficient variance in the construct, suggesting it may be poorly measuring the intended concept (Ali et al., 2023; Bagga et al., 2023; Haji-Othman & Yusuff, 2022). As shown in the model, the effect of caring leadership on the teaching profession is significant ( $\beta = 0.389$ ,  $p = 0.000$ ). The outer loadings show that all indicators are in the range of  $\beta = 0.746$  to  $\beta = 0.899$ , which supports that the items in the indicators represent the underlying construct.

**Figure 1. The model for the relationship between Caring Leadership on Attitude Towards Teaching Profession**

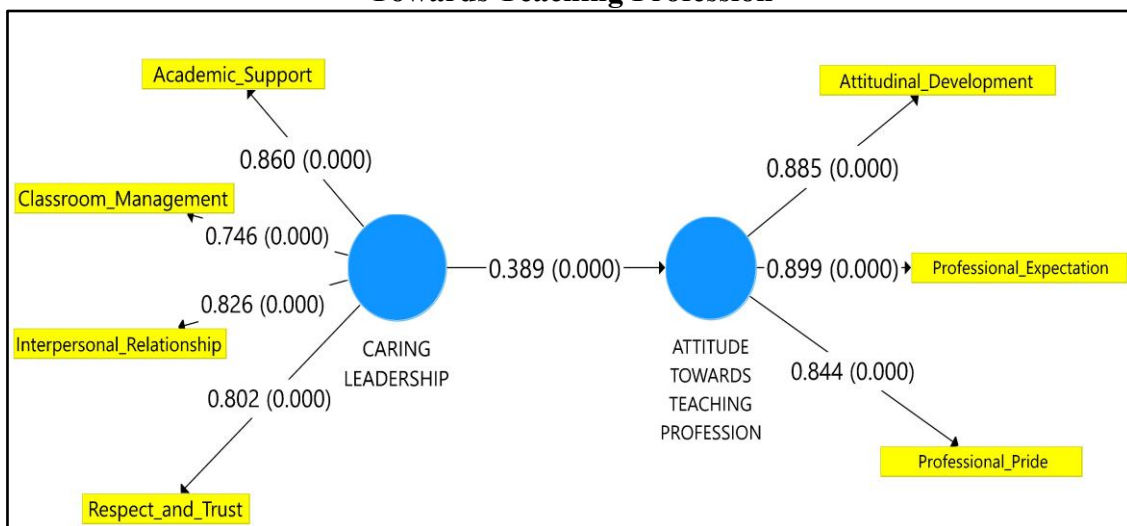


Table 2 indicates that the model shows that caring leadership has a relationship with attitudes towards the teaching profession. Based on this model, results have shown that the relationship between caring leadership and attitude towards the teaching profession is significant ( $\beta = 0.389$ ,  $t = 8.357$ ,  $p < 0.05$ ). This model has met the significant threshold value with a p-value under 0.5 (Ringle et al., 2024).

**Table 2. Structural Equation Modelling (SEM) result for Caring Leadership and Attitude towards Teaching Profession Relationship**

Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
Caring Leadership -> Attitude Towards Teaching Profession	0.389	0.397	0.047	8.357	0.000

## 5. Discussion and Conclusion

This model has been developed to initiate the implementation of caring leadership and attitude towards the teaching profession in higher education settings. This is important to develop a generation of teachers who become leaders in the future with the foundation of caring leadership practices (Azmi, 2025; Nelson, 2025; Wandix-White, 2023; Walls, 2023). At the same time, this model also would be a reference in creating a teacher who has passion for their career to overcome the issues of leadership, especially silent power abuse, when they become a leader. The model of caring leadership and attitude towards the teaching profession suggests ten initiatives to be a framework to guide leadership development.

### a. Leading Through Example.

In educational settings caring leadership should be displayed by the leaders and administrators, including management, teachers and students (Hayes et al., 2022; Khanna et al., 2024; Ryu et al., 2022). Through this good example, educational leaders might set a culture of caring leadership regardless of position, skin colour, age or even academic status. Leaders should actively listen and be concerned about the needs of their employees and show their empathy (Nagler, 2024). Support can be made through offering mentoring, professional guidance, career development opportunities, and resources. Through all this support, a collaborative environment could be established. With a supportive and collaborative environment, this might boost morale and enhance job satisfaction among members of the educational institution (Wright et al., 2022). When leaders lead by example through empathy, appreciation, investment in professional development, and promotion of work-life balance, they inspire teachers to remain passionate, motivated, and committed to their roles in shaping the future generation of caring leaders.

### b. Implement Caring Through Networking

The implementation of caring through networking is not only limited to the student-teacher relationship. Caring should be cultured from top management down to educators and expanded to educational society, including parents (Banwo et al., 2022; Brown et al., 2022; Bufalino, 2025). The responsibility to care integrates third parties like parents and the local community to foster respect for the teaching profession and provide real-world leadership opportunities for aspiring educators. This could be a step forward to give another perspective on practising caring leadership in organisations. Seminars, colloquia, exhibitions or taking part in conferences may help to broaden their view and exchange opinions on practising caring leadership at a broader level. Furthermore, connecting with global networks through conferences and seminars offers new perspectives and best practices (Harris et al., 2023). By leveraging these networks to advocate for resources, policy changes, and support, caring

leaders demonstrate a commitment to the profession, which enhances teachers' sense of value and eventually shapes a new generation of caring educational leaders.

### **c. Caring leadership training through professional development.**

Professional development is essential for cultivating competent and caring educational leaders (Azmi, 2025; Dugan, 2024). To achieve this, policymakers and institutions should implement targeted training modules that develop critical interpersonal skills such as empathy, conflict resolution, and communication. A cornerstone of this approach is a structured mentorship programme that pairs emerging leaders with experienced mentors who model caring leadership, providing guidance and feedback as new skills are applied. Furthermore, education management should actively encourage prospective teachers to participate in collaborative projects, international student exchanges, and specialised webinars focused on caring leadership (Meyer et al., 2023). At the same time, this could be expanded to the school community.

Simultaneously, investment in well-being programmes is crucial to ensure educators feel supported, which in turn enables them to better support others. As a result, encouraging participation in collaborative projects, international exchanges, and specialised webinars exposes future leaders to diverse perspectives and inspires passion for the caring profession (Boyd et al., 2025). In the end, by equipping educators with the skills and confidence to lead with compassion, professional development fosters a greater sense of fulfilment and purpose, positively shaping their attitude and effectiveness within the teaching profession.

### **d. Caring Leadership focusing on changing leaders and Future Leaders Development**

The future of any organisation is intrinsically linked to the quality of its future leaders (Roy et al., 2024; Saha et al., 2023). In higher education, this necessitates that management actively cultivate a capacity for caring leadership through a dedicated student-centred approach. This philosophy requires leaders to focus intently on student needs and welfare, fostering an environment where students themselves can develop into the next generation of caring leaders. Recognising and nurturing student interest in leadership is paramount, ensuring that cultivating these compassionate qualities becomes an institutional priority (Kouzes & Posner, 2024).

To achieve this, organisations should implement targeted leadership development initiatives. These programmes must emphasise a student-centred ethos, incorporating modules that train participants to understand student perspectives, needs, and challenges, thereby enabling them to offer effective support and advocacy. Crucially, this involves fostering a culture of student empowerment by integrating them into decision-making processes, for instance, through appointed student representatives. This practice ensures their voices are heard and provides aspiring leaders with invaluable, indirect training in inclusive governance.

Furthermore, the importance of a supportive learning environment cannot be overstated (Chiu et al., 2023; McCabe et al., 2022). Educational management must ensure that all organisational policies, practices, and physical spaces are conducive to student success and well-being. This involves providing comprehensive resources, support services, and accommodations to promote inclusivity and address diverse needs. By experiencing care directly, students learn to model it, shaping their attitudes and applying these principles to their future professional conduct. Finally, by equipping both current and future educators with the skills to lead with

compassion and integrity, these caring leadership programmes cultivate a culture of excellence that enhances morale, engagement, and satisfaction across the entire teaching profession.

#### **e. Changing And Advocate Caring Leadership Policy**

Policymakers must now prioritise the integration of caring leadership into the core of educational policy to drive meaningful change (Walls, 2023). This chapter posits that caring leadership should be a fundamental pillar aligned with global education reforms, serving as a catalyst for developing more compassionate and effective future leaders. Concrete policies are needed to foster positive attitudes within the teaching profession, including ensuring fair compensation, manageable workloads, and clear career development pathways. Simultaneously, explicit policies should be created to cultivate caring leadership values among emerging talents.

To operationalise this, educational institutions should establish dedicated committees comprising senior leadership and key stakeholders to draft these policies. The process must begin with a thorough assessment of the current leadership culture using surveys, interviews, and data analysis to identify gaps in caring practices (Fischer & Sitkin, 2023). Based on these insights, clear objectives and actionable strategies should be developed, ensuring alignment with the institution's mission and values. The resulting policy proposals must outline specific, measurable changes to existing frameworks.

Once approved, these policies must be communicated effectively across the organisation, with systematic implementation that provides necessary resources and support. A continuous feedback loop, informed by regular assessments, is essential to evaluate impact and refine approaches (Meylani, 2024; Mustoip et al., 2023). By prioritising well-being, collaborative decision-making, and professional growth, such policies can significantly enhance teachers' morale and motivation. When educators feel genuinely valued and supported, they are not only more committed but also become role models, shaping the next generation of leaders through the same culture of care they have experienced.

#### **f. Measurement, Evaluation Assessment and Feedback.**

The systematic measurement of leadership capacity is essential for enhancing the quality of leadership development initiatives (Barthakur et al., 2022; Douglas et al., 2022). This section proposes the development of specific metrics to evaluate the practice of caring leadership and measure attitudinal shifts among in-service teachers. The data derived from such metrics provides a critical evidence base for informed decision-making and the design of targeted improvement programmes.

To ensure ongoing development, regular comprehensive needs assessments should be conducted through surveys and interviews with both current and aspiring leaders (Fink., 2024; Ravaghi et al., 2023). These assessments gauge attitudes towards the teaching profession and evaluate the permeation of caring leadership principles. Establishing robust feedback mechanisms is crucial, as input from leaders and their apprentices serves as a vital reference for calibrating and enhancing professional development programmes. Involving participants in this process fosters a sense of appreciation and ownership.

Furthermore, organisations should institutionalise the celebration of success by publicly recognising and rewarding demonstrations of caring leadership and positive professional

attitudes. This positive reinforcement, when applied continuously, helps elevate standards and fosters a supportive culture. Concurrently, evaluation processes should be designed to encourage self-reflection and the adoption of a growth mindset. When educators are supported in reflecting on their practice and setting developmental goals, it cultivates a sense of agency and resilience, enabling them to view challenges as opportunities for learning (Kilag & Sasan, 2023; Lin et al., 2022). By using a structured cycle of measurement, assessment, and feedback, it promotes caring leadership by recognising effort, supporting growth, building trust, and aligning institutional practices with values of continuous improvement and respect.

#### **g. Research and Innovation using Technology to foster Caring Leadership**

The cultivation of caring future leaders necessitates the strategic integration of technology and research within global educator networks (Miller et al., 2023). Evolving institutional methods, programmes, and cultures to embed caring leadership can unlock intrinsic potential and prepare educators for future roles. Higher education management should leverage technology and online collaboration to design curricula and improve teaching, thereby sustaining passion for the profession and fostering leadership qualities. At the same time, advancing research is critical for deepening the understanding of caring leadership's principles and impact. Studies should explore its relationship with outcomes such as employee engagement and student success (Mallik, 2023). The development of innovative assessment tools, such as validated surveys and instruments, helps to measure caring competencies, providing aspiring leaders with insights into their strengths and areas for growth.

In this suggestion framework, research findings must be translated into practice through evidence-based leadership programmes, integrating curriculum modules and workshops that develop empathy and compassion. Technology plays a central role in this future leaders development (Pawar & Dhupal, 2024) . Therefore, the usage of digital platforms, mobile applications, and virtual simulations can offer interactive, scalable learning experiences tailored to the new generation of leaders (Fullan et al., 2024). Furthermore, action research projects engaging future leaders in implementing and evaluating interventions encourage practical collaboration and contextual adaptation. In the long run, by harnessing research and technology, caring leadership empowers teachers, personalises professional growth, and enhances communication. This creates supportive environments where educators feel valued, thereby fostering a more positive attitude toward the teaching profession and improving both individual and institutional outcomes.

#### **h. Caring Leadership Promotion and Awareness**

Awareness of caring leadership and positive professional attitudes among educators can be effectively promoted through strategic social media engagement and dedicated professional summits (Goncalves & Curado, 2023). These channels serve to disseminate principles and practical exemplars of empathetic, inclusive, and compassionate leadership, thereby enriching the professional development of current and future academic leaders. Social media platforms, such as LinkedIn, Facebook, Threads, TikTok and Instagram, offer potent tools for reaching diverse stakeholders, including students, parents and educational society members. Effective strategies include establishing dedicated accounts that share curated content such as inspirational case studies, research findings, and practical resources related to caring leadership. The use of multimedia formats, including videos, podcasts, and infographics, enhances engagement and shareability. Furthermore, interactive initiatives such as Twitter chats or live sessions facilitate dialogue and participatory learning. Collaboration with

influencers and the strategic use of hashtags can extend reach and reinforce messaging, helping to build a community around caring leadership values (Lohse & Johnson, 2023).

Complementing online efforts, themed summits and conferences provide structured environments for deep engagement. By convening experts and practitioners, these events can articulate clear frameworks for caring leadership and facilitate the exchange of evidence-based strategies. Keynote presentations, panel discussions, and skill-building workshops offer platforms for disseminating knowledge and developing competencies in areas such as emotional intelligence and inclusive decision-making (Bell & Reed, 2022). Additionally, networking sessions and research showcases encourage the sharing of best practices and foster collaborative relationships. In due course, these initiatives aim to positively influence educators' professional attitudes by highlighting successful institutional models and empowering teachers to integrate caring leadership into their practice. By consistently modelling and celebrating caring leadership, such promotion contributes to a more supportive and fulfilling professional culture within educational society.

### **i. Reflect Recognition and Appreciation**

Recognition and appreciation are critical mechanisms for boosting morale and fostering caring leadership within educational institutions (Rubens, 2024). Public acknowledgement enhances leaders' self-esteem and reinforces the value of empathetic, supportive practices. To systematically cultivate these qualities, institutions should integrate structured programmes that include reflective practice, targeted research, and dedicated training for emerging leaders. Implementing formal recognition, such as awards for caring leadership, can incentivise participation and validate efforts in areas like student support and community engagement. Specifically, creating categories for both established and emerging leaders signals institutional commitment and provides aspirational models. Such programmes help institutionalise caring values and encourage behavioural change across all leadership levels.

Furthermore, nurturing appreciation in future leaders involves teaching them to acknowledge team efforts and express genuine gratitude, thereby building an empathetic environment (van Zyl, 2025). Equally important is instilling self-appreciation and self-care, enabling leaders to model resilience and well-being. Therefore, promoting a growth mindset helps frame challenges as learning opportunities, prioritising progress over perfection. Finally, supporting leaders with adequate resources and actively seeking feedback on appreciation practices ensures continuous improvement. By prioritising recognition and self-care, educational institutions can cultivate a sustainable culture of caring leadership that benefits both individual leaders and the broader academic community.

### **j. Experiential Learning & Continuous Improvement**

To build caring leadership capacity, organisational leaders must be open to adaptation and continuous improvement (Ahsan, 2025). Policymakers play a crucial role in this process by regularly updating and enhancing training curricula to align with contemporary demands. Leadership development should extend beyond theoretical knowledge to include practical experiences such as internships, volunteer work, and project-based learning, enabling future leaders to apply their skills in real-world contexts. Emerging leaders should remain informed of current trends, research, and best practices in leadership and organisational development. Active participation in conferences, professional networks, and engagement with thought leaders facilitates ongoing learning and reinforces the principles of caring leadership. Regular

reflection on leadership practices is equally important, allowing individuals and institutions to evaluate progress, acknowledge achievements, and identify areas for growth.

Central to this developmental journey is the cultivation of humility and openness. Leaders who acknowledge their limitations, seek diverse perspectives, and welcome feedback create environments conducive to continuous improvement (Cesarion et al., 2023; Cheng et al., 2023). Such an approach not only enriches their own practice but also positively influences organisational culture. Eventually, caring leadership significantly shapes attitudes within the teaching profession. Through consistent recognition and appreciation, leaders can validate efforts, boost morale, and build trust. This fosters a supportive work environment where teachers feel valued and motivated, thereby enhancing job satisfaction and inspiring excellence across educational institutions.

In conclusion, the development of caring leadership in pre-service teachers necessitates a deliberate and multifaceted strategy that integrates foundational principles with practical application (Amsale et al., 2025). The proposed framework, encompassing leading by example, professional networking, and targeted training, establishes the core ethos of empathetic and supportive leadership. This foundation must be actively reinforced through systemic policy advocacy, robust measurement and feedback mechanisms, and the strategic use of technology for research and innovation (Ahsan, 2025). Furthermore, promoting awareness and recognising caring practices are essential for validating and incentivising this leadership style.

Therefore, the most critical elements are embedding experiential learning opportunities and fostering a culture of continuous improvement and reflective practice. By synthesising these elements through connecting personal development with systemic support and theoretical knowledge with practical reflection in teacher education programmes, we can effectively ensure the cultivation of future educators who are not only proficient instructors but also compassionate, empowering, and caring leaders. This suggested approach is crucial for maintaining caring leadership among teachers who are set to lead educational institutions. It aims to usher in a new era where the well-being of teachers is prioritised and supported by all stakeholders in the field of education.

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# INTEGRATING MORAL VALUES USING INTREPRETIVE STRUCTURAL MODELLING (ISM) TOWARDS RABBANI LEADERSHIP IN EDUCATION: THE REALIZATION OF MADANI AGENDA

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**Abstract:** *Leadership in education must prioritize moral values to realise the MADANI agenda and nurture individuals who excel in both this world and the hereafter. The Intrepretive Structural Modelling (ISM) technique using the Concept Star software via a poll of 11 experts has produced a prototype model. The findings of the study also showed that prioritization of 38 moral value elements was determined through expert consensus. Findings indicate the prioritization of five dimensions in this values-moral based model. The first dimension emphasizes that teaching must be grounded in students' abilities, and it encompasses elements such as a pure heart, integrity, diligence, discipline, responsibility, wisdom, sincerity, rationality, and patience. These ethical-moral values are not only fundamental for teachers. Still, they must also be upheld and practiced by leaders in schools and educational institutions to develop individuals with Karamah Insaniah, who embody humanistic education which is in line with the Ministry of Education's aspiration for the holistic development of individuals, as envisioned in the National Education Philosophy.*

**Keywords:** *Interpretive Structural Modelling (ISM), Moral Values, Leadership, Karamah Insaniah, MADANI*

## DIGITAL TRANSFORMATION: REVOLUTIONISING TEACHERS' PRACTICES

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**Abstract:** MADANI emphasises digital literacy and 21st-century skills, while TS25 program promotes student development through meaningful learning, and the Digital Education Policy empowers educators to integrate technology. In response, SK Bukit Guntong transformed its co-curricular management using the Integrated System of e-Co-Curriculum Management Applications (SIAePK) via the DELIMa platform, which is accessible through the school's dashboard. This initiative reformed teaching practices by encouraging teachers to step out of their comfort zones and balance digital skills, attitudes, and knowledge in shaping behaviour and habits. Its objectives were to increase teacher productivity in teaching, learning, and management; strengthen adaptability to digital education; foster inclusive growth in psychology, cognition, and values; instil digital discipline; and support holistic student development. The transformation applied the Plan-Do-Check-Act principle through the Gemba Walk method using the Theory of Change, complemented by the Hooked Model for habit formation, Covey's Circle of Influence for adaptability and solution-oriented leadership, and the Momentum Pendulum Model to sustain habits. Data were analysed qualitatively using 5S Achievement Levels and Teacher Change Levels, confirming that the initiative reformed practices by shaping behaviours and habits that influenced services, innovation, products, teaching models, organisational structures, resource chains, and delivery channels. Ultimately, this digital transformation pushed teachers beyond their psychological and cognitive comfort zones and, with supportive guidance through the 5S System, cultivated habits that balance digital skills, attitudes, and knowledge, providing a blueprint for reforming teaching practices.

**Keywords:** Digital Transformation, Digital Reform, TS25, Teaching Practices, Co-Curricular Management.

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### INTRODUCTION

MADANI underscores the critical importance of digital literacy and 21<sup>st</sup> century competencies. Education must ensure that teachers and school communities are equipped with the requisite skills to thrive in the digital economy, including critical thinking, creativity, and problem-solving. To this end, TS25, through Module 7: Digital Tools and Resources, was introduced to promote student development via meaningful learning experiences, thereby strengthening the foundation for student success and achievement. This initiative entails optimising the use of digital tools and resources while enhancing the leadership role of school administrators in cultivating a school ecosystem that supports and sustains meaningful learning capacity (MOE, 2023).

SK Bukit Guntong (TS25 Cohort 7) has taken the initiative to optimise digitalisation in co-curricular management through the Integrated System of e-Co-Curriculum Management Applications (SIAePK), an innovation that transforms teaching and learning by aligning co-curricular strategies and initiatives with the objectives of the Digital Education Policy (MOE, 2023). In this context, the Malaysia MADANI concept emphasises digital transformation in education management, highlighting the integration of technology across all aspects including administration to promote well-being, social justice, and shared prosperity.

Accordingly, SIAePK was developed in June 2024 through the utilisation of DELIMa as a school-level database system, with Google Sites serving as the primary platform. The system is fully integrated with various Google applications, including Google Docs, Google Drive, Google Forms, Google Slides, Google Sheets, Google Calendar, and Google Data Studio. This integration enables the centralised and systematic management of co-curricular activities and student achievement outcomes. Teachers are now able to access SIAePK via the school dashboard, either through personal computers or mobile applications on their smartphones.

Therefore, this digital transformation enhances the collection and analysis of co-curricular data, including student performance, programme effectiveness, and resource requirements. The resulting insights support more informed decision-making in co-curricular management and contribute to improving the quality of the Physical, Sports, and Co-Curriculum Assessment (PAJSK).

## LITERATURE REVIEW

The intersection of advances in information and communication technology (ICT) and leadership has given rise to the concept of digital leadership, defined as a process of social influence mediated by advanced information technology (AIT). Over the past decade, digital leadership has been conceptualised in multiple ways: as the integration of electronic and traditional communication methods, necessitating the effective use of ICT (Van Wart et al., 2019; Abdul Razak et al., 2022); as an emerging field of knowledge (Jameson, 2013); as the convergence of digital influence and technological leadership (Fonstad, 2013); and as the blending of mobile technology with traditional leadership styles (Lee & Berente, 2012). It has also been described as the application of computer technologies to accomplish tasks, make decisions, and solve problems (Hinds & Kiesler, 2002); as a mechanism for influencing changes in attitudes, emotions, cognition, behaviours, and performance at the individual, group, and organisational levels—even in the absence of face-to-face interaction (Avolio & Kahai, 2003; Avolio, Kahai & Dodge, 2003); and as requiring leaders to attain leadership objectives through the adaptation of computer technologies in management (DasGupta, 2011).

The key competencies for digital leadership include building trust, fostering cohesion, promoting group integration, effective communication, guiding organisations toward goals, agility, readiness, sound decision-making, adaptability to environmental change, and technological proficiency (Maduka et al., 2018). Digital leaders must also practise active listening, inspire others, exercise sound judgement, delegate effectively, instil responsibility, promote mutual respect, and motivate subordinates to achieve objectives (Surji, 2014). Beyond these, digital leadership involves integrating digitalisation into leadership practices and inspiring teachers to embrace and adapt to transformation (Gardner et al., 2010).

The digitalisation policy in education underscores the significance of digitalisation for effective leadership (Malaysia Education Blueprint, MEB 2013–2025). Under the fifth shift of the MEB, high-performing leaders are strategically placed in schools, while the third wave emphasises the enhancement of ICT usage among both teachers and leaders. A circular issued by the Ministry of Education Malaysia highlights that there are 173 ICT applications which leaders and teachers are required to master. The urgency for change has been further reinforced through the implementation of the School Transformation Programme, with the target of full adoption across all schools by 2025 (MOE, 2021).

The programme seeks to build high-quality schools and holistic student development by promoting best practices in teaching, advancing pedagogical and leadership expertise, and creating effective learning environments, supported by strong leadership, optimised teacher–student potential, and stakeholder engagement (Abdul Razak, 2022). Within this framework, digital leadership is vital, as school administrators must guide the integration of technology into academic and co-curricular practices. Their readiness and capacity to embrace digitalisation are essential, with studies emphasising the importance of digital competency (Reis-Andersson, 2023) and showing how cognitive and psychological acceptance of digitalisation strengthens management skills and drives transformation (Hartati et al., 2023).

Digitalisation is critical for aligning teacher competency and student development with the demands of the digital age (Arham et al., 2022), as digital components shape teacher performance and student outcomes (Timan et al., 2022). The digital competence of school administrators is pivotal in sustaining this process (Hartati et al., 2023). Since digital transformation should conserve time, cost, and energy (Lindh & Nolin, 2016; Rueda et al., 2017; Sunley et al., 2019; Shen, 2020; Biasi et al., 2020; Ramirez-Montoya, 2020), this study integrates Google applications to support remote, cost-free documentation and reporting, reduce working time, and enable SIAePK to function effectively as a cloud-based system.

To ensure the effective implementation of digitalisation in schools, teachers' workloads must be given due consideration in light of their multifaceted responsibilities (Cladellas & Castelló, 2011; Pace et al., 2019; Nur Aiman, 2021). Recent studies in educational psychology indicate that perceptions of excessive workload contribute to stress and anxiety, particularly when support is insufficient (Ford & Jin, 2015; Pace et al., 2016; Nur Aiman, 2021). Research further demonstrates that workload and stress factors diminish the overall quality of teachers' work (Green, 2018; Nur Aiman, 2021) and adversely affect their personal and social lives (Bonaiuto et al., 2019; Nur Aiman, 2021).

These findings indicate that teachers who perceive their workload as overwhelming are unable to perform their duties effectively, with workload and work-related stress significantly affecting efficiency, performance, and personal well-being (Firdaus et al., 2019; Nur Aiman, 2021). Since documentation is an ongoing process requiring efficient work structures and systematic time management (Löfgren, 2014; Viernickel et al., 2013; Nur Aiman, 2021), studies show that teachers who adopt specific digital platform strategies can produce more meaningful and effective documentation (Lindh & Nolin, 2016; Keen, 2015; Knauf, 2019).

Modern organisational theorists such as Senge (2006), Fullan (2001), and Wenger (2000) highlight the impact of globalisation and technological advancement on organisational relationships. In response, and in line with the Industrial Revolution 5.0 in education, school leaders must drive digital transformation by integrating technology into management practices, ensuring cost, time, and energy efficiency (Ibrahim, 2014; Sheninger, 2019; Yusof et al., 2019;

Nur Aiman, 2021), while holistically enhancing teacher competencies. This study was therefore undertaken to advance digital transformation in reforming teaching and learning practices.

## PROBLEM STATEMENT

The Malaysian education system continues to face significant challenges in adapting to the digital era, raising concerns among stakeholders not only about academic quality but also about co-curricular development (Zainal Abidin, 2025). Findings from a 2024 assessment of 297,018 teachers revealed that 6,442 (2.2%) were categorised at the Advanced level, 118,651 (39.95%) at the Intermediate level, and 171,925 (57.9%) at the Basic level (MOE, 2023). By 31 December 2024, the total number of teachers assessed had increased to 403,618, with results indicating that 23.9% were at the Basic level, 74.3% at the Intermediate level, and only 1.8% at the Advanced level.

However, an analysis of survey data on the psychological perspectives of teachers regarding digitalisation at SK Bukit Guntong illustrates this situation through a “Comfort Zone Map” (Figure 1), which visually represents the psychological stages teachers experience when moving beyond their comfort zones. Within this zone, teachers are neither actively engaged in acquiring new knowledge nor do they readily embrace challenges. Instead, they confine themselves to familiar activities, which create a sense of being “in control” of their environment. To address this, a transformation was initiated to guide teachers out of their comfort zones, thereby reforming teaching and learning practices.

In addition, analysis from the “Gemba Walk” reflects the Dunning–Kruger effect, a cognitive bias whereby less-skilled teachers tend to display overconfidence due to their limited awareness of what they do not yet know. Conversely, highly skilled teachers often demonstrate lower confidence, as they recognise the breadth and complexity of the field. Deeper understanding develops progressively through practice, training, and self-awareness (Figure 2). Moreover, the stages of teacher change are illustrated in Figure 3. Performance improvement was therefore a central motivation for this transformation, designed to guide teachers beyond their comfort zones, enabling them to realise their full potential, achieve professional goals, and pursue more meaningful and fulfilling careers (Wooll, 2022).

Figure 1: Teacher Comfort Zone Map adapted from Funke, T. (2025)

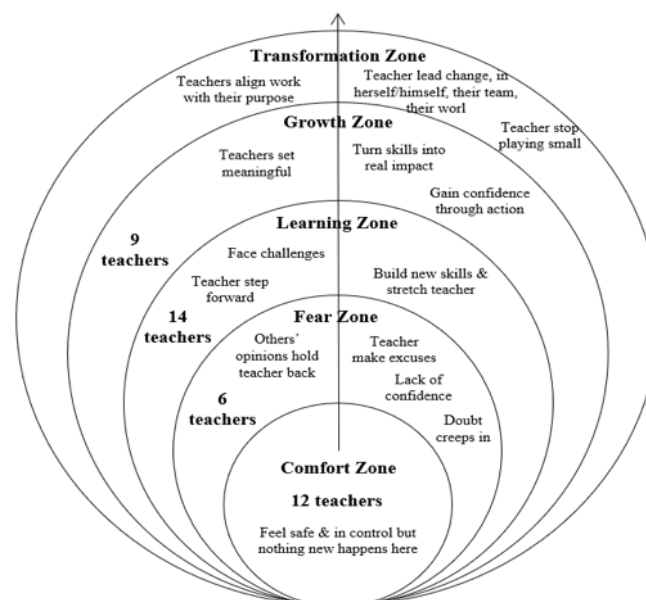


Figure 2: Level of Cognitive Tendency

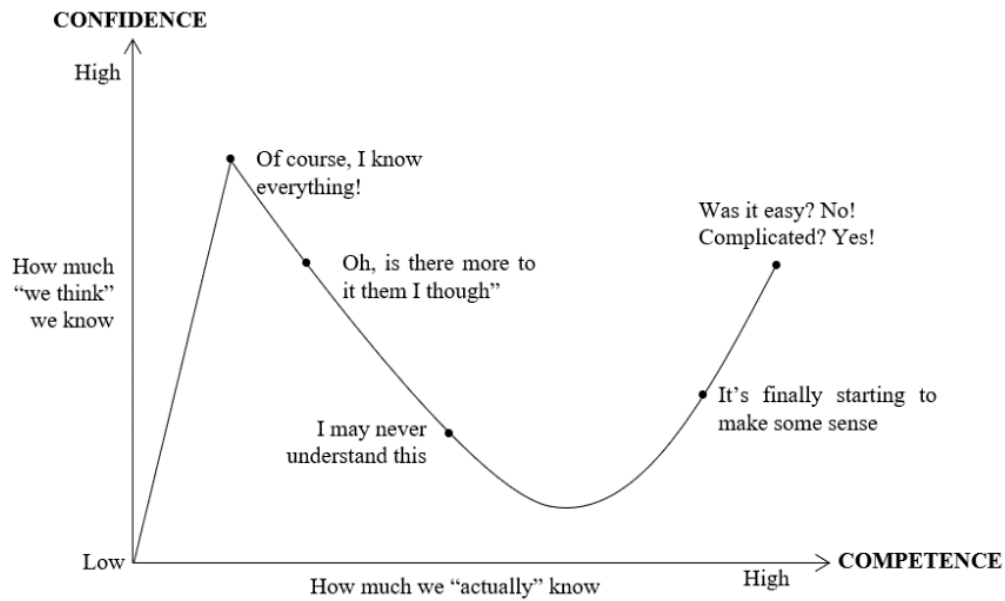
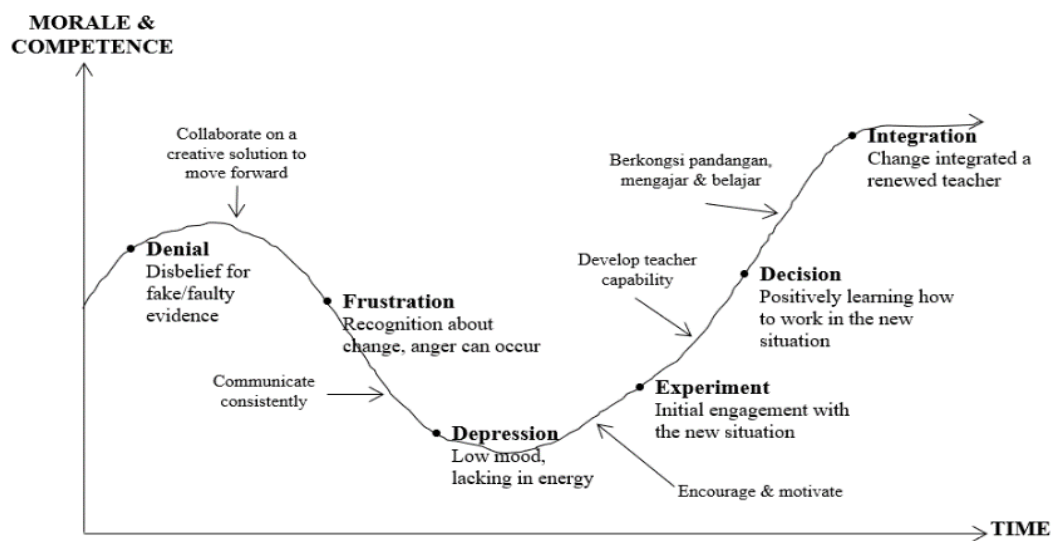


Figure 3: The Stages of Teacher Change



## OBJECTIVES

The specific objectives of this study are to:

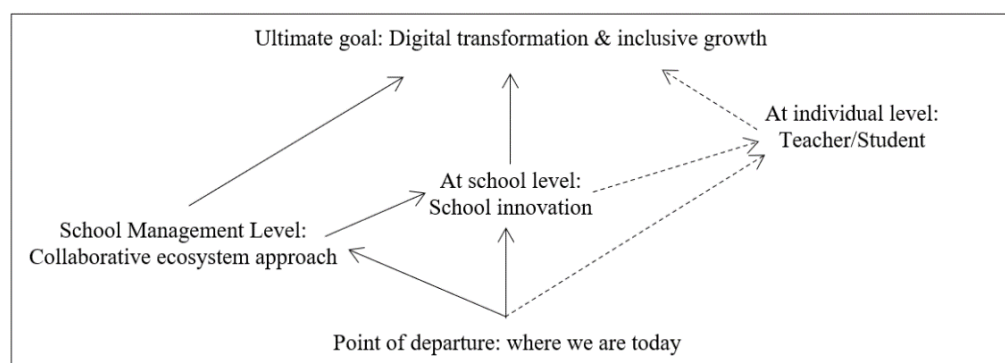
1. Enhance teachers' productivity in teaching, learning, and co-curricular management.
2. Strengthen teachers' capacity to adapt to digital education.
3. Promote inclusive growth among teachers in terms of psychology, cognition, and values.
4. Cultivate practices (teachers' digital discipline).
5. Enhance students' holistic development.



## THEORY

The Theory of Change (ToC) provides a structured framework explaining how and why desired change is expected to occur, bridging the gap between current practices and digitalisation goals to achieve long-term outcomes (Taplin & Clark, 2012; Oej & Hulsegge, 2023). In this study, a conceptual framework was developed based on teacher feedback and experiences to guide digital transformation in schools. Grounded in the Plan–Do–Check–Act principle, the framework is flexible and adaptable, enabling continuous refinement as understanding deepens, and supports transformation across thinking, emotions, planning, habits, commitment, teaching, learning, and professional development (Figure 4).

Figure 4: Digital Transformation Framework (2023)



## MODEL

This study applies the Hooked Model, a four-phase habit-formation loop, to reform teachers' digital practices. In Phase 1, teachers are encouraged to engage in habit formation by developing internal mapping or mental imagery that fosters positive psychological and cognitive responses, reinforced by external smart triggers (e.g., emails, notifications) that guide them to the next phase. In Phase 2, teachers receive guided support to adjust or develop behaviours, focusing on core practices while eliminating unnecessary steps through visual cues that serve as reference frameworks. This streamlines actions, reduces time and effort, enhances motivation, and facilitates the acquisition of incentives.

Phase 3, teachers achieve unpredictable outcomes through the random use of new content or feedback; mixing different types of rewards (social praise, new information, progress); building new expectations; and exploring new discoveries to satisfy curiosity. Phase 4, teachers place value in each outcome/product; personalise experiences; store progress or preferences for specific behaviours; demonstrate how inputs improve future results; and link improved actions to identify appropriate behaviours according to current needs, thus shaping certain habits.

The four-phase Hooked Model loop establishes desired behaviours to address specific problems, cycling continuously as triggers (Phase 1) catalyse new actions that progress into stored and refined behaviours (Phase 4), ultimately forming habits or digital practice discipline in teachers' professional practices. In this study, behaviour formation evolves into sustained habit formation in teaching and learning, reinforced by the Momentum Pendulum Model to

ensure consistency, which is often lacking in reform efforts. The Momentum Pendulum Model consists of five phases: the Decision Phase (making choices and committing to goals), the Planning Phase (breaking goals into structured, actionable steps), the Initiation Phase (taking the first concrete action to overcome inertia), the Consistency Phase (sustaining progress through repeated actions), and the Acceleration Phase (building strong momentum, making habits more effective, and producing tangible outcomes).

## METHODOLOGY

This study was carried out qualitatively among teachers at SK Bukit Guntong by applying the “Gemba Walk” method, which is the practice where leadership takes time to regularly walk through the field where the “real work” of teachers and students is being carried out. This allows leaders to identify, review, and experience the teaching and learning process directly, observe how all co-curricular units operate, and determine whether everything is functioning according to standards.

The Gemba Walk was conducted to observe teaching and learning processes, with teachers informed in advance and encouraged to engage in discussions with school leaders while sharing their perspectives. They were guided to step beyond their psychological comfort zones through the 5S System (Sort, Set in Order, Shine, Standardise, Sustain), supported by four strategic foundations designed to strengthen cognitive readiness and competency (Figure 5), with transformation steps outlined in Figure 6. Data were analysed using the 5S Achievement Levels and Teacher Change Levels. In addition, Stephen Covey’s Circle of Influence was applied to empower teachers to adapt by focusing on controllable factors and avoiding wasted effort on those beyond their control, enabling school leaders to remain solution-oriented in addressing challenges.

Figure 5: Strategic foundation

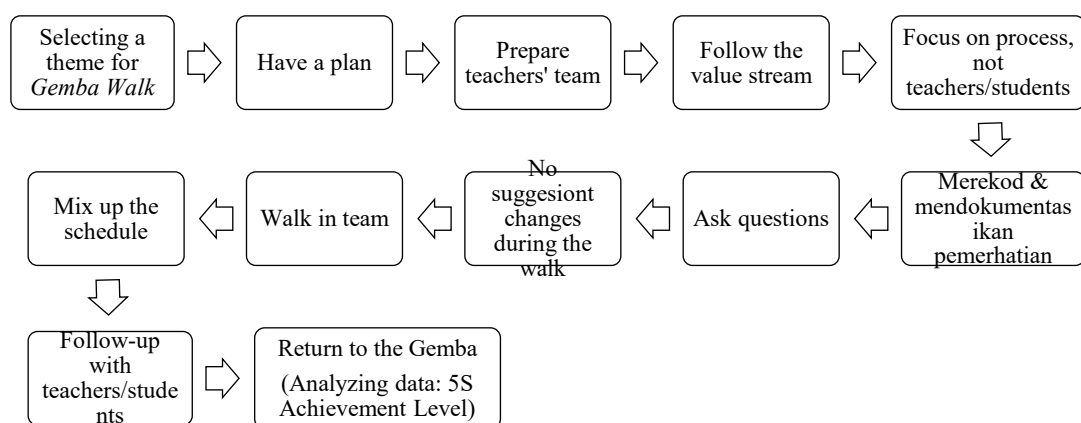


Figure 6: Research implementation steps



## FINDINGS AND DISCUSSION

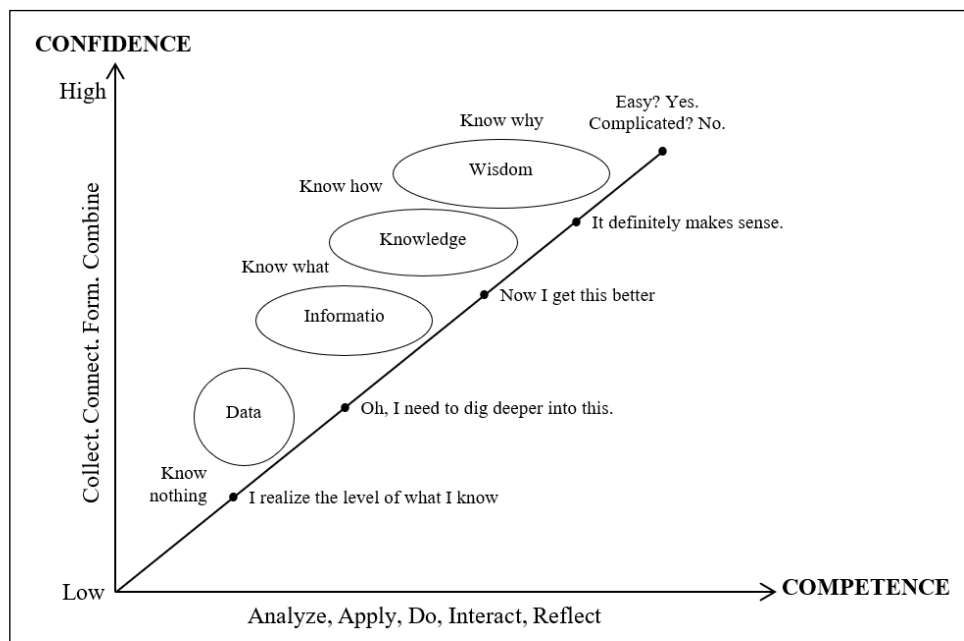
This digital transformation has strengthened teachers' competencies in managing digital change and integrating technology into co-curricular teaching and learning. Analysis of the findings (Table 1) shows that three teachers moved proactively—two from the Comfort Zone directly into the Learning Zone and one from the Fear Zone into the Growth Zone. The process also shifted three teachers from the Learning Zone into the Growth Zone and a further five into the Transformation Zone. These movements reflect teachers' growing confidence in embracing digitalisation both psychologically and cognitively, which in turn enhances their competence in applying digital practices in co-curricular management (Figure 7) and contributes to improved student outcomes.

The findings also reveal that teachers' movement out of the Comfort Zone responded positively to the 5S System (Table 1), which acted as a driver of change, while digital transformation served as a catalyst for reforming teaching practices. This aligns with earlier studies by Hinds & Kiesler (2002), Avolio & Kahai (2003), Avolio, Kahai & Dodge (2003), and Maduka et al. (2018), demonstrating that teachers have cognitively and psychologically embraced digitalisation. Furthermore, it supports the view of Timan et al. (2022), Arham et al. (2022), and Hartati et al. (2023), who emphasise the necessity of digitalisation for all.

Table 1: Analysis of Findings Based on the Teacher Comfort Zone Map, 5S Achievement Level, and Teacher Change Level

		THE NUMBER OF TEACHERS	
		PRE-TEST	POST TEST
TEACHER'S COMFORT ZONE	Comfort Zone	12	5
	Fear Zone	6	5
	Learning Zone	14	16
	Growth Zone	9	10
	Transformation Zone	-	5
5S TEACHER ACHIEVEMENT LEVEL	Level 1	12	-
	Level 2	12	-
	Level 3	17	10
	Level 4	-	26
	level 5	-	5
THE LEVEL OF TEACHER CHANGE	Denial	18	-
	Frustration	-	-
	Depression	-	-
	Experiment	23	5
	Decision	-	26
	Integration	-	10

Furthermore, teachers' movement out of their comfort zones is the result of the success of digital transformation, which **reduces teachers' workload, provides flexibility in time and energy, incurs no cost, and is more efficient**. These outcomes are consistent with the literature of Cladellas & Castelló (2011), Lindh & Nolin (2016), Rueda et al. (2017), Sunley et al. (2019), Pace et al. (2019), Bonaiuto et al. (2019), Shen (2020), Biasi et al. (2020), Ramirez-Montoya (2020), and Nur Aiman (2021).



This demonstrates the balance between skills (what teachers can do), attitude (how teachers' approach), and knowledge (what teachers know), resulting from the continuity of teachers' understanding in carrying out teaching and learning as well as managing co-curricular activities that reshape their practices.

The reform of teachers' teaching and learning practices has an impact in the following contexts:

- Service: Enhances how the school provides services to students, parents, and stakeholders.
- Innovation Processes: Improves the school's internal methods, including streamlining output/result processes, optimizing workflows, and implementing new technologies to increase efficiency.
- Products: Improves the quality of outcomes and new services, involving continuous enhancement of existing results, services, and processes, as well as boosting performance.
- Teaching and Learning Models: Transforms how schools create, deliver, and capture value/character among students, teachers, and the school community, including exploring new strategies, value/character streams, and smart partnerships.
- Organization: Transforms the school's structure, management, and culture, including implementing new organizational structures for teaching and learning, improving communication and collaboration, and fostering a more innovative culture.
- Innovation in Teaching/Learning Material & Resource Chains: Improves the flow of resources and materials in the teaching and learning chain by optimizing logistics, sourcing new resources, and implementing new technologies to boost efficiency.
- Teaching and Learning Channels: Explores new ways of delivering teaching and learning or services to students/parents/stakeholders.

The impact of this reform in teachers' practices reflects an increase in professionalism, innovation culture, and collaboration, which becomes an added value in external evaluations while enhancing the school's image as more professional and appealing. Moreover, it supports the Malaysia Education Development Plan and the Digital Education Policy, aligned with the goal of producing a digitally literate MADANI generation that is globally competitive.

## **CONCLUSION AND RECOMMENDATION**

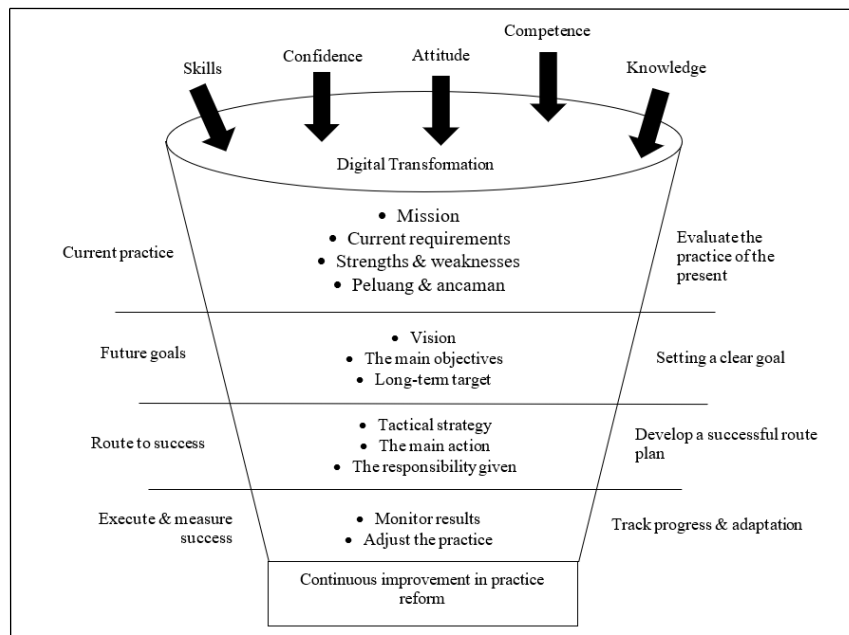
This digital transformation successfully guided teachers out of their comfort zones with support and guidance from all stakeholders, reforming their teaching, learning, and co-curricular management practices through a balance of digital skills, attitudes, and knowledge. In conclusion, this digital transformation has produced a blueprint for reforming teachers' practices in teaching, learning, and co-curricular management (Figure 8).

In addressing the research objectives, the outcomes are as follows:

- Enhancing teachers' productivity: When teachers take on new challenges or try different approaches to familiar tasks, they can increase productivity. This helps them realize their true potential, feel confident in handling greater responsibilities, and deliver better results.
- Improving teachers' adaptability: New experiences help teachers become better at dealing with changes in the digital world. They remain analytical and focused when faced with new challenges and improve their decision-making abilities in specific situations.

- Promoting inclusive growth: Regardless of outcomes, teachers can expand their experiences, knowledge, and skills when stepping out of their comfort zones. This leads to professional and personal growth.
- Increasing teachers' understanding of the Dunning-Kruger effect: Understanding the Dunning-Kruger effect in schools can foster a culture of humility, continuous learning, and constructive feedback, benefiting everyone involved.

Figure 8: Blueprint for reforming teaching practices



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# DIGITAL TRANSFORMATION IN EDUCATION; BARRIERS, OPPORTUNITIES AND IMPACT ON STUDENT ACHIEVEMENT

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**Abstract:** *This study navigates the barriers, opportunities, and impacts of digital transformation in education, with particular emphasis on its influence on student achievement. The research seeks to understand how technology integration shapes learning outcomes, engagement, and skill development, while identifying the factors that either support or hinder its effective implementation. Employing a mixed-method research design, the study combined quantitative surveys involving 10 teachers and 40 students with qualitative interviews conducted with several parents. Data collection was carried out over a three-month period, and the findings were examined using descriptive statistics to determine the relationship between digital transformation initiatives and student performance. The results indicate that the main barriers to successful digital transformation include inadequate infrastructure, inconsistent internet connectivity, and limited teacher digital competence. Nevertheless, the study also highlights significant opportunities, such as increased access to diverse learning resources, enhanced collaboration through digital platforms, and the potential for personalized learning tailored to students' needs. Quantitative analysis reveals a positive correlation between effective technology integration and student achievement, particularly in the areas of problem-solving, engagement, and self-directed learning. However, the degree of impact varies considerably depending on school readiness and teacher capability. In conclusion, as a leader the findings suggest that while digital transformation has considerable potential to improve educational outcomes, its success depends on strategic planning, targeted teacher training, and equitable access to technological resources. Addressing infrastructure shortcomings and closing digital literacy gaps are crucial to ensuring that the benefits of digitalization are shared equitably. The study recommends close collaboration between school leaders, and communities to make digital transformation an inclusive driver of enhanced student performance.*

**Keywords:** *Digital transformation, Education, Student achievement, Technology integration, Teacher competence*

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## INTRODUCTION

The rapid advancement of digital technologies has profoundly reshaped the landscape of education, driving a paradigm shift from traditional teaching methods to technology-enhanced learning environments. Digital transformation in education refers to the strategic integration of digital tools, platforms, and innovative pedagogies aimed at improving teaching efficiency, learning experiences, and educational outcomes. It encompasses a wide range of initiatives, including the use of online learning platforms, interactive digital content, artificial intelligence (AI) in personalized learning, data-driven decision-making, and virtual collaboration tools.

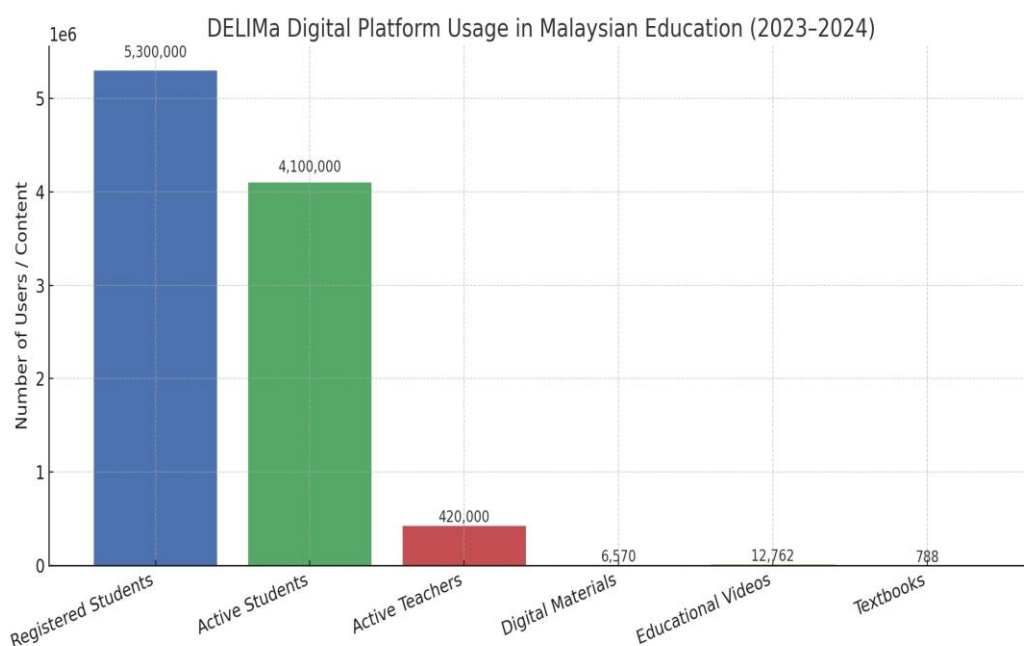
While the potential of digital transformation is vast—offering opportunities for inclusive access, real-time feedback, and enhanced engagement—it is not without its challenges. Educational institutions often encounter barriers such as insufficient infrastructure, lack of teacher training, resistance to change, and disparities in access to technology. Moreover, the success of digital transformation is closely linked to how effectively these obstacles are addressed and how well technology aligns with curriculum goals.

Understanding the barriers, opportunities, and impact of digital transformation is critical for educators, policymakers, and stakeholders who aim to foster environments where students can thrive. This study explores the key factors that hinder or facilitate digital integration, examines the opportunities it presents for innovative teaching and learning practices, and analyzes its measurable effects on student achievement, engagement, and skill development in the 21st-century education system.

## LITERATURE REVIEW

A study in primary schools at Kluang explored how principals' innovative leadership in using digital tools—aligned with the Malaysian Education Quality Standard (MEQS)—streamlined administrative tasks, sped up communication, and enabled data-driven decision-making. This modernization led to a more responsive and cohesive school environment, enhancing overall educational quality and indirectly supporting student learning. Digital transformation in education also refers to the integration of digital technologies into teaching and learning processes to enhance educational quality, student engagement, and academic performance. This literature review explores the digital transformation in Malaysian education, with a focus on primary schools. It examines barriers, opportunities, and the impact on student achievement. Data from the DELIMa platform (2023–2024) and real-world case studies are integrated to provide an authentic overview of the national digital learning landscape.

### DELIMa Platform Usage (2023–2024)



#### Based on data surveyed:

**SK Canossian Convent Kluang:** Successfully implemented DELIMa for hybrid teaching, reporting a 30% improvement in student engagement but still not achieve because of the information technology facilities in school need to improve.

## Barriers

Key challenges identified in the literature include:

- I. **Limited Digital Literacy:** Teachers and students often lack the necessary skills to effectively utilize digital tools.
- II. **Institutional and Bureaucratic Constraints:** Slow decision-making processes and resistance to change delay technology adoption.
- III. **Inequitable Access and Infrastructure:** Students from underprivileged backgrounds often lack devices, internet access, or digital competencies.
- IV. **Motivational and Social Challenges:** Excessive reliance on digital platforms can lead to reduced personal interaction, isolation, and low motivation.
- V. **Technical and Resource Limitations:** Frequent technical disruptions and insufficient support reduce teaching effectiveness.

## Opportunities

Digital transformation also creates significant opportunities:

- I. **Enhanced Engagement and Teaching Innovation:** Schools implementing digital tools have reported higher levels of student interaction and teacher creativity.
- II. **AI and Adaptive Learning Platforms:** These tools can personalize learning, increasing focus and improving test scores, particularly in STEM subjects.
- III. **Curriculum Redesign and Inclusive Learning:** Digital transformation enables flexible curricula, Massive Open Online Courses (MOOCs), and hybrid learning environments.
- IV. **Lifelong Learning and Flexible Assessment:** Digital tools promote continuous skill development and alternative forms of assessment.

## Impact on student achievement

The impact of digital transformation varies:

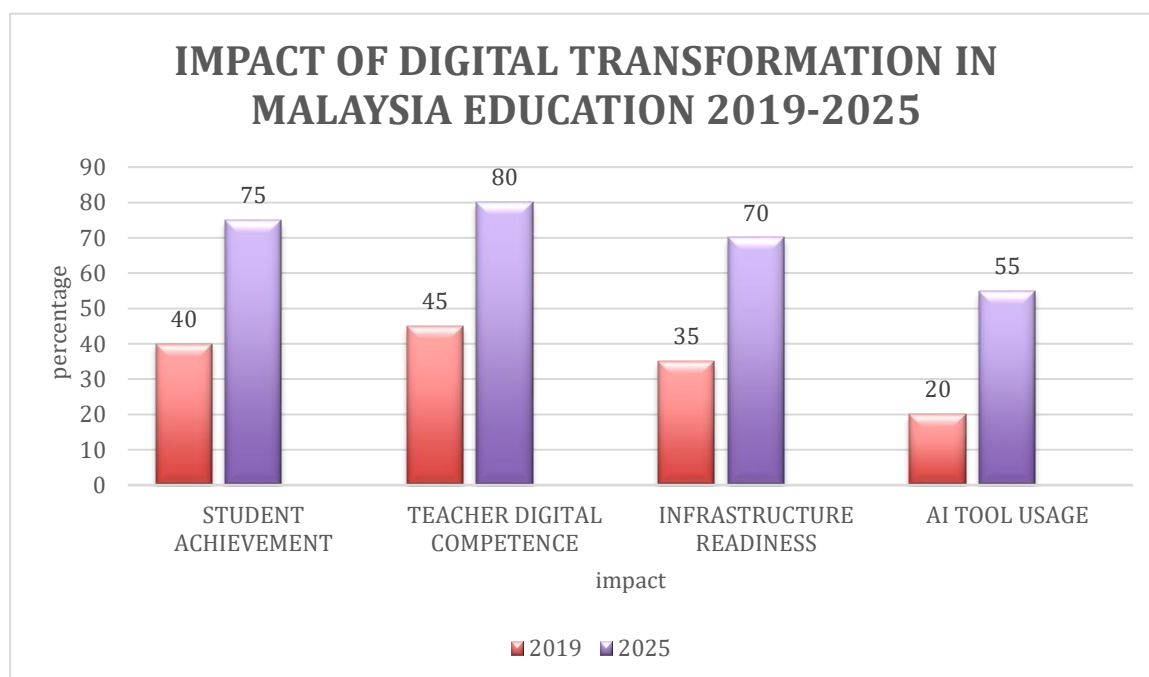
- **Improved Engagement and Grades:** Digital learning environments increase participation and, in many cases, lead to better academic results.
- **Subject-Specific Gains:** Stronger improvements are often observed in STEM-related subjects compared to humanities.
- **Equity Challenges:** Unequal access to technology creates a performance gap among students.
- **Flexibility and Self-Paced Learning:** Students benefit from on-demand resources but may struggle with self-regulation.

Digital transformation in Malaysian education shows promising progress, especially through DELiMa. While barriers remain—primarily in rural infrastructure and teacher training—government initiatives and private sector investments are accelerating adoption. The impact is visible in higher student engagement, better resource accessibility, and improved teacher readiness.

## TABLE AND FIGURES

Aspect	Details & Examples (Malaysia)
<b>Barriers</b>	<ul style="list-style-type: none"> <li>• Limited internet in rural Sabah &amp; Sarawak</li> <li>• Insufficient devices (tablets/laptops)</li> <li>• Teachers with low digital literacy</li> <li>• Uneven school infrastructure</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>• DELIMa platform with 5.3M registered users (2023)</li> <li>• AI tools (Gemini, ChatGPT, Conker AI)</li> <li>• RM185.3B digital investments (2021–2024)</li> <li>• Teacher training programs</li> </ul>
<b>Impact on Students</b>	<ul style="list-style-type: none"> <li>• 85% student adoption of DELIMa</li> <li>• 30% increase in engagement at SK Canossian Convent Kluang</li> <li>• Enhanced access to 788 textbooks &amp; 12,762 videos using digital classroom in DELIMa</li> </ul>

The table presents three key areas of digital transformation in Malaysian primary education: barriers, opportunities, and impact on students. Barriers include limited internet access in rural areas such as Sabah and Sarawak, insufficient devices, low digital literacy among teachers, and uneven school infrastructure. Opportunities are driven by the DELIMa platform with 5.3 million users in 2023, integration of AI tools like Gemini and ChatGPT, government investment amounting to RM185.3 billion from 2021 to 2024, and ongoing teacher training programs. The impact on students is reflected in 85% adoption of the DELIMa platform, a 30% increase in engagement at schools such as SK Canossian Convent Kluang, improved individualized learning through AI tools, and access to 788 textbooks and 12,762 videos.



The chart illustrates how digital transformation has improved key indicators in Malaysian primary schools. Student engagement rose from 40% to 75%, teacher digital competence increased from 45% to 80%, infrastructure readiness improved from 35% to 70%, and AI tools usage expanded from 20% to 55%. These improvements demonstrate the positive effect of digital initiatives between 2019 and 2025.

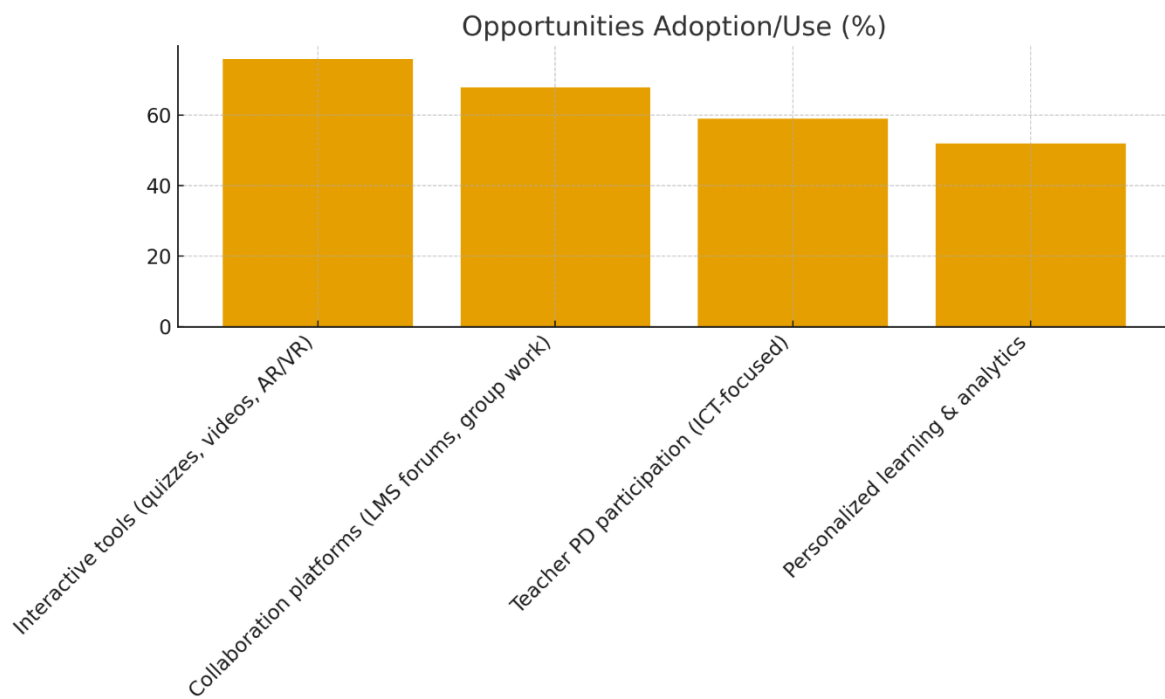
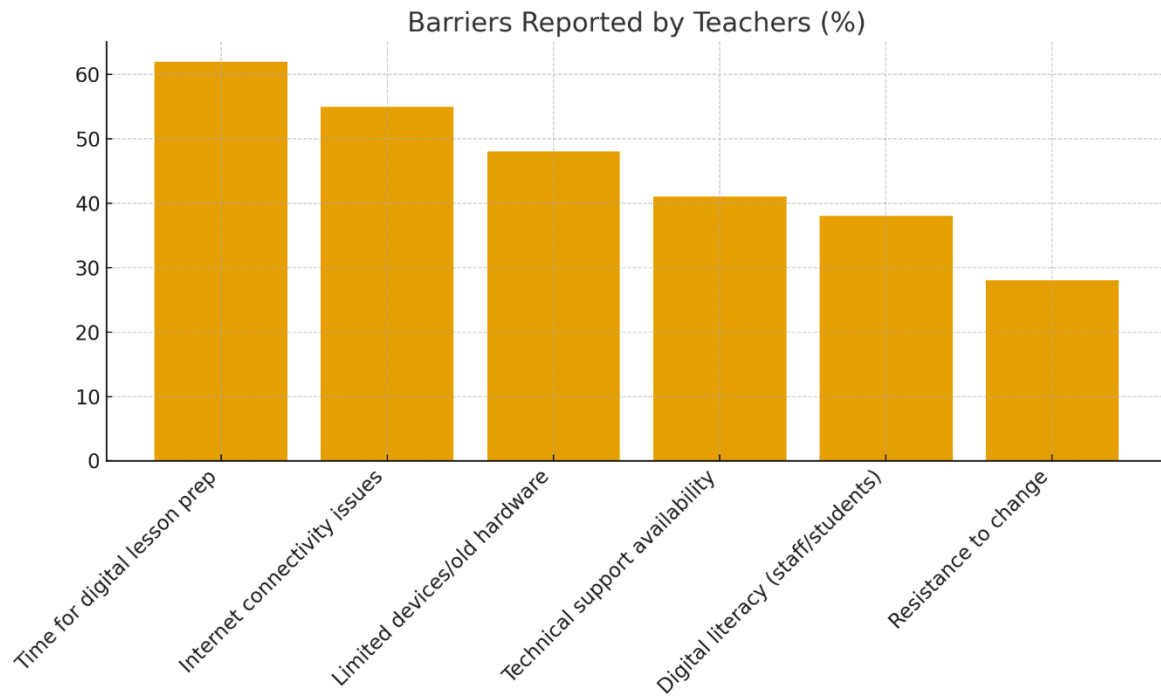
## RESEARCH METHODOLOGY

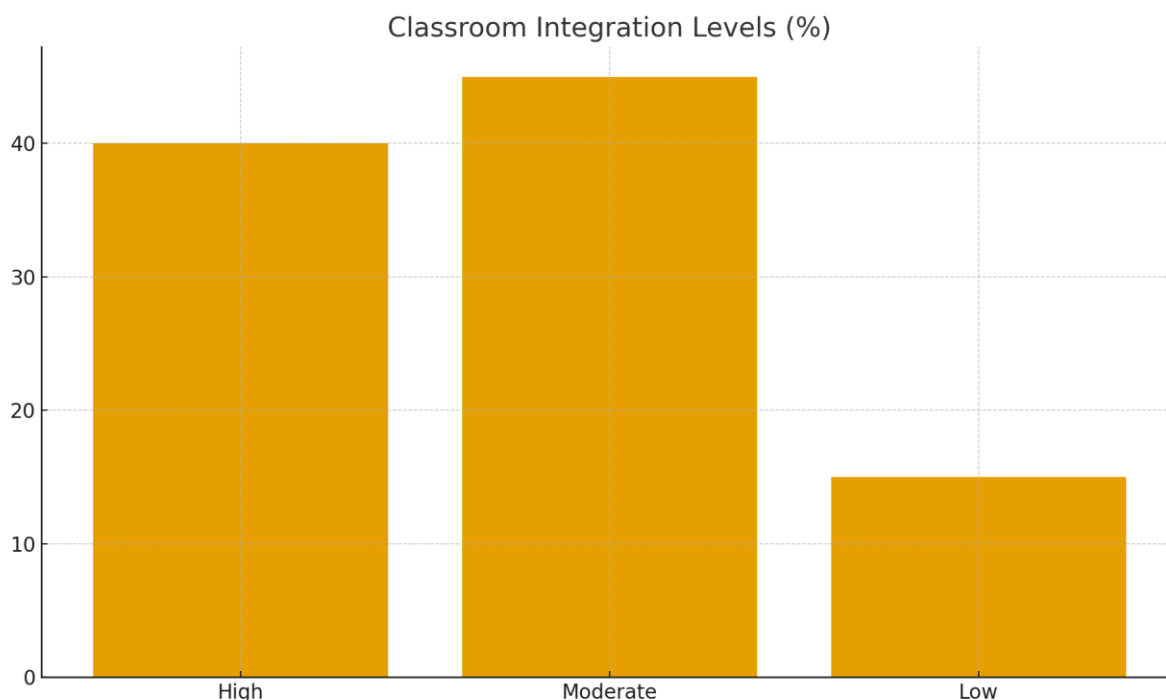
Type of Data	Method	Description
<b>Quantitative Data</b>	Online Surveys	Based on usage of the DELIMa platform to measure digital education implementation and user engagement.
	Semi-Structured Interviews	Conducted with school administrators and selected teachers to explore their experiences, challenges, and opportunities in adopting digital transformation.
<b>Qualitative Data</b>	Classroom Observations	Used to observe real-time technology integration, student interaction with digital tools, and overall engagement.
	Document Analysis	Reviewed from news in social media, Ministry of Education reports, school policy documents, and DELIMa analytics to assess support strategies.

The study collected **quantitative data** through online surveys that focused on the usage of the DELIMa platform for digital education. For **qualitative data**, three methods were used. First, semi-structured interviews were conducted with school administrators and selected teachers to understand their experiences, challenges, and opportunities in adopting digital transformation. Second, classroom observations were carried out to monitor real-time technology integration, student interaction with digital tools, and overall engagement. Finally, document analysis was reviewed from news in social media, Ministry of Education reports, school policy documents, and DELIMa analytics to assess institutional support and implementation strategies.

## RESULT

A significant proportion of teachers (**74%**) and students (**69%**) agreed or strongly agreed that digital transformation has positively impacted student achievement. These findings support the hypothesis that consistent use of digital tools can enhance learning outcomes, improve engagement, and foster 21st-century skills. The top barriers identified include **time constraints for lesson preparation (61%)**, **internet connectivity issues (54%)**, and **limited devices (47%)**. These are consistent with challenges reported in previous studies across Malaysian primary schools, where infrastructure and resource allocation remain critical factors. Teachers recognized the potential of **interactive tools (75%)**, **collaboration platforms (68%)**, and **personalized learning pathways (58%)** to enhance student-centered learning. Additionally, **62% of teachers** participated in ICT-focused training, reflecting growing readiness for digital pedagogy.





## DISCUSSION AND CONCLUSION

The results suggest that while digital transformation in education through DELIMa has shown positive momentum, challenges persist in infrastructure, time allocation, and equitable access. Opportunities exist to scale interactive, collaborative, and personalized learning methods, provided that institutional support and resource allocation are strengthened. Future research should investigate long-term learning outcomes and evaluate intervention strategies to address barriers. As a leader, structured to increase using digital information in education need to synchronize with all aspect in curriculum, student affair and co-curriculum.

The study highlights that digital transformation in education through the DELIMa platform is progressing positively, with moderate to high levels of adoption among teachers and students. Overall satisfaction levels suggest that both groups recognize its value, and a majority agree that it contributes to improved student achievement. However, persistent barriers—such as time constraints, inconsistent internet connectivity, and unequal access to devices—remain significant challenges. Opportunities to expand interactive, collaborative, and personalized learning experiences exist but require stronger institutional support, particularly in resource allocation and continuous training. Sustained efforts in policy enforcement, infrastructure investment, and digital literacy development are essential to ensure equitable and impactful digital learning across Malaysian primary schools.

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# TRANSFORMING INCLUSIVE MATHEMATICS EDUCATION IN PRIMARY SCHOOLS THROUGH VALUES-BASED INSTRUCTIONAL LEADERSHIP

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**Abstract:** *Despite the introduction of various national policies promoting equity and access in Malaysian education, the implementation of inclusive education at the primary schools remains inconsistent and challenging. Mathematics, as a cognitively demanding and abstract subject, presents additional barriers that require differentiated instructional strategies to accommodate diverse students, including students with special educational needs. These challenges are compounded by inadequate teacher training and a lack of sustained instructional support from school leadership, revealing a persistent disconnect between national policy directives and classroom practice. This concept paper argues that values-based instructional leadership, rooted in humanistic principles, offers a viable and contextually responsive framework for advancing inclusive mathematics education in Malaysian primary schools. Such leadership transcends routine administrative functions by fostering professional collaboration and pedagogical support grounded in justice, empathy, respect, and compassion. These guiding values align with the National Education Philosophy, Rukun Negara, the Malaysian Teacher Code of Ethics, and international inclusive education frameworks. The paper presents a conceptual framework comprising three interdependent dimensions: humanistic instructional leadership, inclusive mathematics pedagogy, and a supportive school culture. This integrative model provides a strategic foundation for future research and the development of targeted interventions aimed at bridging the policy-practice gap. The paper concludes by advocating for a shift toward reflective, values-driven educational leadership as a catalyst for system-wide transformation toward equity and authentic inclusion in primary education.*

*Keywords: Inclusive Education, Mathematics Pedagogy, Instructional Leadership, Humanistic Values, Primary Schools*

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## 1.0 Introduction

Inclusive education has become a global priority, aiming to provide every student, regardless of background, ability, or disability, with an equal opportunity to succeed. This commitment is reflected in key international declarations such as the Salamanca Statement (UNESCO, 1994), the Dakar Framework for Action (UNESCO, 2000) and the United Nations Convention on the Rights of Persons with Disabilities (UN, 2006). These agreements emphasize the responsibility of governments to ensure equitable educational opportunities for all, particularly students with special educational needs (SEN). In this context, inclusive education is not merely a policy objective it is a fundamental human right that seeks to eliminate barriers and promote meaningful participation for every student (Ainscow, Booth, & Dyson, 2006).

In Malaysia, inclusive education is guided by national policies such as the Malaysia Education Blueprint (2013–2025) and the Special Education Policy (2019). Both policies advocate for students with SEN to be educated alongside their peers in mainstream classrooms, rather than in segregated settings. However, despite clear policy direction, implementation often remains

inadequate. Challenges such as limited resources, insufficient teacher training, and inconsistent leadership commitment across schools contribute to uneven practices (Zulkifli & Abdul Rahman, 2020). These issues highlight the urgent need for practical strategies to translate inclusive goals into effective classroom practices.

Mathematics presents a distinct challenge in inclusive education due to its abstract and structured nature, which requires a strong foundational understanding. For students with cognitive or learning difficulties, this can be particularly demanding especially when teaching methods are not adapted to their needs (Florian & Black-Hawkins, 2011). In Malaysia, many teachers still employ traditional, one-size-fits-all approaches and often feel unprepared to support SEN students effectively (Nasir & Zakaria, 2018). Consequently, these students may struggle to engage fully, leading to widened disparities in learning outcomes.

This underscores the critical role of school leadership. When leaders adopt an instructional role grounded in human values, they can transform both teaching practices and school culture (Hallinger & Murphy, 1985; Bush, 2020). Unlike administrative leadership, which focuses on procedures and efficiency, values-based instructional leadership emphasizes building teacher capacity, fostering collaboration and embedding values such as empathy, respect, justice and compassion into everyday school life. These principles are closely aligned with the National Education Philosophy and Rukun Negara, both of which advocate for the holistic development of students and the cultivation of a caring, inclusive society.

This concept paper proposes that values-based instructional leadership can serve as a powerful catalyst for enhancing inclusivity in mathematics education within Malaysian primary schools. By integrating leadership values with innovative mathematics pedagogy and a supportive school culture, the paper aims to move beyond policy discourse toward actionable change. The proposed framework also provides a foundation for further research and practical interventions to ensure that inclusive mathematics education becomes a lived reality for all students.

## **2.0 Literature Review**

### **2.1 Global Perspectives on Inclusive Education**

Inclusive education is widely recognised as a cornerstone of equity and social justice. The Salamanca Statement (UNESCO, 1994) marked a turning point by urging governments to adopt inclusion as a central strategy for achieving Education for All (EFA). This was reinforced in the Dakar Framework for Action (UNESCO, 2000), which highlighted governments' shared responsibility to provide quality education for disadvantaged and marginalised groups. Later, the Convention on the Rights of Persons with Disabilities (CRPD) (United Nations, 2006) elevated inclusive education to the status of a human right, calling for systemic reforms to enable the full participation of students with disabilities. Collectively, these frameworks reflect a global shift from segregation to inclusion, positioning it as both a moral and legal obligation.

Research across Europe, North America, and Asia demonstrate that inclusive education benefits all learners not just those with SEN by enhancing academic outcomes and promoting social cohesion (Ainscow, Booth, & Dyson, 2006; Florian & Spratt, 2013). However, the success of inclusion depends heavily on teacher preparedness, school leadership, and the socio-cultural context (Slee, 2018). This underscores that inclusion cannot be achieved through policy alone; it requires meaningful transformation of classroom practices and school culture.

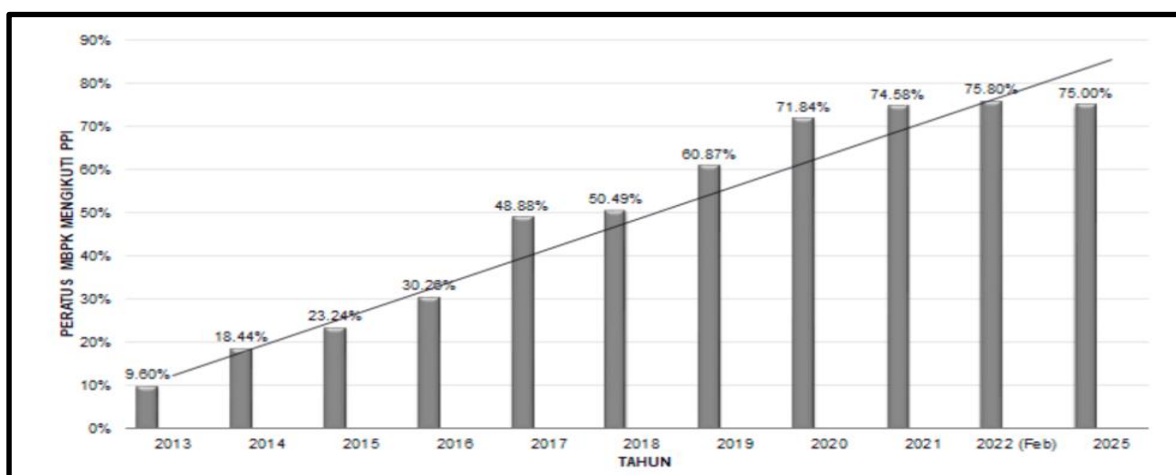
## 2.2 Inclusive Education in the Malaysian Context

Malaysia has taken deliberate steps to align with global goals. The Special Education Policy (2019) outlines guidelines for teacher training, curriculum adaptation and school-based support. Despite these initiatives, implementation remains inconsistent (Zulkifli & Abdul Rahman, 2020). Teachers frequently report feeling underprepared to manage inclusive classrooms, particularly in subjects like mathematics (Nasir & Zakaria, 2018). Common challenges include limited professional development, insufficient teaching aids and difficulties in differentiating instruction (Yusof & Yunus, 2021). At the leadership level, principals and senior administrators are often constrained by administrative demands, reducing their capacity to offer sustained instructional support (Abdullah & Kassim, 2019). These challenges highlight the persistent gap between policy aspirations and classroom realities.

The enrolment trend of students with SEN in Malaysia's Inclusive Education Programme (IEP) has shown remarkable growth over the past decade (see Figure 1). In 2013, only 9.6% of students with SEN were enrolled in mainstream classrooms. This proportion steadily increased, reaching 48.9% in 2017 and exceeding 60% by 2019. As of February 2022, the enrolment rate had risen to 75.8%, surpassing the 75% national target set by the Malaysia Education Blueprint 2013–2025 (Ministry of Education Malaysia, 2013). This upward trend reflects a strong policy commitment and systemic progress in expanding access to inclusive education.

However, scholars caution that quantitative gains alone do not equate to qualitative inclusion (Zulkifli & Abdul Rahman, 2020). Achieving enrolment targets represents only an initial step; the more critical challenge lies in ensuring that SEN students experience meaningful engagement and learning, particularly in cognitively demanding subjects such as mathematics. Thus, while Malaysia has exceeded its numerical goal ahead of schedule, the emphasis must now shift towards enhancing pedagogical quality, teacher preparedness and leadership practices to achieve genuine and sustainable inclusive education.

**Figure 1: Percentage of Students with Special Educational Needs (SEN) Enrolled in the Inclusive Education Programme (IEP) in Malaysia**



## 2.3 Mathematics as a Barrier in Inclusive Classrooms

Mathematics poses unique challenges in inclusive education due to its abstract concepts, sequential structure and reliance on symbolic reasoning (Nisreen, 2020). For students with SEN, difficulties with numeracy, memory and conceptual understanding increase the risk of

exclusion from meaningful participation (Schleppenbach & Weston, 2017). Globally, approaches such as differentiated instruction and Universal Design for Learning (UDL) are advocated to enhance accessibility in mathematics education (CAST, 2018).

In Malaysia, however, studies suggest that mathematics teachers often lack the training necessary to implement these strategies effectively (Nasir & Zakaria, 2018). Many continue to rely on traditional, syllabus-focused methods rather than adopting student-centred approaches. This leaves SEN students on the margins of classroom engagement and underscores the need for leadership-driven pedagogical reform.

## **2.4 Instructional Leadership and Inclusive Practices**

Instructional leadership has long been associated with teaching quality and student achievement (Hallinger & Murphy, 1985; Leithwood et al., 2004). Effective instructional leaders set clear goals, monitor instructional practices and support ongoing professional development. More recently, researchers have argued that inclusive education requires a form of leadership that is not only instructional but also grounded in core human values (Bush, 2020; Theoharis, 2007).

Values-based instructional leadership integrates professional guidance with values such as justice, empathy, respect and compassion. Evidence suggests that leaders who embody these principles foster collaboration, empower teachers and promote inclusive classroom practices (Shields, 2010; Ryan, 2016). In the Malaysian context, however, research on the convergence of values-based leadership and inclusive mathematics pedagogy remains limited highlighting a key gap this paper seeks to address.

## **2.5 Theoretical Underpinnings: Humanistic and Inclusive Frameworks**

This concept paper draws on three interconnected theoretical frameworks that collectively underpin the development of values-based instructional leadership in inclusive mathematics education: the Inclusive Pedagogical Approach in Action (IPAA), Universal Design for Learning (UDL), and Humanistic Leadership Theory. Each framework prioritises equity, flexibility, and values-driven practices, and their integration offers a comprehensive model for transforming both teaching and leadership in inclusive settings.

### **2.5.1 Inclusive Pedagogical Approach in Action (IPAA)**

Florian and Black-Hawkins (2011) introduced the IPAA to challenge deficit-oriented perspectives of students with SEN. Rather than viewing difficulties as stemming from fixed abilities, the IPAA emphasises that all students are capable of progress when provided with appropriate opportunities. It reframes diversity as a strength rather than a limitation.

In mathematics classrooms, this approach translates into differentiated lesson planning that offers multiple entry points for students. A single problem may be explored through visual aids, manipulatives or real-world applications not solely through abstract algorithms. Instructional leaders can support IPAA by providing targeted professional development, modelling inclusive practices, and encouraging reflective teaching.

### **2.5.2 Universal Design for Learning (UDL)**

UDL, developed by CAST (2018), offers a proactive framework for addressing student variability. It is built on three core principles: multiple means of representation, engagement, and expression. Unlike retrofitted accommodations, UDL advocates for flexible curriculum design from the outset to ensure accessibility for all students.

In mathematics education, this may involve teaching fractions using visual diagrams, interactive digital tools, hands-on activities and real-life applications. These strategies not only support SEN students but also enhance learning for the entire class. Instructional leaders can embed UDL into school culture by promoting collaborative planning, investing in assistive technologies and encouraging diverse forms of assessment.

### **2.5.3 Humanistic Leadership Theory**

Humanistic leadership, as conceptualised by Shields (2010) and Ryan (2016), centres on values such as dignity, empathy, justice and ethical responsibility. It extends beyond transactional administration to adopt a transformative role, wherein leaders foster both the professional and moral dimensions of education.

In the mathematics classroom, this approach ensures that all students' progress is valued, regardless of pace or ability. Leaders demonstrate humanistic values when they advocate for inclusive resources, support ongoing teacher development and create safe, collaborative environments for innovation. By modelling empathy and fairness, they cultivate a school culture that authentically embraces diversity.

### **2.5.4 Integrative Potential of the Frameworks**

The integration of IPAA, UDL and Humanistic Leadership Theory provides a synergistic foundation for inclusive mathematics education. IPAA shapes teachers' pedagogical beliefs, UDL offers practical design principles for curriculum and instruction, and humanistic leadership ensures these practices are grounded in inclusive values at the organisational level.

Together, these frameworks position inclusion not as an add-on, but as a foundational philosophy embedded within teaching, leadership and school culture. This integrated approach offers a structured pathway for bridging Malaysia's persistent policy practice gap and facilitating the transformation of both mathematics pedagogy and the leadership practices that sustain it.

## **3.0 Issues and Challenges in Implementing Inclusive Mathematics Education**

### **3.1 Policy–Practice Gap**

Malaysia has made commendable progress in expanding access to inclusive education. However, this quantitative success conceals a persistent policy–practice gap. While national targets have been met, classroom realities often reveal a disconnect between policy intentions and daily implementation (Zulkifli & Abdul Rahman, 2020). The focus on numerical achievements risks overshadowing critical qualitative dimensions such as meaningful engagement, differentiated instruction, and equitable participation. Without robust pedagogical and leadership interventions, inclusion risks remaining symbolic rather than transformative.

### **3.2 Limited Teacher Preparation and Professional Development**

A recurring barrier is the lack of adequate teacher preparation. Many mathematics teachers report feeling ill-equipped to meet the diverse needs of SEN students (Nasir & Zakaria, 2018). Initial teacher education programmes often offer limited exposure to inclusive pedagogies and professional development remains fragmented and inconsistent. As a result, teachers frequently default to traditional, uniform instructional strategies that inadequately address learner diversity (Florian & Spratt, 2013). In the context of mathematics, where sequential reasoning and abstraction are essential, this deficiency disproportionately affects SEN learners, reinforcing patterns of underachievement.

### **3.3 Resource and Material Constraints**

The successful implementation of inclusive pedagogy relies heavily on access to appropriate resources and materials. Yet, many Malaysian classrooms lack essential adaptive technologies, specialised teaching aids and differentiated learning modules (Yusof & Yunus, 2021). Teachers must improvise, increasing their workload and diminishing the quality of instruction. Furthermore, disparities in resource availability between urban and rural schools exacerbate inequities in access to inclusive education.

### **3.4 Leadership Limitations: Administrative over Instructional Focus**

School leaders play a critical role in fostering inclusive practices, yet many remain burdened by administrative responsibilities such as compliance reporting, scheduling and resource management which detract from their instructional leadership capacity (Abdullah & Kassim, 2019). This managerial emphasis limits opportunities to mentor teachers, model inclusive strategies and advocate for values-driven decision-making. Consequently, teachers may lack sustained support in adopting inclusive mathematics pedagogy.

### **3.5 School Culture and Attitudinal Barriers**

A genuinely inclusive education system depends on a supportive school culture. Negative perceptions of SEN students held by teachers, peers or even parents continue to obstruct meaningful participation (Slee, 2018). While students may be physically present in classrooms, they often remain socially and academically marginalised. Embedding values such as empathy, justice and respect across school communities (Shields, 2010) remains a challenge, leaving inclusion susceptible to superficial compliance rather than authentic transformation.

### **3.6 Specific Challenges in Mathematics Pedagogy**

Mathematics presents challenges due to its abstract, cumulative nature. SEN students frequently encounter difficulties with numeracy, memory and conceptual reasoning (Schleppenbach & Weston, 2017). Without access to specialised instructional strategies, teachers may unintentionally exclude these students by prioritising syllabus completion over accessibility. High-stakes assessments further reinforce exclusion by evaluating SEN students against standardised benchmarks rather than individual growth. These subject-specific barriers underline the urgency for instructional leadership that champions differentiated teaching and authentic assessment.

### **3.7 Synthesis of Challenges**

Collectively, these challenges reveal that although Malaysia has made significant strides in quantitative inclusion, qualitative inclusion remains limited. True inclusion necessitates attention to teacher competency, adequate resources, instructional leadership and inclusive school culture. Mathematics classrooms epitomise the intersection of these issues, highlighting the pivotal role of values-based instructional leadership in enabling sustained, meaningful change.

## **4.0 Proposed Conceptual Framework**

### **4.1 Overview of the Framework**

This conceptual framework aims to bridge the policy practice gap in inclusive mathematics education by integrating three interdependent dimensions: Values-Based Instructional Leadership, Inclusive Mathematics Pedagogy and Supportive School Culture. Together, these dimensions provide a foundation for transforming inclusive education in Malaysian primary

schools. Within this model, leadership functions as the central driver of change, pedagogy serves as the mechanism for transformation and school culture acts as the sustaining force.

#### **4.2 Dimension 1: Values-Based Instructional Leadership**

At the core of the framework lies values-based instructional leadership, which contrasts with traditional leadership models focused on administration and compliance. This approach embeds principles of justice, respect, empathy and compassion into everyday leadership practices (Shields, 2010; Bush, 2020). Instructional leaders actively:

1. Provide professional guidance and mentoring.
2. Conduct classroom observations to support reflective teaching.
3. Facilitate professional learning communities.
4. Advocate for equitable access to resources.

In the context of mathematics education, leaders play a pivotal role in ensuring that teachers implement differentiated instructional strategies, utilise inclusive teaching aids and foster classrooms where SEN students are actively engaged not merely present.

#### **4.3 Dimension 2: Inclusive Mathematics Pedagogy**

The pedagogical dimension draws upon the Inclusive Pedagogical Approach in Action (IPAA) and Universal Design for Learning (UDL) frameworks (Florian & Black-Hawkins, 2011; CAST, 2018). These models encourage teachers to perceive diversity as a resource rather than a constraint. Key pedagogical strategies include:

1. Differentiated instruction tailored to diverse learning needs.
2. Multiple modes of representation (e.g., visual aids, manipulatives, ICT tools).
3. Alternative assessments focused on progress and participation over fixed benchmarks.
4. Collaborative problem-solving tasks that invite meaningful contributions from all students.

Through the application of these strategies, mathematics becomes a medium for promoting equity, engagement and achievement, rather than a barrier for SEN students.

#### **4.4 Dimension 3: Supportive School Culture**

A supportive school culture provides the ecosystem in which inclusive pedagogy and leadership can flourish. It reflects the shared values, norms and practices of the school community. In inclusive mathematics education, such a culture is characterised by:

1. A collective belief in the potential of every learner.
2. Collaborative teacher communities that share and refine inclusive practices.
3. Positive peer relationships that reduce stigma and marginalisation.
4. Active engagement of parents and the broader community.

Leaders play a crucial role in shaping this culture by modelling inclusive values, embedding inclusive principles into school policies and routines and celebrating diversity as a strength.

Without a supportive cultural foundation, inclusive practices may remain superficial or overly reliant on individual teacher commitment (Slee, 2018).

#### 4.5 Interaction Between the Three Dimensions

The framework conceptualises these three dimensions as dynamic and mutually reinforcing:

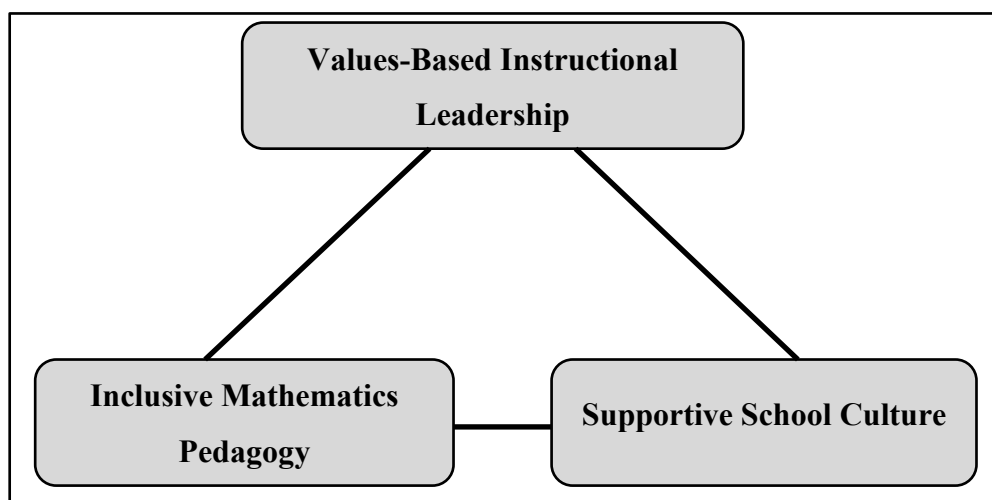
1. Leadership establishes the vision and ensures ongoing instructional support.
2. Pedagogy actualises inclusion through classroom implementation.
3. Culture sustains inclusion by embedding shared values throughout the school environment.

Together, these elements shift the focus from mere access (quantitative inclusion) to authentic engagement and achievement (qualitative inclusion).

#### 4.6 Visual Representation

The framework may be illustrated as a triangular model (Figure 2), with Values-Based Instructional Leadership at the apex, symbolising its guiding role. Inclusive Mathematics Pedagogy and Supportive School Culture form the base, representing the practical and cultural supports that uphold inclusive leadership. Arrows connecting the three corners highlight their reciprocal influence, reinforcing the principle that effective inclusion requires the synergy of all three dimensions.

**Figure 2: Proposed Conceptual Framework for Transforming Inclusive Mathematics Teaching in Primary Schools**



#### 5.0 Practical Illustrations of Inclusive Leadership in Mathematics

While the proposed conceptual framework offers a strong theoretical foundation for transforming inclusive mathematics pedagogy, its real-world application is equally critical. The following illustrative cases, based on common scenarios in Malaysian primary schools, demonstrate how values-based instructional leadership can be effectively implemented across varied educational contexts.

##### 5.1 Case 1: Instructional Leadership in an Urban Primary School

In a Selangor-based urban primary school, the headmaster identified that mathematics teachers were struggling to adapt lessons for students with mild learning disabilities. Rather than focusing solely on administrative responsibilities, the headmaster adopted a values-based instructional approach. Weekly collaborative meetings were established, bringing together



mainstream and special education teachers to jointly design inclusive mathematics lessons. Strategies such as visual aids, manipulatives, and context-driven problem-solving were incorporated to simplify abstract concepts. This initiative improved engagement among SEN learners and enhanced conceptual understanding for mainstream students. This case demonstrates how leadership rooted in empathy and justice can influence pedagogy and support inclusive learning outcomes (Hallinger & Murphy, 1985; Florian & Black-Hawkins, 2011).

### **5.2 Case 2: Navigating Resource Constraints in a Rural School**

At a rural primary school in Terengganu, a lack of specialised teaching aids presented a significant barrier to inclusive mathematics education. In response, the principal mobilised local community support and encouraged teachers to utilise everyday items such as bottle caps, sticks and household objects to teach mathematical concepts like fractions and place value. Teachers also adopted peer-assisted learning models, pairing SEN students with mainstream classmates for cooperative tasks. Although material constraints persisted, the principal's values-based leadership and resourcefulness enabled the school to deliver meaningful inclusive instruction. This case highlights how inclusive leadership and a supportive culture can mitigate systemic limitations (Nasir & Zakaria, 2018; Zulkifli & Abdul Rahman, 2020).

### **Case 3: Cultivating Collaborative Culture in Negeri Sembilan**

In a school in Negeri Sembilan, initial resistance to differentiated instruction among mathematics teachers stemmed from concerns about curriculum coverage. To address this, the principal implemented sustained instructional supervision and initiated professional learning communities (PLCs). These platforms encouraged teachers to exchange practices, reflect on implementation challenges, and gradually adopt flexible grouping and alternative assessment methods. Over time, teacher resistance diminished and SEN students became more actively engaged in classroom learning. This example underscores the importance of long-term leadership commitment in fostering inclusive mindsets and embedding inclusive values into school culture (Shields, 2010; Yusof & Yunus, 2021).

### **Synthesis**

Collectively, these cases exemplify the practical impact of values-based instructional leadership in advancing inclusive mathematics education. They demonstrate how school leaders can empower teachers, mobilise local resources, and foster professional collaboration to embed inclusive practices in everyday instruction. More importantly, they reinforce that sustainable inclusion requires more than structural support it depends on a shared commitment to empathy, justice, and respect that transcends administrative compliance (Ainscow, Booth, & Dyson, 2006; Bush, 2020).

## **6.0 Implications**

The proposed framework for transforming inclusive mathematics education through values-based instructional leadership carries significant implications for various stakeholders within the Malaysian education system. These implications ensure that the framework is translated into practice, guiding leadership development, pedagogical strategies, policy reforms and community engagement.

### **6.1 Implications for School Leaders**

School leaders are positioned as pivotal agents of transformation. Through values-based instructional leadership, their role extends beyond administrative management to encompass instructional mentorship. To enact this shift, leaders are expected to:

1. Provide ongoing professional development focused on inclusive pedagogy.
2. Facilitate collaborative spaces where teachers can share and refine best practices.
3. Model humanistic values justice, respect, and empathy in decision-making.
4. Advocate for resources and funding to support inclusive mathematics instruction.

The implication is clear: leadership preparation and evaluation systems must prioritise and reward values-driven instructional leadership, rather than focusing solely on compliance and operational efficiency.

## **6.2 Implications for Mathematics Teachers**

As the primary implementers of inclusive pedagogy, mathematics teachers play a critical role. The framework calls upon teachers to:

1. Employ differentiated strategies that accommodate learner diversity.
2. Integrate UDL principles to teach abstract mathematical concepts through various modalities.
3. Engage in reflective practice to continually enhance inclusivity.
4. Collaborate with special education professionals to adapt instructional materials and assessments.

To support these practices, teacher education programmes and in-service training must go beyond theoretical discussions and provide hands-on, practical experience in inclusive pedagogy, thereby reducing reliance on ad hoc or trial-and-error methods.

## **6.3 Implications for Policymakers**

For policymakers, the framework signals a shift from purely quantitative targets (e.g., enrolment rates) toward qualitative indicators of inclusion. Essential policy measures include:

1. Integrating values-based leadership competencies into principal training curricula.
2. Allocating funding for inclusive teaching aids and assistive technologies in mathematics.
3. Establishing monitoring mechanisms that evaluate the quality of inclusive practices.
4. Aligning national policies with the National Education Philosophy and global commitments under SDG 4.

This calls for policy frameworks that balance access with quality, and accountability with empathy.

## **6.4 Implications for School Communities**

Inclusive education is not confined to classrooms; it encompasses the entire school ecosystem. Parents, peers, and community stakeholders are instrumental in supporting inclusive practices. The framework suggests that schools should:

1. Strengthen parental involvement in supporting mathematics learning at home.
2. Promote peer-assisted learning strategies that foster collaboration between SEN and mainstream students.
3. Develop partnerships with NGOs, universities, and professional organisations to leverage expertise and resources.

By embedding values such as empathy, justice, and respect across the school community, inclusive education becomes a collective endeavour sustained by a shared commitment rather than the efforts of individual actors alone.

## 7.0 Conclusion and Way Forward

Malaysia has made commendable progress in expanding access to inclusive education, exceeding the 75% enrolment target for students with SEN in mainstream classrooms. However, access alone does not equate to authentic inclusion. Persistent challenges remain particularly in mathematics where pedagogical complexity, teacher preparedness, and leadership support continue to fall short. The abstract and sequential nature of mathematics often exacerbates barriers for SEN students, highlighting the urgent need for systemic change.

This concept paper argues that values-based instructional leadership offers a viable and transformative pathway for addressing these gaps. By embedding values such as justice, empathy, respect and compassion into leadership practices, school leaders can empower teachers, enhance inclusive pedagogy and cultivate supportive school cultures. The proposed framework unites leadership, pedagogy, and culture as interdependent components that collectively bridge the divide between policy aspirations and classroom realities.

Moving forward, achieving authentic inclusive mathematics education in Malaysia requires coordinated action at multiple levels:

**Leadership Development:** Embed values-based leadership modules within principal training and continuous professional development programmes to promote humanistic and instructional leadership.

**Teacher Training and Support:** Reform teacher education curricula to include inclusive pedagogies specific to mathematics, and provide ongoing, practice-oriented in-service training.

**Resource Provision:** Ensure equitable access to inclusive teaching aids, assistive technologies, and adapted assessments especially in under-resourced and rural schools.

**Monitoring and Evaluation:** Shift focus from enrolment statistics to qualitative indicators of inclusion, such as student engagement, participation and academic growth.

**Collaborative Culture:** Strengthen professional learning communities among teachers and foster school community partnerships that extend inclusive values beyond the classroom.

**Research and Innovation:** Support empirical studies and pilot initiatives to refine and test the proposed framework, ensuring its applicability across diverse educational contexts.

In conclusion, realising meaningful and sustainable inclusion in mathematics education requires more than policy declarations it demands a holistic transformation driven by values-based leadership. When leadership, pedagogy, and culture align with inclusive values, schools can move beyond numerical targets to create learning environments where every student could thrive.

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## CONTRIBUTION OF PRINCIPALS' INSTRUCTIONAL LEADERSHIP ON SCIENCE TEACHING COMPETENCY

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**Abstract:** *Instructional leadership is a main aspect of principals' leadership in the school. The school's success, in turn, depends largely on principals' abilities in instructional leadership. Therefore, the purpose of this study was to identify the contribution of principals' instructional leadership on science teaching competency. Using a quantitative approach, a survey on instructional leadership and science teaching competency in 311 science teachers in Terengganu, Malaysia was conducted. The data were analyzed using structural equation modelling (SEM) by AMOS 22 and the results showed that all nine dimensions proposed for instructional leadership variables were significant with a loading factor of 0.70 - 0.84. Correspondingly, the science teaching competency variables were significant too with a loading factor of 0.81 - 0.95. My findings indicated instructional leadership contributed significantly to the science teaching competency ( $\beta=0.51$ ,  $CR=8.589$ ,  $p= 0.00$ ). In summary, I have successfully developed an interaction model between instructional leadership and science teaching competency.*

*Keywords: Instructional Leadership, Science Teaching Competency, Teaching and Learning, Science Teachers*

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### 1. Introduction

Leadership is the ability of an individual to influence people towards organisational goals. In the context of a school, the principal, as a school leader is a key to influencing teachers and staff in achieving academic excellence for all students. For this reason, an effective leader must have two qualities; first, the ability to influence his or her subordinates towards organisational goals (Khan et al., 2009), second, instructional leadership ability that encompasses teaching and student learning besides fulfilling their management duties (Blasé & Blase, 2000; Quinn, 2002; Marks & Printy, 2003; Day, Gu, & Sammons, 2016). Instructional leadership among school leaders is a key factor in the development of quality education and ultimately the school's success. International studies showed when school leaders focus on instructional leadership, students' achievement improved by 20% (Ministry of Education, 2013). Hence, mastery of instructional leadership by school principals is crucial for the school's success. In fact, the Malaysian Development Plan (PPPM) encouraged all school management staff including senior assistant teachers and senior subject teachers to be proficient in instructional leadership.

The concept of instructional leadership was clearly defined by Hallinger and Murphy (1987) that involves three dimensions; defining school goals, managing teaching programs and promoting the school learning climate. Each dimension has specific functions such as coordinating curriculum, monitoring student progress, framing clear school goals, communicating clear school goals, protecting instructional time, promoting professional development, maintaining high visibility, providing incentives for teacher and students. Besides instructional leadership, another factor that affects students' achievement is teaching competency. Generally, teaching competency consists of three aspects; knowledge, skills and value. However, Kunter, Klusmann, Baumert, Richter, Voss, and Hachfeld (2013) gave

a broader definition of teaching competency which includes teachers' pedagogical content knowledge, professional beliefs, work-related motivation and self regulation.

## **2. Literature Review**

Blasé and Blasé (2000) gave a very broad definition of instructional leadership by dividing it into four areas. The areas discussed were regarding prescriptive models, a study on instructional leadership, studies on the direct effects of principals' behaviour on teacher and classroom teaching as well as direct impact assessment and indirect effects on student achievement. A teachers' perception survey on how principals promote teaching and learning in schools was empirically conducted and two themes emerged for effective instructional leadership. One was to talk with teachers to encourage reflection, and the other was to promote professional development among teachers.

Quinn (2002) agreed with Blasé and Blasé (2000) with regards to the importance of principals' leadership behaviour. He found that principals' teaching leadership had a strong relationship with teachers' teaching practices. Hence, he defines instructional leadership as principals' behaviour which affects the practice of teaching and thus improves students' achievement. Consequently, the principal is a strong teaching leader and is responsible for guiding teachers using the latest teaching strategies, technology and equipment for effective teaching. As an effective leader, the principals can influence the teachers' teaching practices. However, providing teachers with the right resources and incentives allows them to focus entirely on students' learning.

On the other hand, the concept of leadership by Hallinger and Murphy (1985) is seen as more thorough and clear compared to the concepts suggested by other scholars. Hallinger and Murphy (1985) incorporate instructional elements into teaching as one of the dimensions of their instructional leadership model. According to Hallinger and Murphy (1987), failure to define the concept of instructional leadership is the greatest obstacle of the principal to act as a powerful teaching force. Therefore, they gave a clearer definition to the instructional leadership concept that involves three key roles of instructional leadership; defining school goals, managing teaching programs and promoting school learning climate. Each dimension stated has some functions, for example, in the dimension for managing teaching program, it involves supervisory functions and assessing the teaching, coordinating the curriculum and monitoring student progress (Hallinger & Murphy, 1987).

Nevertheless, teaching competencies are the main requisites in ensuring the success of a school, especially in the academic field. Teaching competency main concept is related to the mastery of knowledge and skills especially the pedagogy skills and positive attitude (Kunter, Klusmann, Baumert, Richter, Voss, & Hachfeld, 2013; Liakopoulou, 2011; Bhargava & Pathy, 2011; Mariani & Ismail, 2013). The concept of teaching competency is not centred on the teacher only but is tied to students' achievement. Moreover, a competent teacher is one who benefits his or her students in terms of knowledge in regards to the subjects being taught (Sahin, 2011).

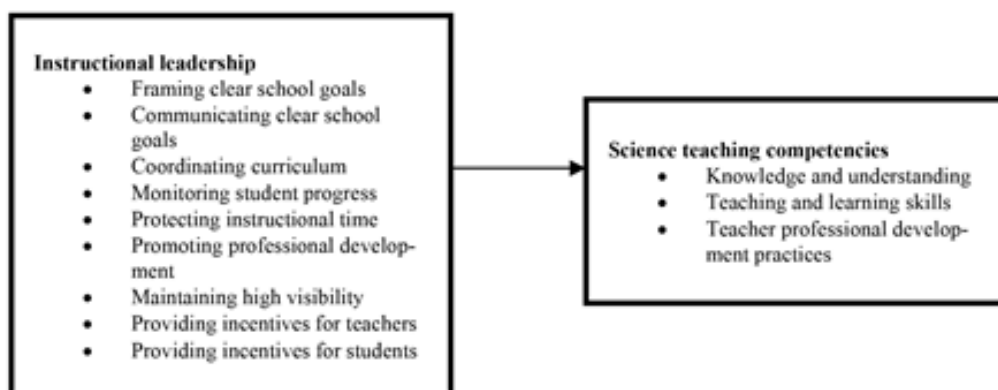
In Malaysia, teaching competency outlines are in the Teachers Standard Malaysia Document (SGM) issued by the Ministry of Education Malaysia. In the document, there are three standard components for Malaysian teachers: 1) knowledge and understanding 2) teaching and learning skills and 3) practice of professionalism in teaching (Guru, 2009). For the science teachers, the Master Plan of Science in Malaysia's Early Standards can be used as a guideline to improve their teaching competency (Nasri, 2010). Three important aspects proposed

in producing quality science teachers are knowledge and understanding, teaching and learning skills, and practising of professionalism. Although these aspects are the same as those contained in the Teacher's Standard Document, they are specific for the science curriculum such as science process skills, manipulative skills, experimental skills, inquiry skills etc.

There are many studies conducted to examine the teaching competency. (Ibrahim & Amin, 2014) conducted a study on the development of a leadership model on principals and teachers teaching competencies in Terengganu. He surveyed 481 teachers in 55 secondary schools in Terengganu. The findings showed that teaching leadership has a positive correlation with teaching competency. Likewise, the study of (Yusof & Ibrahim, 2015) investigates the correlation between the virtual instructional leadership and teaching competency and found that virtual instructional leadership was the predictor variable to teaching competency. Davarajoo (2012) conducted a study on instructional leadership relationships with work commitment and job satisfaction of 172 teachers in 9 schools in the Kuala Selangor district primary school. He found that there was a significant relationship between instructional leadership and work commitment and teachers' job satisfaction.

Based on the literature, the study's conceptual framework is as in Figure 1.

**Figure 1: Conceptual Framework**



### 3. Research Methodology

The study used quantitative methods and adopted a survey approach that examines population by measuring data from a part of the sample (Airasian & Gay, 2003; Cohen, Manion, & Morrison, 2007). The study's population was secondary school science teachers from all districts in Terengganu, Malaysia. The sample for the study consisted of 311 science teachers using stratified random sampling techniques and the sample size determination formula by Krejcie and Morgan (1970). Data were collected using the Principles Instruction Management Rating Scales (PIMRS) questionnaire which was later modified by Mohd Yusri (2012) for instructional leadership variables. The variable on science teaching competency questionnaire was a modification from Nasri (2010) questionnaire on the competency of science teachers.

The data were analysed using the Structural Equation Model (SEM) from the AMOS 22 program. The direct contribution of independent variables to dependent variables was determined using Critical Ratio (CR) values. When a CR value exceeds 1.96 and p-value < 0.05, this indicates that the predictor variables contribute significantly to the dependent variables. Whereas, the corresponding hypothesis model tested is verified using the index fit  $\chi$  (CMIN), GFI, CFI, RMSEA, PCFI, and PNFI. The hypothesis model is considered matched to the data if the value of  $\chi^2$  is not significant or exceeds 0.05 (Piaw, 2009; Meyers, Gamst, & Guarino, 2006). RMSEA value is very good if smaller than 0.08 but it is still accepted if less than 0.1 (Byrne, 1998; Mohd Yusri, 2012). CFI value greater than 0.90 is accepted, but the CFI value between 0.80 and 0.89 is considered within the accepted margin (Knight, Viridin, Ocampo, & Roosa, 1998). Fit index values PNFI and PCFI are accepted if it exceeds 0.50 (Meyers, Gamst, & Guarino, 2006). The model is considered matched when the bootstrap value exceeds 0.05 (Bollen & Stine, 1992). When the bootstrap value exceeds 0.5, this indicates that there is no difference between the data collected from the respondents and the proposed model. Therefore, the proposed model is valid based on the data collected from the respondents.

#### 4. Results

All variables are in normal distribution and correlated with each other. Table 1 shows the matrices for descriptive information, normality and correlation of the variables.

**Table 1: Descriptive, Normality and Correlation**

Variables	M	SD	Skewness	Kurtosis	1	2	3	4	5	6	7	8	9	10	11
Framing clear school goals	4.35	0.53	-0.645	0.155											
Communicating clear school goals	4.41	0.57	-0.678	0.348	0.690										
Coordinating curriculum	4.27	0.52	-0.423	0.180	0.692	0.722									
Monitoring student progress	4.23	0.57	-0.364	0.211	0.586	0.727	0.741								
Protecting instructional time	4.48	0.44	-0.663	-0.100	0.447	0.532	0.509	0.528							
Promoting professional development	4.35	0.50	-0.199	-1.00	0.491	0.608	0.615	0.648	0.585						
Maintaining high visibility	4.13	0.63	-0.299	-0.675	0.467	0.619	0.544	0.630	0.560	0.604					
Providing incentives for teachers	4.14	0.71	-0.582	-0.155	0.525	0.615	0.588	0.665	0.487	0.540	0.623				
Providing incentives for students	4.35	0.58	-0.528	-0.499	0.524	0.664	0.646	0.699	0.562	0.623	0.624	0.713			
Knowledge and understanding	4.14	0.42	0.250	-0.283	0.237	0.353	0.364	0.362	0.271	0.4500	0.359	0.325	0.368		
Teaching and learning skills	4.19	0.42	0.180	-0.389	0.272	0.361	0.377	0.391	0.263	0.438	0.375	0.351	0.417	0.837	
Teachers' professional development practices	4.19	0.42	0.094	-0.549	0.255	0.403	0.396	0.411	0.269	0.501	0.389	0.338	0.451	0.702	0.769



Figure 2 shows the interaction model of instructional leadership and the science teaching competency. The findings show that all the dimensions suggested for instructional leadership and the science teaching competency are appropriate when the loading factor exceeds 0.7. The findings also show that all the fit indexes tested have reached the desired level of validation of the proposed hypothesis model as in the conceptual framework and is consistent with the data collected. Table 2 shows the critical ratio (CR) of instructional leadership contribution to the science teaching competency above the value of 1.96. The results indicate the contribution is significant. The results are likewise with instructional leadership dimensions and other science teaching competencies. Table 3 shows detailed indexes fit and bootstrap values that meet the criteria required to verify that the proposed model corresponds to the data collected.

Figure 2: Final Model

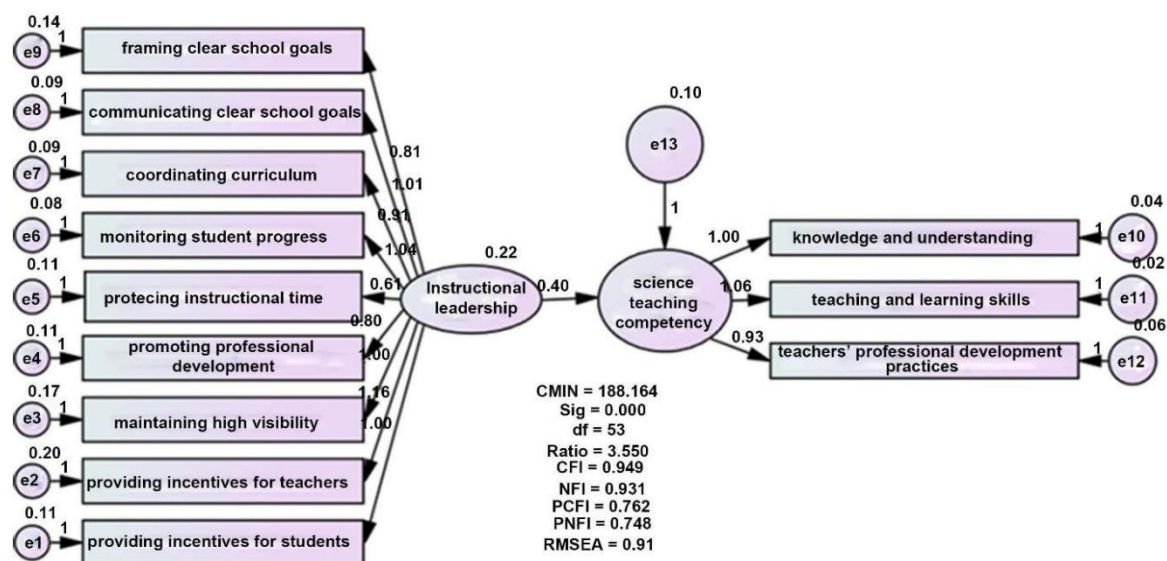


Table 3: Model Fit

Indexes Fit	Suggested Range	Result $\chi^2$
Small	188.164	
df	-	53
P	>0.05	0.000
Ratio ( $\chi^2/df$ )	<5	3.55
GFI	>0.90	0.906
CFI	>0.90	0.949
RMSEA	<0.08	0.091
PCFI	>0.50	0.762
PNFI	>0.50	0.748
Bootstrap Bollen-Stine	>0.05	0.531

## 5. Discussion and Conclusion

The findings of this study have successfully developed the model for instructional leadership on the science teaching competency. The findings confirm (Hallinger & Murphy, 1987) instructional leadership theory which proposed three dimensions of instructional leadership

that are defining school goals, managing curriculum and teaching and fostering school climate. The findings also confirmed the proposed teaching leadership function which are framing clear school goals, communicating clear school goals, coordinating curriculum, monitoring student progress, protecting instructional time, promoting professional development, maintaining high visibility, providing incentives for teachers and providing incentives for students. The findings as well confirmed the proposed science teaching competency dimensions which are knowledge and understanding, teaching and learning skills and teachers' professional development practices.

Interestingly, the study's findings are also in line with the findings of Davarajoo (2012) in the study of instructional leadership relationships with work commitment and job satisfaction of teachers in the Kuala Selangor district primary school. He found that there was a significant relationship between instructional leadership and work commitment and teachers' job satisfaction. But the relationship between these two variables is a weak relationship and is most likely due to other factors besides instructional leadership that also influences teaching competency. Equally important, Mohd Yusri (2012) has proven that there is a mediator factor that affects teaching competency which is self-efficacy. Another possibility is that teaching competency here involves teachers of science subjects that differ slightly from teachers of other subjects. Since science teaching involves science process skills that emphasize on inquiry exploration and problem solving, most principals, not having the science background, may lack this skill to be as effective.

The study explores the implications of instructional leadership on science teaching competency, emphasizing how leadership practices influence instructional quality, professional development and curriculum alignment in science education. Grounded in models of instructional leadership and science pedagogy, the research highlights the critical role leaders play in shaping effective science instruction through data-driven decision-making, mentoring and creating supportive learning environments. Findings suggest that instructional leadership not only enhances science teachers' competencies but also contributes to improved student engagement and achievement. These insights advocate for stronger leadership frameworks and targeted professional development initiatives to advance science education in schools.

In conclusion, school principals can adopt and practice the instructional leadership functions drawn from this study as a guideline. This allows principals to improve their instructional leadership abilities and influence teachers teaching competency. In addition, the Ministry of Education Malaysia (KPM) and Teachers Training Institutions should emphasize the concept of instruction leadership to further strengthen their leadership training modules. It is recommended that the role of school principals be reevaluated to reduce administrative duties not related to teaching and learning but is redirected towards instructional leadership. Further, providing science teachers with the opportunity to engage in the latest scientific teaching strategies may benefit teaching competency. Future research is needed on the level of instructional leadership in Malaysia drawn from a sample of all Malaysian principals and teachers.

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# SMALL TICKET, BIG IMPACT: A VALUE-BASED APPROACH TO FORMATIVE ASSESSMENT IN YEAR 3 USM SEKOLAH KEBANGSAAN BANDAR BARU SUNGAI BULOH SELANGOR MALAYSIA

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**Abstract:** *This action research aimed to enhance Year 3 USM pupils' engagement in formative assessment using value-based exit tickets. Preliminary classroom observations revealed that many pupils were reluctant to provide honest feedback about their learning and showed limited self-awareness during reflection. To address this, a simple and structured "exit ticket" method was introduced at the end of each lesson. Pupils responded to one learning-based question and one values-based reflection related to the day's lesson. Conducted over four weeks at a Malaysian primary school, the study involved 42 Year 3 USM pupils from Sekolah Kebangsaan Bandar Baru Sungai Buloh. Data were collected through exit ticket analysis, classroom observations, short pupil interviews, and teacher reflection logs. The findings showed significant improvements in pupil participation, confidence in expressing understanding, and self-assessment skills. Pupils became more honest and responsible in evaluating their progress, and teachers could more effectively identify learning gaps and plan targeted interventions. This study highlights that embedding moral values within formative assessment fosters both academic growth and character development. It also aligns with the integration of National Education Philosophy values into classroom practices. The findings suggest that value-based assessment strategies can create more meaningful, respectful, and student-centred learning environments.*

*Keywords: Formative assessment, Value-based education, Exit tickets, Character development, Self-assessment, National Education Philosophy.*

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## 1. Introduction

Formative assessment has long been recognized as a vital practice to support meaningful learning, as it allows teachers to continuously collect evidence of pupils' understanding and progress throughout the lesson. By engaging in this ongoing process, teachers are better able to adapt instruction, address misconceptions, and provide timely support. However, in many Malaysian primary classrooms, pupils are often hesitant to engage in honest self-reflection due to cultural, emotional, and motivational factors. Some pupils may fear making mistakes, while others may provide brief or superficial responses simply to complete the task, rather than using the opportunity to genuinely reflect on their learning. This tendency limits the teacher's ability to identify authentic learning difficulties, leading to hidden gaps between pupils' actual understanding and the intended learning objectives. To address this challenge, the present action research introduces a value-based exit ticket system designed to promote sincerity, accountability, and reflective thinking among Year 3 USM pupils at Sekolah Kebangsaan Bandar Baru Sungai Buloh. The approach aligns closely with Malaysia's National Education Philosophy, which aspires to nurture learners holistically across intellectual, emotional, spiritual, and moral dimensions. Through the integration of values such as honesty, responsibility, and respect, the exit ticket is not only positioned as a tool for assessing content

mastery but also as a structured avenue for character development. By embedding these values within formative assessment practices, the study aims to cultivate a classroom culture where pupils feel empowered to share their true learning experiences, thereby enhancing participation, self-awareness, and overall growth.

## **2. Problem Statement**

Formative assessment is known to be an effective strategy to improve teaching and learning, but its use in Malaysian primary schools is still not fully effective. Observations in a Year 3 USM classroom at Sekolah Kebangsaan Bandar Baru Sungai Buloh showed that many pupils were reluctant to give honest feedback and lacked self-awareness when reflecting on their learning. Their short and superficial responses made it difficult for teachers to identify real learning gaps and provide the right support. Current assessment practices also focus mainly on academic performance and often neglect the moral and affective domains, even though the National Education Philosophy emphasizes holistic development. To address this issue, this study introduces value-based exit tickets as a tool for formative assessment. By embedding values such as honesty, responsibility, and reflection, the approach aims to increase pupils' participation, sincerity, and metacognitive awareness, while also helping teachers gather useful information to improve instruction. This strategy supports both academic growth and character development, aligning with the goals of Malaysia's National Education Philosophy.

## **3. Research Objective**

The objective of this action research is to examine the effectiveness of value-based exit tickets in improving the participation, confidence, and self-reflection of Year 3 USM pupils in formative assessment. Specifically, the study aims to investigate how exit tickets that integrate moral values such as honesty, responsibility, and respect can encourage pupils to engage sincerely in self-assessment, while also enabling teachers to identify learning gaps and plan more targeted instructional strategies in line with the National Education Philosophy.

## **4. Research Questions**

This study is guided by several research questions. Firstly, it seeks to explore how the use of value-based exit tickets can influence pupils' participation in formative assessment. Secondly, it examines the ways in which value-based exit tickets affect pupils' confidence and honesty when engaging in self-reflection. Finally, the study investigates how value-based exit tickets can assist teachers in identifying pupils' learning needs and in improving their instructional planning.

## **5. Literature Review**

### **Formative Assessment in the Malaysian Context**

Formative assessment encompasses ongoing instructional activities through which teachers collect feedback during the learning process to inform and adjust teaching practices (Black & Wiliam, 1998). In Malaysia, the School-Based Assessment reform under KSSR aims to foster such continuous assessment. However, research indicates mixed implementation: some primary English teachers adapt School-Based Assessment selectively based on their beliefs and contextual constraints, limiting its intended impact (Jonglai, Pike, & Lamb, 2021).

Similarly, a case study in Malaysian English classrooms revealed that the concept of formative assessment is not yet fully conceptualized, with a preference for formal summative like testing which undermines School-Based Assessment's formative potential (Abdullah, 2005). In another study, science teachers in primary schools lacked consistent implementation of formative strategies such as self-assessment and peer assessment. Though they recognized formative assessment's purpose in advancing learning, actual practices were weak highlighting the critical need for professional development to transform assessment practices (Jainal, 2023).

Formative feedback an inseparable component of formative assessment also faces implementation challenges. Classroom observations and focus group discussions with primary ESL teachers revealed a lack of systematic and effective use of feedback to enhance learning in Malaysian classrooms (Sardareh, 2016).

### **Affective Domain and Character Education**

Despite policy emphasis on holistic education, research shows that Malaysian assessments tend to prioritize cognitive outcomes, often neglecting affective and moral development. A review in higher education found that assessments heavily skew toward cognitive domains, with minimal formal evaluation of affective outcomes such as ethical reasoning or empathy (Rahman & Singh, 2023). However, some specific domains, such as community service modules, include reflective essays where emotional and social development are formally assessed suggesting possibilities for integrating affective dimensions meaningfully (Rahman & Singh, 2023). A cultural study exploring social emotional competencies among Malaysian adolescents found that local conceptualizations include culturally rooted values such as altruism and preserving interpersonal harmony. These competencies reflect Asian cultural norms, suggesting that value-based education must be culturally sensitive and contextually grounded (Hadi et al., 2023).

### **Integrating Values into Formative Assessment**

There continues to be a disconnect between the intended goal of fostering holistic development, which includes intellectual, emotional, and spiritual aspects, and the manner in which it is enacted in classroom settings. Formative assessment tools like exit tickets have been recognized for promoting reflection and metacognitive awareness (Brookhart, 2010; Marzano, 2012). However, they are seldom used to intentionally cultivate moral values. Embedding value-based reflections such as honesty, responsibility, and respect into exit ticket prompts allows dual focus that are academic understanding and character development. That integration aligns with Malaysia's National Education Philosophy, which emphasizes nurturing balanced individuals who are intellectually, spiritually, emotionally, and physically developed.

## **6. Research Methodology**

This research adopted the action research model proposed by Kemmis and McTaggart (1988), which consists of planning, acting, observing, and reflecting. The participants were 42 pupils from Year 3 USM at Sekolah Kebangsaan Bandar Baru Sungai Buloh. The study was conducted over four weeks, with two action research cycles.

Instruments used included:

1. Exit Tickets which is a colored card with structured questions serving as the exit ticket that

- have images describing the targeted values towards the lesson.
2. Observation Checklists – to monitor participation and engagement.
  3. Teacher Reflection Logs – to record observations and professional insights.

Cycle 1 involved the introduction of exit tickets for one week, while Cycle 2 implemented refinements such as providing sentence starters and modelling honest reflection. Data was analyzed through descriptive statistics (participation rates, frequency counts) and thematic analysis (qualitative responses).

## 7. Results

The findings of this study clearly demonstrate that embedding moral values into exit ticket practices had a positive impact on both pupil participation and the quality of their reflections. Over the four-week intervention, participation rates rose steadily, reflecting a shift in classroom culture where pupils became more confident and comfortable with self-assessment. Initially, many pupils provided short or incomplete responses; however, by the end of the study, most were willing to articulate their understanding and openly acknowledge areas of difficulty. This suggests that the structured, value-based approach encouraged them to see reflection not as a test, but as an opportunity for growth.

Confidence levels, as highlighted in Figure 2, provide further evidence of this shift. Pupils who initially expressed uncertainty began to show greater assurance in evaluating their own progress. The act of linking reflection prompts to values such as honesty and responsibility empowered pupils to engage more authentically. Rather than writing what they thought the teacher wanted to hear, they began to provide truthful insights, which in turn helped the teacher plan more effective interventions.

The distribution of values in Figure 3 strengthens this point. Honesty and responsibility emerged as the most frequently cited values, indicating that these moral lessons were not only understood but internalised by the pupils. This finding is significant because it illustrates how formative assessment can serve a dual role: addressing academic needs while simultaneously fostering character development. Pupils were not only learning what they knew or did not know but also learning how to be responsible learners and honest individuals.

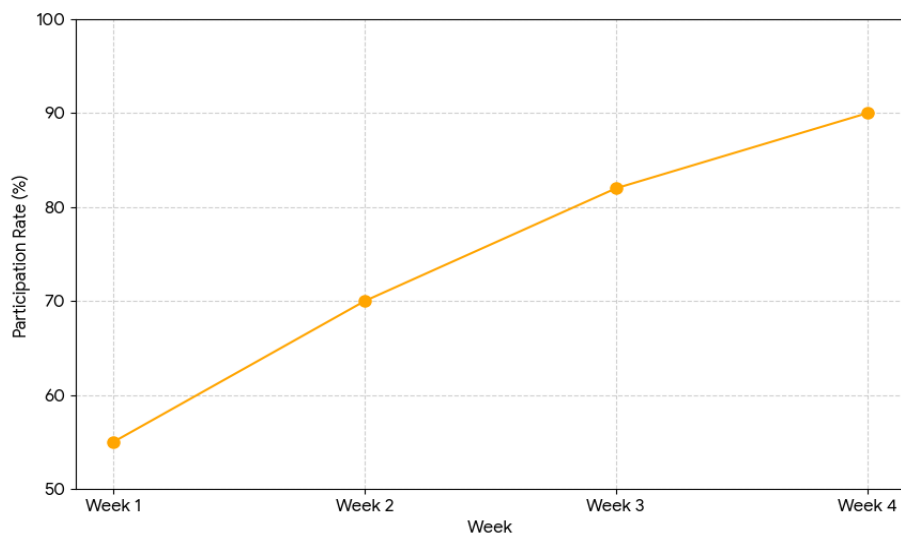
These outcomes align with Black and Wiliam's (1998) assertion that formative assessment should actively involve learners in the process of their own learning, making them partners rather than passive recipients. Likewise, the integration of value-based reflection supports Lickona's (1991) perspective that character education enhances both academic success and moral growth when embedded into classroom practices. In the Malaysian context, the success of this intervention provides a practical demonstration of the National Education Philosophy, which calls for the holistic development of learners intellectually, spiritually, emotionally, and morally. By linking formative assessment with value-based education, this study shows that assessment can move beyond measuring knowledge to shaping character, thus contributing to more meaningful and student-centred learning environments.

Below the table and figure representing the findings of this action research shows the steady increase in pupil participation across four weeks of intervention.



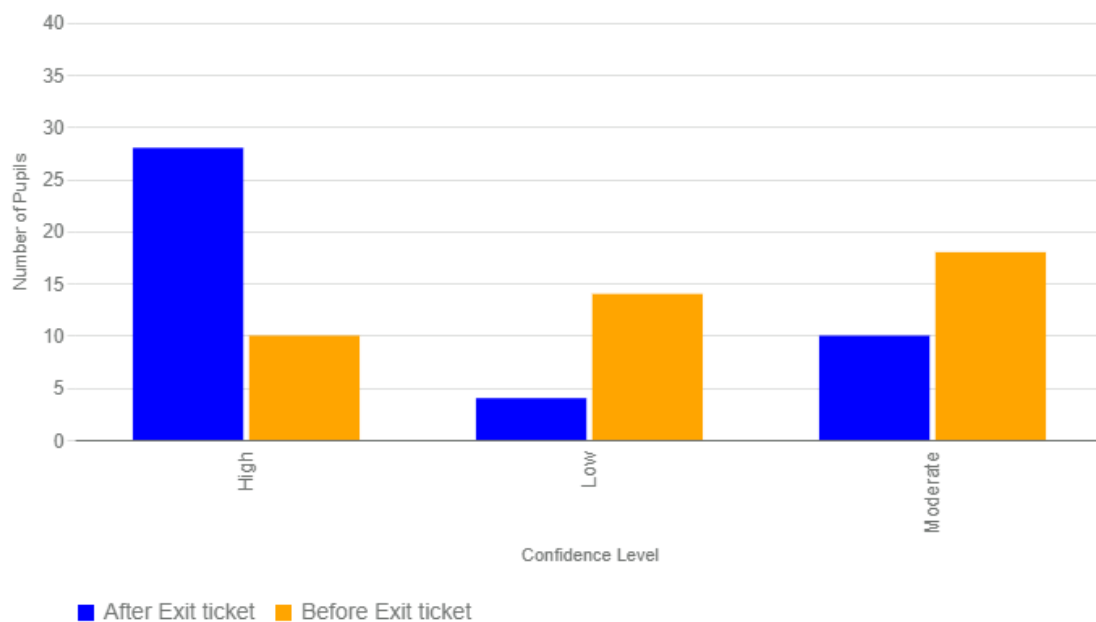
**Table 1: Students Participation in Exit Tickets**

<b>Week</b>	<b>Students Participation</b>	<b>Participation Rate</b>
Week 1	23 / 42	55%
Week 2	29 / 42	70%
Week 3	34 / 42	82%
Week 4	38 / 42	90%

**Figure 1: Students Participation in Exit Ticket****Table 2: Improvement in pupil confidence before and after intervention**

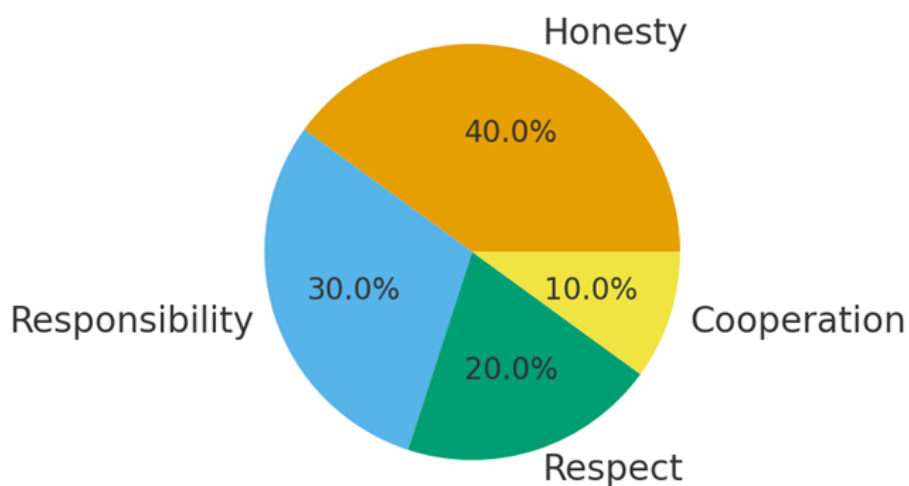
<b>Confidence Level</b>	<b>Before Exit ticket</b>	<b>After Exit ticket</b>
High	10	28
Moderate	18	10
Low	14	4
Total	42	42

**Figure 2: Students confidence levels: Before and after intervention**



**Figure 3: Distribution of values mentioned by 3 USM students**

### Distribution of Values Mentioned by Pupils



## 8. Discussion

The outcomes of this study can be better understood when positioned within existing frameworks of formative assessment. Black and Wiliam (1998) identified five key strategies of formative assessment that is clarifying learning intentions, engineering effective classroom discussions, providing feedback that moves learning forward, activating students as instructional resources for one another, and activating students as owners of their learning. The use of value-based exit tickets aligns particularly with the third and fifth strategies. By

embedding prompts that emphasise honesty and responsibility, the intervention provided feedback opportunities not only for teachers but also for pupils themselves, thereby enhancing their capacity to take ownership of learning. This was evident in the shift from superficial responses to more authentic reflections by the end of the study.

Brookhart (2010) highlights that effective formative assessment should nurture metacognitive awareness and self-regulation. The gradual increase in pupils' confidence levels indicates that value-based exit tickets acted as structured scaffolds for self-regulation, helping pupils to articulate both what they had learned and how they perceived themselves as learners. This dual focus is consistent with Marzano's (2012) framework, which stresses that reflection and goal setting are powerful mechanisms for deep learning.

In the Malaysian context, formative assessment is formalised under the school-based Assessment (Pentaksiran Berasaskan Sekolah) system. However, studies (e.g., Jonglai, Pike, & Lamb, 2021; Jainal, 2023) reveal that implementation often remains cognitive-heavy and undervalues affective and moral dimensions. The findings of this study demonstrate a practical way to bridge this gap by embedding moral values into everyday assessment tools. Thus, the intervention operationalises the holistic intent of the National Education Philosophy by simultaneously promoting cognitive growth and moral character development.

Finally, the complementary role of exit tickets alongside the Traffic Light method illustrates the versatility of formative assessment strategies. While Traffic Lights provide rapid diagnostic checks, exit tickets serve as reflective tools for deeper engagement, fulfilling the principle that formative assessment should be flexible and responsive to learners' needs (Black & Wiliam, 1998). Together, they provide a balanced toolkit that addresses both the efficiency of classroom assessment and the depth of student reflection.

## 8. Conclusion

This action research shows that value-based exit tickets are an effective formative assessment tool that improves pupil participation, confidence, and honesty in self-reflection. By embedding values such as honesty and responsibility, pupils became more engaged and provided meaningful feedback, while teachers gained clearer insights to guide instruction. The approach complements quick strategies like the Traffic Light method, offering both depth and flexibility in assessment. Overall, value-based exit tickets align with the National Education Philosophy by supporting both academic progress and character development, making them a practical and holistic classroom strategy. In conclusion, value-based exit tickets represent a simple yet powerful strategy for cultivating reflective, responsible, and honest learners while simultaneously strengthening formative assessment practices. This approach has the potential to be scaled and adapted across different subjects and contexts, fostering more holistic, student-centred learning environments in Malaysian classrooms and beyond.

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## 10. Appendix

Appendix 1: 3 USM students during the implementation of exit tickets.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

★ **My Exit Ticket** ★

One thing I learned today is: how to walk on a toilet

One thing I still find tricky is: how to walk fast around

Today I was to A because I don't met my teacher

Today I was...

Honest  A little honest  Not honest

I showed responsibility by: cleaning up my class

### Questionnaire for Pupils (Participation - Table 1)

(Likert Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Not Sure, 4 = Agree, 5 = Strongly Agree )

Question	1	2	3	4	5
I complete exit tickets regularly at the end of lessons.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I enjoy taking part in exit ticket activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exit tickets make me more willing to participate in class.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using exit tickets helps me stay focused during lessons.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Questionnaire for Pupils Confidence - Table 2

Question	1	2	3	4	5
I feel confident in showing what I have learned through exit tickets.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel more comfortable sharing my understanding in writing than by speaking in class.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exit tickets help me realise when I understand a topic well.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exit tickets help me recognise when I need more practice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Questionnaire for Pupils - Figure 3

Question	1	2	3	4	5
Exit tickets help me to be honest about what I have learned.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using exit tickets encourages me to take responsibility for my own learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I try to answer exit tickets sincerely, even when I do not fully understand the lesson.

Exit tickets remind me of the importance of values like honesty and responsibility.

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# IMPACT OF PROJECT-BASED LEARNING (PBL): DESIGN THINKING ON THE LEADERSHIP SKILLS OF YEAR 6 PUPILS AT SK KUANG

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**Abstract:** *This action research explores the impact of the Project-Based Learning (PBL): Design Thinking approach on the leadership skills of Year 6 pupils at Sekolah Kebangsaan Kuang. The study addresses the need to strengthen pupils' leadership and self-awareness in tackling local community issues. The innovation project was a strategic collaboration between Yayasan Teach for Malaysia (YTFM), Accenture Solutions Sdn. Bhd., and the Ministry of Education Malaysia (MOE). The main objectives were to enhance pupils' self-leadership skills by 90% and to develop an effective project implementation framework. The research adopted the Kemmis and McTaggart (1988) action research model comprising four phases: reflection, planning, action, and observation. Five Year 6 pupils participated in the study. Project implementation followed the Design Thinking stages: Feel, Imagine, Do, and Share. Findings revealed a significant improvement in pupils' leadership skills, with post-survey data showing greater confidence, initiative in group leadership, idea contribution, and collaborative problem-solving. In conclusion, the PBL: Design Thinking approach positively influenced the development of pupil leadership and reinforced school-community partnerships, aligning with the 21st-century soft skills agenda.*

*Keywords: Project-Based Learning, Leadership Skills, Design Thinking, Innovation Project, Road Safety Awareness Campaign*

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## 1. Background of Study

Recognizing that leadership skills are seldom cultivated through conventional teaching, this action research implemented a hands-on intervention. The study examines how applying a Project-Based Learning (PBL): Design Thinking framework influenced the leadership capabilities of Year 6 pupils at Sekolah Kebangsaan Kuang.

The objectives of the study are to improve pupils' self-leadership skills, to build a systematic structure for innovative project implementation, and to investigate the impact of this approach on pupils' confidence, ability to lead, and contribution of ideas in collaborative problem-solving.

Design Thinking is a pupil-centred approach based on empathy, idea creation, implementation, and sharing of authentic and relevant solutions (IDEO, 2020). In this study, pupils explored road safety issues around their school as a real-world context to contribute to the community. The carefully planned PBL approach provided pupils with opportunities to identify challenges, design solutions, and carry out collaborative and impactful activities. The Ministry of Education Malaysia (2021) has also emphasized that developing student leadership is crucial in producing holistic learners aligned with 21st-century skills. Therefore, this study is significant in exploring pedagogical approaches that integrate character development, leadership, and problem-solving within meaningful learning contexts.

## 2. Problem Statement

Although various initiatives have been implemented to develop leadership potential among primary school pupils, most approaches remain theoretical and lack contextual application in



real-world situations (Shamsudin et al., 2021). Moreover, previous studies have mainly focused on secondary school students, while action research interventions at the primary level are still very limited (Yusoff & Ahmad, 2022).

Furthermore, the implementation of Project-Based Learning (PBL) integrated with the Design Thinking approach has not yet been widely and systematically applied in Malaysian primary education (Rahim & Aziz, 2023). Previous studies have also recommended providing pupils with more opportunities to lead authentic and contextual learning activities in order to enhance confidence and reflective thinking (Zulkifli & Latip, 2020).

Thus, there is an urgent need to conduct action research that applies the phased PBL: Design Thinking model to build leadership skills among primary school pupils. This study aims to address this research gap by exploring the impact of this approach in addressing real community issues, particularly those related to road safety.

### 3. Research Objective

The first objective of this study is to provide pupils with opportunities to improve their self-leadership skills by 90% through the Project-Based Learning (PBL): Design Thinking approach. This objective arises from the need to stimulate soft skills that are often not explicitly developed in traditional teaching. By emphasizing empathy, collaboration, and creativity in each learning phase, pupils are trained to be more confident, responsible, and willing to express opinions and take leadership roles in authentic learning contexts.

The second objective is to improve pupils' ability to construct systematic and impactful innovative project implementation structures. This refers to their capacity to organize project plans systematically, from identifying community issues to proposing solutions and carrying out activities. The Design Thinking framework—Feel, Imagine, Do, and Share—offers a comprehensive and real-world guided process for pupils in this regard.

### 4. Research Question

Based on the first objective, the research question formulated is: *How can the Project-Based Learning (PBL): Design Thinking approach help pupils enhance their self-leadership skills?* This question seeks to explore in depth the impact of the approach on leadership elements such as self-confidence, group leadership, decision-making, and active participation in group activities. It is important for evaluating the effectiveness of the intervention directly on pupils' overall self-leadership development.

In line with the second objective, the research question is: *How can the PBL: Design Thinking approach help pupils construct systematic and impactful innovative project implementation structures?* The focus here is to evaluate how well pupils can plan, organize, and implement projects systematically based on chosen community issues. The study also assesses the effectiveness of this approach in enabling pupils to produce relevant outputs that create a positive impact on the school community.

### 5. Literature Review

Student leadership is a fundamental element of character development, yet it is often overlooked in daily teaching, particularly in learning activities grounded in real-world contexts.

Current leadership development in Malaysian primary schools frequently remains theoretical (Shamsudin et al., 2021), with most research concentrating on secondary students, leaving action-oriented interventions at the primary level scarce (Yusoff & Ahmad, 2022). The Malaysian Ministry of Education (2021) emphasizes that fostering leadership is crucial for nurturing holistic learners equipped with 21st-century skills.

To address this, Project-Based Learning (PBL) integrated with Design Thinking offers a promising pupil-centered strategy to develop soft skills like leadership through empathy, ideation, and problem-solving (IDEO, 2020). Despite its potential, highlighted in a systematic review by Tan and Liew (2023), the systematic integration of this approach remains limited in Malaysian primary education (Rahim & Aziz, 2023).

Therefore, this action research aims to fill this gap by examining the effectiveness of the PBL: Design Thinking approach in enhancing the leadership skills of Year 6 pupils. Using the Kemmis and McTaggart (1988) framework, this study investigates the impact of a road safety awareness campaign project on pupils' self-leadership and their ability to design innovative, contextual solutions.

## 6. Research Methodology

This study employed an action research design guided by Kemmis and McTaggart's (1988) spiral model, which consists of four iterative phases: reflection, planning, action, and observation. The design was chosen because it allowed the researcher to implement an intervention in a real classroom context, monitor pupils' responses, and refine practices through continuous cycles. This approach was suitable for the purpose of identifying the direct impact of Project-Based Learning (PBL) integrated with Design Thinking on the leadership development of Year 6 pupils.

A purposive sampling method was used to select five Year 6 pupils from Sekolah Kebangsaan Kuang. Selection was based on teacher recommendations and initial classroom observations, with criteria including low to moderate leadership confidence, observable communication potential, and interest in collaborative activities. The sample represented pupils from diverse academic and socio-emotional backgrounds, ensuring variation in perspectives and needs. A small group size was intentionally chosen to enable close monitoring of individual and group development throughout the project.

Two main research instruments were employed in this study: a questionnaire and a structured observation checklist. The questionnaire, adapted from the Teach for Malaysia Leadership Self-Assessment (2024), comprised 20 Likert-scale items measuring dimensions such as confidence, decision-making, teamwork, empathy, and initiative. It was administered before (pre-test) and after (post-test) the intervention. Meanwhile, the structured observation checklist was designed to capture pupils' real-time behaviours during project activities, focusing on indicators such as participation in discussions, role assignment, willingness to make decisions, and peer support.

Data collection was carried out in three stages. During the pre-intervention phase, pupils completed the pre-test questionnaire and initial observations were conducted to establish a baseline of leadership skills. The intervention phase was carried out using the PBL: Design Thinking model, where pupils engaged in the stages of *Feel*, *Imagine*, *Do*, and *Share*. They identified issues of road safety within their school community, brainstormed solutions, and

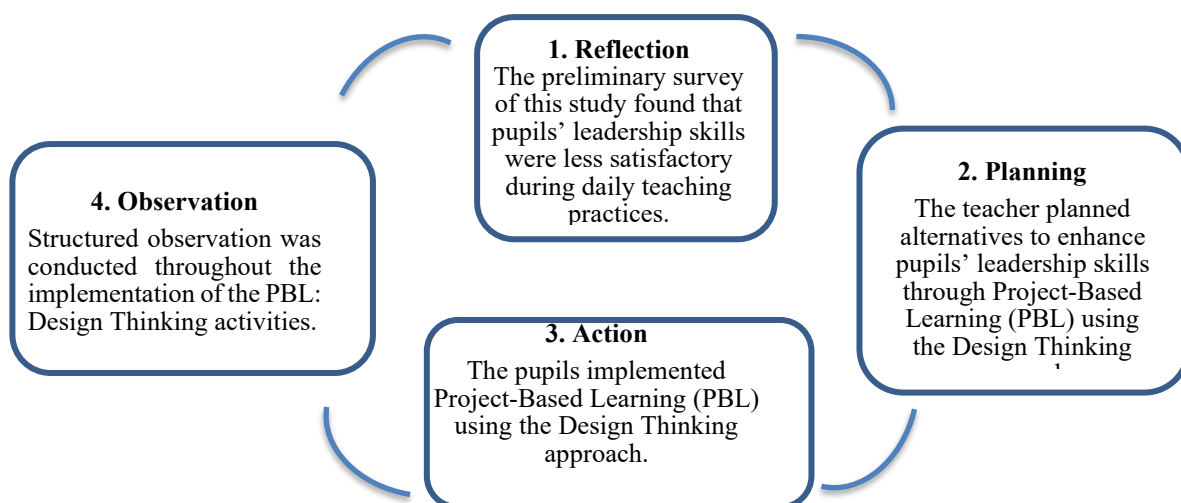
implemented a road safety awareness campaign that included posters, a digital quiz using Quizizz, and an educational board game. In the post-intervention phase, pupils completed the post-test questionnaire, and structured observations were repeated to capture changes in leadership behaviour.

The data collected were analyzed using both quantitative and qualitative approaches. Quantitative data from the questionnaires were examined through descriptive statistics, particularly mean comparisons between pre- and post-test scores. Qualitative data from structured observations were analyzed thematically to identify recurring patterns of leadership-related behaviours, which were subsequently categorized into themes such as confidence, collaboration, empathy, and decision-making. Triangulation was applied to strengthen the validity of findings by cross-verifying results from both quantitative and qualitative sources.

It is important to acknowledge the limitations of this research. The study was conducted with a small, purposively selected sample of five pupils from a single school. While this allowed for in-depth observation and qualitative analysis, the findings may not be generalizable to a larger student population or different school contexts. The specific dynamics of this small group may also have influenced the outcomes. Therefore, the results should be interpreted as an indicative case study of the approach's potential rather than a conclusive measure of its effectiveness across all primary school settings.

Finally, ethical considerations were carefully observed. Permission to conduct the study was obtained from the school administration as well as the parents of the participating pupils. Anonymity and confidentiality were maintained, and pupils' participation was entirely voluntary.

**Figure 1: Model of Kemmis and McTaggart (1988)**



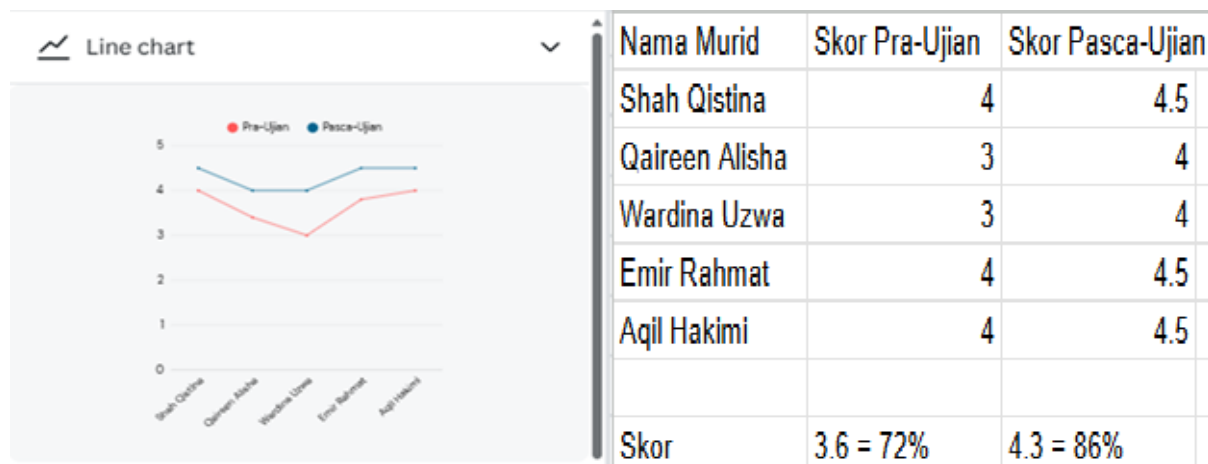
## 7. Results

The results are presented according to the two research objectives, beginning with the quantitative findings and followed by the qualitative outcomes.

For the first objective, which examined the improvement of pupils' self-leadership skills through the PBL: Design Thinking approach, As detailed in Figure 2, all five participants showed individual improvement in their self-leadership scores. Notably, Qaireen Alisha and

Wardina Uzwa demonstrated a significant increase from 3.0 to 4.0, while the other three pupils improved from 4.0 to 4.5. This reflects an overall improvement of 86 percent compared to the intended target of 90 percent.

**Figure 2: Pre-Test and Post-Test Mean Scores of Pupils' Self-Leadership Skills**



For the second objective, which focused on pupils' ability to build systematic and contextual project structures, qualitative analysis of observation data revealed four central themes. These themes were systematic project planning, contextual problem-solving, effective collaboration, and potential impact on the school community. Pupils were observed to organize project tasks more systematically, engage in problem-solving activities that reflected real-world contexts, work effectively with their peers, and produce outputs that had relevance for their school community.

**Table 1: Thematic Analysis of Pupils' Leadership Behaviours During the PBL: Design Thinking Project**

Main Theme	Summary	Codes of Behavior
Confidence	Pupils showed improvement in voicing their opinions	Expressing ideas
Leadership	Pupils learned to make independent decisions within projects	Assigning group tasks
Collaboration	Pupils actively contributed and supported their peers	Helping group members complete a poster
Empathy	Pupils understood real contexts and others' needs	Adjusting activities to meet peers' need
Decision-Making	Pupils demonstrated autonomy in project-related decisions	Making decisions without teacher guidance

Source: Leadership Questionnaire – Teach for Malaysia (2024)

The thematic analysis of observation data is summarized in Table 1. Pupils demonstrated greater willingness to express their ideas, took responsibility in assigning tasks within their groups, and contributed actively to project work. They also showed the ability to adapt activities to meet the needs of peers and to make independent decisions without direct teacher guidance. These behaviours collectively illustrate the key patterns observed during the implementation of the PBL: Design Thinking project.

## 8. Discussion and Conclusion

The findings of this action research demonstrate that the Project Based Learning (PBL) approach integrated with Design Thinking effectively enhanced the leadership skills of Year 6 pupils. The increase in questionnaire scores and the emergence of consistent themes from structured observations indicate that pupils became more confident, independent, and collaborative. These results directly answer the research questions, showing pupils could take initiative and assume leadership roles. Furthermore, the findings revealed that pupils successfully applied the phases of Design Thinking to real world issues like road safety, demonstrating systematic planning and contextual problem solving. This shows that primary level pupils are capable of applying higher order thinking and leadership skills when provided with structured, authentic learning opportunities.

The interpretation of these findings supports earlier research (Shamsudin et al., 2021; Zulkifli & Latip, 2020; Rahim & Aziz, 2023) that emphasizes the role of authentic learning in enhancing leadership and aligns with the Malaysian Ministry of Education's (2021) emphasis on 21st century skills. However, it is important to clearly highlight the limitations of this study. The research was conducted with a small, purposively selected sample within a single school context, which means the findings may not be generalizable to a wider student population. The specific dynamics of this small group could have also influenced the outcomes.

Based on these findings, such initiatives can cultivate leadership and social responsibility. To ensure the long term sustainability of this impact, schools could embed the PBL Design Thinking framework into the annual curriculum, establishing it as a core pedagogical practice rather than a one off project. Creating a mentorship program where experienced pupils guide new teams could also help sustain momentum and institutionalize this student led approach. It is further recommended that education offices organize professional development workshops for teachers on implementing this model. For scaling up, future research should be conducted with larger sample sizes and over longer periods to evaluate the long term impact. Comparative studies between urban and rural schools would also provide valuable insights into the challenges and effectiveness of PBL Design Thinking across diverse contexts.

In conclusion, this action research confirms that the PBL approach integrated with Design Thinking significantly improved the self leadership skills of Year 6 pupils. The successful implementation of the road safety project demonstrates that primary pupils have untapped leadership potential that can be developed through well structured, authentic, and community based pedagogical strategies. The implications point toward the importance of embedding these practices in everyday teaching. Schools and policymakers should consider scaling up such programs as part of broader educational reforms aimed at producing well rounded and competitive students.





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Appendix 3  
Framework of *Design Thinking*

<div style="text-align: center;">  <p>1.</p> </div> <div style="background-color: #800000; color: white; text-align: center; padding: 5px;"> <b>Project Proposal</b> </div> <div style="display: flex;"> <div style="flex: 1;">  <p><b>FEEL:</b> Problem Statement</p> </div> <div style="flex: 2;"> <p><i>What is the problem we see, hear or feel?</i></p> <ul style="list-style-type: none"> <li>• Tiada lampu isyarat di hadapan sekolah.</li> <li>• Murid kurang peka dengan keselamatan semasa melintas jalan atau semasa menggunakan basikal di jalan raya.</li> <li>• Pengguna jalan raya menggunakan telefon semasa memandu.</li> </ul> <hr/> <p><i>What is the root cause? (Based on 5-Why Analysis)</i></p> <p><b>Kurang Infrastruktur Keselamatan Jalan Raya</b></p> <p><b>Kurang Kesedaran Keselamatan Jalan Raya dalam Kalangan Murid</b></p> <p><b>Pemandu Tidak Mematuhi Peraturan Lalu Lintas</b></p> <p><b>Kesibukan Lalu lintas di Sekitar Sekolah</b></p> <p><b>Kurangnya Penguatkuasaan Undang-Undang Lalu Lintas</b></p> </div> </div>	<div style="text-align: center;"> <p>2.</p> </div> <div style="display: flex;"> <div style="flex: 1;">  <p><b>IMAGINE:</b> Proposed Solution</p> </div> <div style="flex: 2;"> <p><i>What is our BIL solution?</i></p> <p><b>Kempen Kesedaran Keselamatan Jalan Raya</b></p> <hr/> <p><i>Our solution is Bold, Impactful and Long Lasting (BIL) because...</i></p> <p>Mengadakan kempen keselamatan jalan raya yang melibatkan pelajar, guru, ibu bapa, dan komuniti sekitar sekolah. Kempen ini boleh dilaksanakan dalam bentuk ceramah, bengkel, atau media sosial untuk mendidik orang ramai tentang pentingnya mematuhi peraturan lalu lintas, keselamatan pejalan kaki, serta tanggungjawab pemandu.</p> </div> </div>
<div style="text-align: center;"> <p>3.</p> </div> <div style="display: flex;"> <div style="flex: 1;"> <p><b>DO:</b> Action Plan</p> </div> <div style="flex: 2;"> <p><i>What is the timeline?</i></p> <p>Mac 2025</p> <ul style="list-style-type: none"> <li>• Perbincangan projek</li> <li>• Dapatkan kelulusan Guru Besar</li> <li>• Sediakan soal selidik dan edarkan kepada sasaran.</li> <li>• Sediakan slaid pembentangan projek.</li> </ul> <p>April 2025</p> <ul style="list-style-type: none"> <li>• Penghasilan video simulasi dan pengisian info mengikut minggu dan topik.</li> <li>• Sediakan quiz mengikut minggu dan topik.</li> <li>• Penghasilan aplikasi telefon pintar.</li> </ul> <p>May 2025</p> <ul style="list-style-type: none"> <li>• Pengumpulan hasil projek.</li> <li>• Pembentangan projek.</li> </ul> <hr/> <p><i>What is the proposed budget?</i></p> <ol style="list-style-type: none"> <li>1. Tempahan Road Safety Boardgame Canvas (RM350)</li> <li>2. Bahan pameran (RM50)</li> </ol> </div> </div>	<div style="text-align: center;"> <p>4.</p> </div> <div style="display: flex;"> <div style="flex: 1;">  <p><b>SHARE:</b> Goal and Hope</p> </div> <div style="flex: 2;"> <p><i>What is our goal or hope to achieve? (Can it be a SMART Goal?)</i></p> <ol style="list-style-type: none"> <li>1. Untuk memberi kesedaran kepada komuniti sekolah tentang keselamatan jalan raya di sekitar sekolah.</li> <li>2. Untuk menjadikan sekolah kawasan yang selamat dan bebas dari kemalangan.</li> </ol> <hr/> <p><i>What can we improve?</i></p> <p>Tenaga kerja untuk sasaran yang lebih besar melibatkan semua murid di sekolah.</p> <hr/> <p><i>What is our next step?</i></p> <p><b>Pada akhir tahun 2025, komuniti dapat kesedaran tentang keselamatan jalan raya dan kemalangan dapat berkurangan.</b></p> <hr/> <p><b>Pelan kami seterusnya adalah untuk menubuhkan jawatan murid sebagai Skwad Keselamatan Jalan Raya di sekolah.</b></p> </div> </div>



Appendix 4  
Implementation of Project-Based Learning (PBL)

The pupils sought permission from the school administrators to carry out the project.



The pupils collaboratively implemented the project.



The pupils developed a Road Safety Awareness Campaign through the Quizizz digital platform.



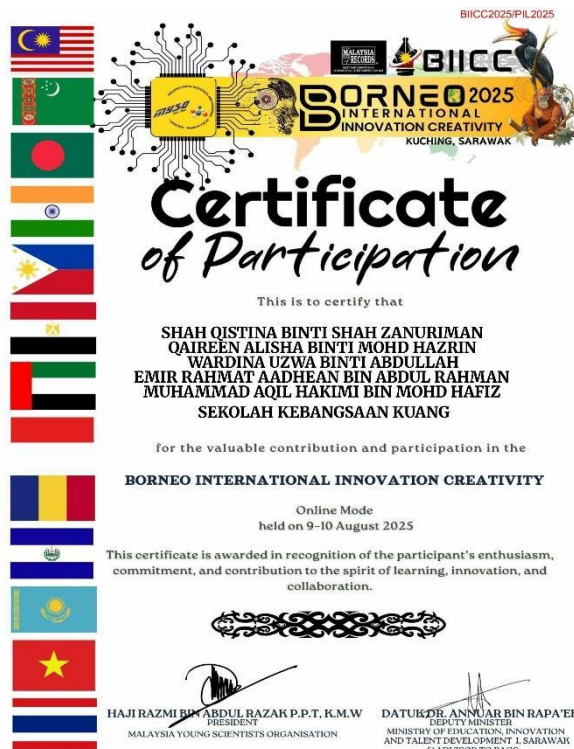
The pupils included a canvas-sized board game as an activity in the school.



The pupils produced a Road Safety Awareness Campaign poster.



The pupils presented their PBL project poster at BIICC 2025 (online) and received the Bronze Award.



# FROM SCHOOL TO MATRICULATION: UNDERSTANDING AND ENHANCING STUDENT ADJUSTMENT THROUGH LEADERSHIP STRATEGIES

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**Abstract:** *The transition from secondary school to matriculation college marks a pivotal educational milestone that demands strong leadership and effective management to ensure students' academic and personal success. This study aimed to assess the extent of students' academic, emotional, and social adjustment to pre-university life and propose leadership-driven strategies to strengthen institutional transition support. A mixed-methods approach was employed, utilising the validated Student Adaptation to College Questionnaire (SACQ) with 112 matriculation students, complemented by unstructured interviews for deeper qualitative insights. Findings indicated that while students generally demonstrated moderate adjustment, challenges persisted in managing time effectively, adapting to academic workload, and sustaining motivation. Emotional stress, homesickness and varying levels of institutional attachment were also observed. The study recommends leadership-led transition initiatives such as comprehensive orientation programs and peer mentoring systems to enhance student engagement, strengthen institutional belonging, and minimize dropout risks. This study offers practical insights for educational leaders, counselors, and policymakers to advance effective transition management in matriculation colleges. By adopting holistic, values-driven, and student-centred approaches, institutions can cultivate resilient learners equipped to thrive academically, socially, and emotionally during this critical stage.*

*Keywords: Student Adaptation, Matriculation College, Educational Leadership, Transition Support, Pre-University Education*

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## 1. Introduction

Transitioning from secondary school to matriculation college represents a critical stage that shapes students' academic progress and personal growth. While this accelerated pathway provides a shorter, more affordable, and widely recognized entry into higher education, the abrupt shift in the learning environment creates significant adjustment challenges. If not addressed, these may lead to weaker academic performance, weakened institutional attachment, or even dropout risks. Yet, while student adjustment has been widely studied in higher education, research on the Malaysian matriculation context remains limited. Past studies often focus narrowly on academic outcomes or stress, overlooking the multidimensional nature of adjustment and the role of institutional leadership in supporting students. This study therefore seeks (i) to assess the extent of students' academic, emotional, and social adjustment to pre-university life; and (ii) to propose leadership-driven strategies to strengthen institutional transition support.

This study is significant to inform leadership practices in providing targeted transitional support within matriculation colleges. By examining adjustment challenges at the pre-

university level, it extends the limited literature on student adaptation in Malaysia. Practically, it offers leadership-based strategies that position adjustment as not only an individual task but also an institutional responsibility.

## 2. Literature Review

The Matriculation Programme is designed to prepare students for university entry within one or two years depending on the stream. Offered primarily in science, accounting, and engineering, the programme emphasizes academic foundations, critical thinking, and soft skills development. Admission is competitive and matriculation colleges operate as fully residential centres under the Ministry of Education, where students receive government-funded allowances.

Matriculation life plays a pivotal role in shaping student experience by fostering peer interaction, co-curricular involvement, and leadership development, while simultaneously challenging students to manage demanding academic schedules, limited family support, and adaptation to new social environments. The program itself compresses higher education into a short time, requiring mastery of large amounts of coursework, and continuous assessments. Such intensity requires superior organizational skills, effective use of time, and extended performance under strain. Yet, many students experience emotional distress, homesickness, and feelings of unfamiliarity since matriculation represents their first extended period away from family. Such a student with weak coping strategies is thus very prone to maladaptive behaviours, further augmenting the difficulty of this phase (Manee et al., 2024).

The transitional difficulties that matriculation students face are multidimensional with each adjustment area poses special needs. Academic adjustment requires motivation, goal clarity, and strong time management, particularly as the students' transit from the comparatively regimented secondary education system to college's independent learning approach (Fu et al., 2025). Personal-emotional adjustment encompasses a student's ability to navigate the transitional phase of matriculation by fostering autonomy and assuming greater responsibility. This domain involves managing stress, fatigue, and mood fluctuations, with self-esteem and emotional intelligence serving as protective factors (Mansor & Khalid, 2012). Social adaptation encompasses the students' ability to form meaningful relationships and navigate diverse values within a new peer community, whereas institutional attachment indicates their engagement in campus life. Both dimensions strongly impact well-being and retention (Dost & Mazzoli Smith, 2023; Chemagosi & Ajayi, 2023). Other variables such as spiritual well-being, programme interest, changes in language use and money management also shape adaptation, creating motivation and resilience (Mansor & Khalid, 2012; Tengku Besar et. al., 2021).

Worldwide, student adjustment has been widely assessed using the Student Adaptation to College Questionnaire (SACQ), developed by Baker and Siryk (1984). This well-established and psychometrically validated instrument captures the multidimensional nature of adjustment through four domains: academic, social, personal-emotional, and institutional attachment. While shorter forms such as the SACQ-CAT and SACQ-Spanish have been introduced in later studies, the original SACQ remains the most comprehensive, offering full item-level access for in-depth evaluation.

Empirical research employing the SACQ consistently demonstrates that students who adjust well in these domains report stronger engagement, better mental health, and improved academic achievement, whereas those with difficulties are more prone to stress, loneliness, and

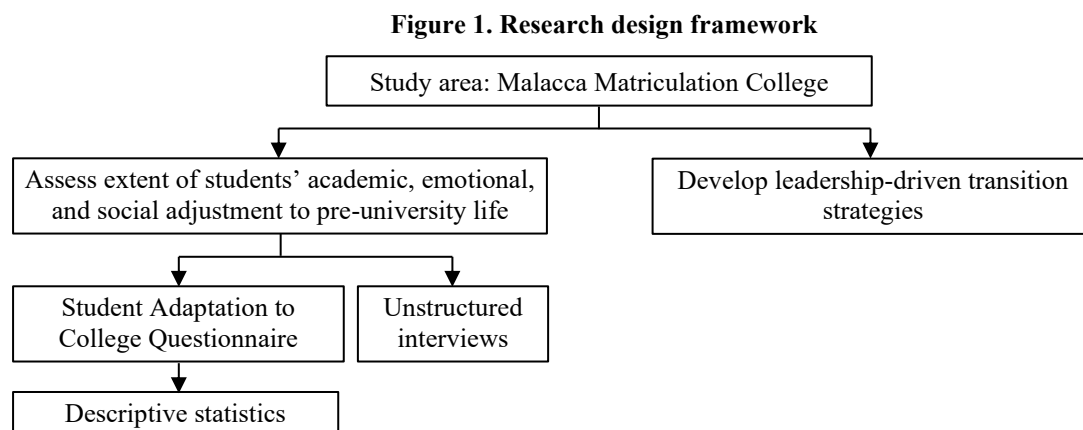
poor outcomes (Manee et al., 2024). Donado et al. (2021) confirmed the internal structure of the SACQ among Colombian freshmen, while Manee et al. (2024) validated its psychometric properties in Iran, extending its cross-cultural robustness. Earlier, Hurtado et al. (1996) highlighted SACQ's usefulness in identifying adjustment challenges among Latino students in U.S. colleges, linking adaptation to persistence and success. In the Malaysian context, Mansor and Khalid (2012) used the SACQ to examine how spiritual well-being influences college adjustment, emphasizing the role of values in transition. Collectively, these findings affirm the SACQ as a reliable and comprehensive tool for understanding student adaptation across diverse higher education settings.

While individual and environmental factors are central, institutional structures and leadership play a decisive role in shaping student adaptation. Educational leadership involves guiding people, processes, and structures toward meaningful improvement (Maheshwari et al., 2024). In pre-university settings, leaders influence learning environments, policies, and institutional culture, thereby directly affecting students' ability to navigate academic, social, and personal challenges. Effective leadership promotes equitable access to resources, integrates technology, and cultivates inclusive environments that foster resilience, confidence, and engagement. Conversely, weak leadership can exacerbate stress and undermine support mechanisms, leaving students vulnerable. Beyond effective administration, leaders are instrumental in shaping students' academic, emotional, and social adaptation, ensuring students are equipped to succeed during this critical transitional phase. Through strategic vision and supportive practices, educational leaders will indirectly yet significantly contribute to the long-term success of both learners and institutions.

### 3. Research Methodology

#### 3.1 Research Design Framework

This exploratory study on students' adjustment to pre-university life focuses on the first month of students' transition from secondary school to Malacca Matriculation College. A mixed-methods approach was employed, in which the Student Adaptation to College Questionnaire (SACQ) was conducted initially through random sampling to collect data on the level of students' adjustment. The scores for each item were then evaluated using descriptive statistics to assess the extent of students' academic, emotional, and social adjustment to pre-university life. To provide deeper qualitative insights, unstructured interviews were conducted as supportive evidence. Following that, leadership-driven transition strategies were proposed for all stakeholders, particularly educational leaders, to strengthen transition support for matriculation students. **Figure 1** depicts the research design framework employed in this study.



### **3.2 Sampling Techniques**

Malacca Matriculation College was chosen as the study area, as it is one of the largest matriculation colleges in Malaysia, with nearly 2800 students per year. Furthermore, the students come from different states and family backgrounds. This study focuses only on the current cohort of newly registered one-year program students to ensure more significant adjustment results.

The sample size for the SACQ survey was determined using the adjusted formula proposed by Ahmad and Halim (2017), which is based on Cochran's widely recognized formula developed in 1977. By adopting this adjusted formula, the present study ensures adequate statistical power while also considering resource limitations such as time and budget constraints. Hence, a total of 112 participants were selected to represent the larger population of approximately 1,670 one-year matriculation students. This sample size was deemed sufficient for producing reliable findings and practical for serving as representative data of the matriculation population. The determination of this sample size was based on an alpha level of 0.05 and a margin of error of 0.03 for continuous data.

### **3.3 Research Instruments**

The SACQ survey was adapted and adjusted to assess students' adaptation to matriculation life. To suit the matriculation contexts, the original survey consisting of 67 items was revised, where Item 23 and 47 were affected. The former Item 23 was amended to "Getting a 4.0 CGPA is very important for me" while Item 47 "I expect to stay at this college for a bachelor's degree" was omitted as it is irrelevant to the matriculation students. Meanwhile, the 9-point Likert scale was retained, ranging from "Doesn't apply to me at all" to "Applies very closely to me". The SACQ survey was built on Google Forms. This platform was chosen as it is fast, easy to build and free to use. Besides, Google Forms is very mobile-friendly, allowing students to access the survey anytime, anywhere. Since data is automatically collected in Google Sheets, data analysis could be conducted directly.

To complement the SACQ results, unstructured interviews were conducted with 8 randomly selected matriculation students. The interview sessions were conducted one-to-one, with the opinions being voice-recorded. A total of 8 questions were asked, allowing participants to share their perspectives on academic, social, and emotional adjustment. Participants were encouraged to speak freely, and the interviewer used follow-up prompts when needed to capture more detailed insights. The recorded data were later transcribed and analysed, complementing the SACQ findings.

### **3.4 Data Collection Procedures**

Random sampling was used to collect data on SACQ surveys from July 21 to July 28, 2025. This time period marks about one month after the batch of new students had registered in June 2025 and completed their orientation in the first week. The Google form of self-report SACQ surveys was shared with the 117 randomised one-year program students in the college, which were later screened to identify 112 qualifying data samples. In addition, unstructured interviews with 8 students were conducted to gain wider insights into the SACQ survey findings. These combined data were expected to provide valuable information for developing leadership-led strategies to support students' smooth transition into the college.

### **3.5 Data Analysis**

The obtained results from the SACQ survey were then tabulated in Microsoft Excel. Before analysis was conducted, the negatively worded items underwent reverse coding to ensure all

items were in the same direction. Following that, descriptive statistics were employed to obtain the mean adjustment score of each item in the SACQ survey, along with the mean score for each dimension. These scores were then grouped into three levels: scores of 1-4 indicate low adjustment, 5-6 indicate moderate adjustment and 7-9 indicate high adjustment. Afterward, significant and relevant responses recorded from the unstructured interviews were highlighted and documented to capture the students' view about their college adjustment.

It is well known that inferential statistics would provide a better analytical option for predicting adjustment levels of the larger population, especially its relationship with students' gender, courses and demographics. However, because the researchers are matriculation students with only basic research training and no formal expertise in advanced statistical techniques, they relied solely on descriptive statistics. This approach was selected for its simplicity and suitability in analysing data on adjustment levels. Additionally, it also avoids the risk of invalid results that might arise from using more complex methods without the necessary skills.

The study focused on a single matriculation college to minimise logistical challenges and allow the student researchers to collect more in-depth data through unstructured interviews. Concentrating on one study area ensured the findings accurately reflected the student adjustment within that college and provided a solid basis for proposing relevant leadership strategies. Given the four-week time-frame, this approach also helped maintain the validity and reliability of the data. Although the results may not apply to all settings, the college's large and diverse student population makes the findings broadly representative of common pre-university adjustment challenges.

## 4. Results

### 4.1 Student Adaptation to College Questionnaire (SACQ)

The findings from the descriptive statistics show that overall, students demonstrated a moderate level of adjustment to college life with mean scores of 5.95. Besides, the results from the analysis of students' academic, social, and personal-emotional adjustment revealed small variations across these three adjustment dimensions, with mean scores of 5.88, 6.10, and 5.57, respectively, which align with the overall mean score. On the other hand, it is surprising that the fourth dimension which is institutional attachment yielded the highest mean score of 7.25. **Table 1** shows the mean score for each dimension.

**Table 1. Mean score for each dimension**

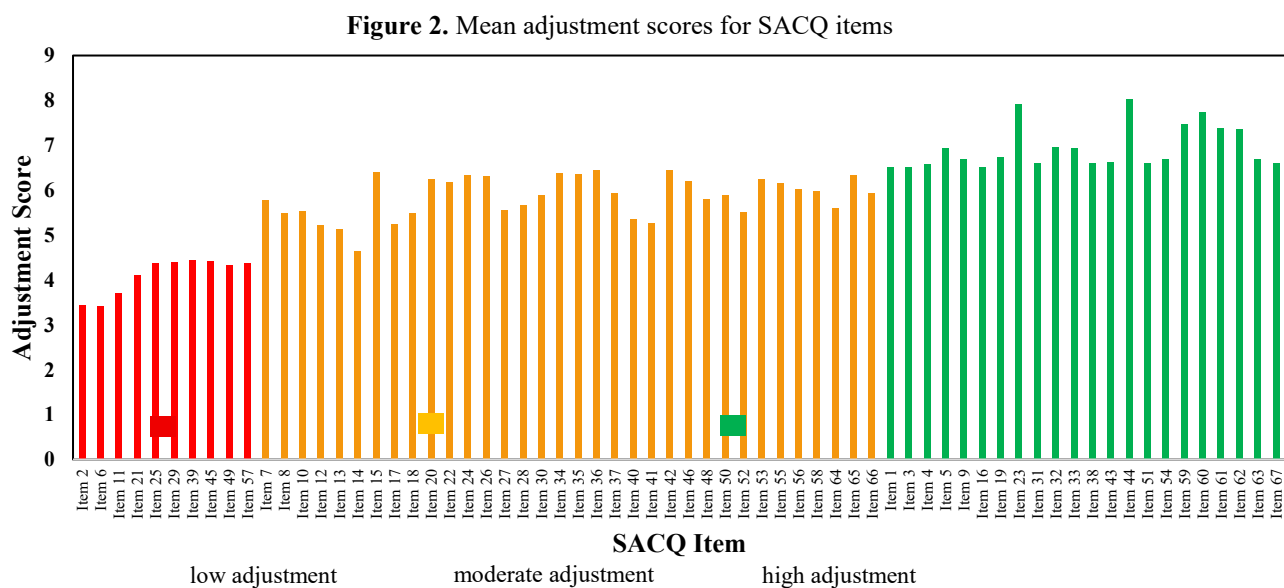
Dimension	Items	Mean
Academic Adjustment	3, 5, 6, 10, 13, 17, 19, 21, 23, 25, 27, 29, 32, 36, 39, 41, 43, 44, 50, 52, 54, 58, 62, 66	5.88
Social Adjustment	1, 4, 8, 9, 14, 16, 18, 22, 26, 30, 33, 34, 37, 42, 46, 48, 51, 56, 57, 63, 65	6.10
Personal-Emotional Adjustment	2, 7, 11, 12, 20, 24, 28, 31, 35, 38, 40, 45, 49, 53, 55, 64, 67	5.57
Institutional Attachment	1, 4, 15, 16, 34, 36, 42, 56, 57, 59, 60, 61, 65	7.25

The analysis of each individual item indicated a varied level of mean score among the students. The three highest adjustment scores were recorded for Item 44, "I am attending classes regularly" (mean = 8.04), Item 23, "Getting a 4.0 CGPA is very important for me" (mean =

7.91), and Item 60, “Lately, I have been giving a lot of thought to dropping out of college altogether and for good” (mean = 7.74, reverse coded). The prominence of Items 44 and 23 highlights students’ strong academic commitment and high achievement orientation, while Item 60 suggests generally strong institutional attachment, with minimal considerations of withdrawal. Nevertheless, certain items under this dimension indicated moderate adjustment, such as Item 56, “I feel I am very different from other students at college in ways that I don’t like” (mean = 6.02). Furthermore, a small group of respondents recorded very low scores on Item 60, suggesting that, although institutional engagement is generally high, some students remain at risk of detachment.

Conversely, ten items recorded low adjustment scores, reflecting persistent academic, emotional, and social challenges. Within the academic domain, five items reported particularly low means: Item 6, “I am finding academic work at college difficult” (mean = 3.41), Item 21, “I’m not really smart enough for the academic work I am expected to be doing now” (mean = 4.12), Item 25, “I haven’t been very efficient in the use of study time lately” (mean = 4.38), Item 29, “I really haven’t had much motivation for studying lately” (mean = 4.40), and Item 39, “Recently I have had trouble concentrating when I try to study” (mean = 4.44). These findings indicate difficulties with workload and time management, concentration, as well as intrinsic motivation, which may undermine overall academic performance.

In the personal-emotional dimension, four items also revealed low adjustment: Item 2, “I have been feeling tense or nervous lately” (mean = 3.44), Item 11, “I have felt tired much of the time lately” (mean = 3.72), Item 49, “I worry a lot about my college expenses” (mean = 4.33), and Item 45, “Sometimes my thinking gets muddled up too easily” (mean = 4.43). These results highlight the emotional distress, fatigue, and financial concerns among students. Finally, only one item under the social dimension demonstrated a low score, Item 57, “On balance, I would rather be home than here” (mean = 4.38), suggesting that homesickness and weak social integration, while less prevalent, remain important factors for some individuals. **Figure 2** shows the adjustment level for each SACQ item.





## 4.2 Unstructured interviews

The unstructured interviews provided complementary insights to the SACQ results, underscoring the multidimensional nature of student adjustment in matriculation. Participants emphasized the academic transition as a central challenge. While some students adapted smoothly through established routines, others struggled with time management and coping with the accelerated pace of assessments and heavier workloads.

Beyond academics, students described emotional pressures such as stress, alongside coping strategies like balancing rest with study demands, and seeking peer support. Social experiences were mixed, with hostel life and group tasks fostering connection for some, while others perceived relationships as temporary. Distractions, particularly mobile phones and procrastination, were also identified, with students employing self-regulation strategies to maintain focus. **Table 2** links the unstructured interview responses to the related SACQ items.

**Table 2. Summary of unstructured interview with related SACQ items**

Interview Theme	Students Response	SACQ Item
Adjustment to Coursework	“The workload is heavier..”, “..so many assignments and tests..”, “..had to rush through a lot of topics..”, “..but slowly I managed to catch up..”	Item 6
Time Management	“It’s busier with group work, co-curriculars and hostel life..”, “..I learned to manage time better..”	Item 25
Coping with Stress & Pressure	“..everyone is under stress.. I’m not alone..”, “..when overwhelmed, I take breaks..”, “..share feelings with friends..”, “I see stress as motivation..”	Item 2, Item 11
	“..if you fall behind, it’s hard to catch up..”, “in school, lessons repeated.. here, we only get one chance..”	Item 29
Distractions & Maintaining Focus	“..biggest distraction is my phone..end up wasting time..”, “..procrastination..must sets clear goals..”	Item 39
Social Integration & Belonging	“less belonging than school..”, “at first, I was worried about fitting in..”, “initially an outsider, later felt included”	Item 56
Homesickness & Adjustment	“..homesick after weeks..”, “..took time to adapt..”, “adapting quickly will help in university..”	Item 57

## 5. Discussion

### 5.1 Students’ Adjustment to Matriculation Life

Overall, the moderate levels of adjustment suggest that matriculation students are adapting under significant academic, emotional, and social demands, reflecting a transitional stage between coping and thriving. Academically, the heavy workload and fast-paced programme demanded stronger time management and self-discipline compared to secondary school. The item-level analysis shows that, while some students adopted strategies such as goal-setting or breaking tasks into smaller units, many still struggled with procrastination, concentration difficulties, and sustaining motivation. These findings are consistent with prior research emphasizing the importance of self-regulation and time management for academic persistence in pre-university contexts (Chemagosi & Ajayi, 2023).

Emotional adjustment was shaped largely by academic pressure. Students frequently compared themselves with high-achieving peers, which contributed to self-doubt, fatigue, and fluctuating resilience. Although homesickness and financial concerns were present, they were less influential than the intensity of the syllabus. Some students reframed stress as a form of motivation and sought peer support, yet many lacked consistent emotional regulations, underscoring the significance of self-esteem and emotional intelligence in successful adaptation (Elias et al., 2009; Mansor & Khalid, 2012).

Socially, hostel living, co-curricular participation, and peer interactions strengthen students' sense of belonging and mutual support, buffering the impact of academic and emotional stress. These patterns align with evidence that social connectedness and peer networks are essential protective factors during the students' transitions (Goorwich, 2025; Manee et. al., 2024; Tengku Besar et. al., 2021). In reality, actual dropout cases at the college remain low, reflected in the overall high level of institutional attachment, as most students stay engaged and academically motivated. This supports previous findings that a strong sense of belonging not only protects students' mental health but also has lasting positive effects on academic performance and continuing enrolment (Mangino, 2023).

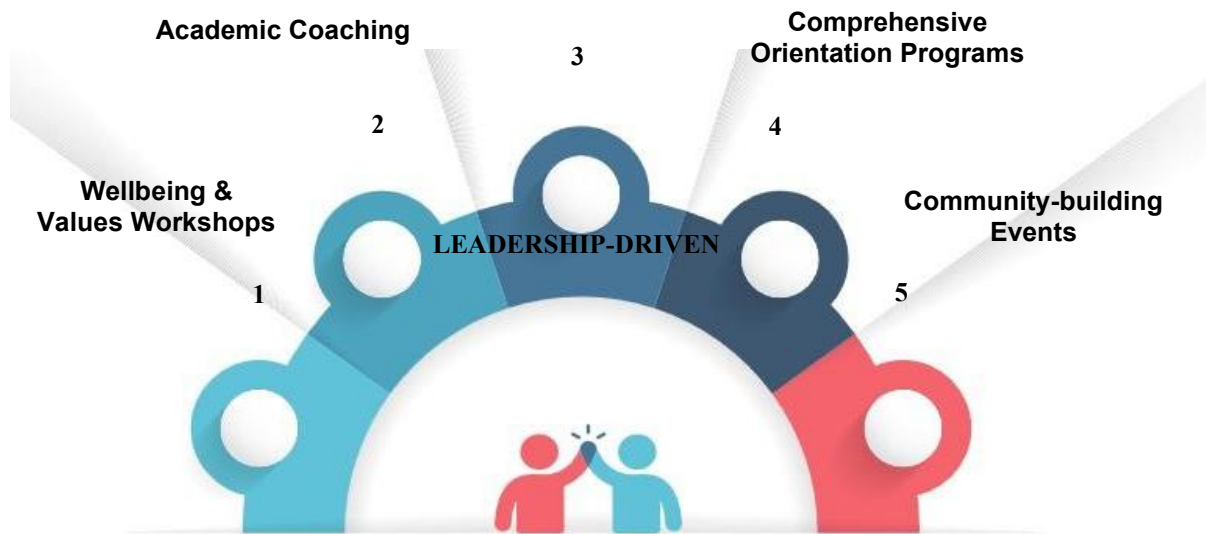
Nevertheless, introverted students, late entrants, or those facing communication barriers reported slower adjustment and occasional feelings of isolation. Roommate conflicts and dissatisfaction with compulsory social activities also presented additional challenges. In addition, some students viewed matriculation primarily as a stepping stone to university, focusing on academic goals, rather than developing deep sense of loyalty to the institution. This varying perception was often reinforced by the need to comply with institutional expectations while managing academic struggles or difficulties adapting to hostel life.

This paradoxical pattern indicates that although the matriculation students demonstrate resilience, engagement, and institutional commitment, they remain vulnerable when personal-emotional or academic challenges are left unaddressed. Hence, the combined results of SACQ scores and interview data underscore the critical need for targeted institutional initiatives that not only strengthen academic self-regulation but also support students' emotional well-being and social integration.

## **5.2 Leadership-driven Transition Strategies**

The study highlights the essential role of educational leaders in guiding students through the critical transition periods from secondary school to matriculation. With deliberate intervention through tangible leadership-led strategies, this helps in preparing students for the multidimensional challenges they will face in college. In higher education, strategic leadership is essential for driving systemic reforms that support student success. Therefore, instructional leadership must be conducted effectively by developing clear missions and goals, managing educational processes, and promoting an academic learning climate. In order to strengthen adjustment and institutional transition support, several leadership-led strategies have been proposed, as summarized in **Figure 3**.

**Figure 3. Leadership-driven transition strategies**  
**Peer Mentoring Systems**



Firstly, academic coaching clinics should be the top priority of the educational leaders, as findings showed students had moderate challenges in study efficiency and concentration. This includes proactive monitoring of student progress, early identification of at-risk individuals, and timely interventions through counselling, advising, and targeted academic support. Small-group or one-to-one academic coaching clinics run by lecturers or trained facilitators focusing on study techniques, exam strategies, and personalized academic planning. These sessions can directly enhance student retention by enabling educators to monitor academic progress, identify areas of potential difficulty, and provide timely, personalized support and interventions (Aminzadeh, 2023).

Recognizing that transition is not purely academic, leaders should also embed regular spiritual well-being and values-based workshops or short retreats into their initiatives. Interviews revealed that many students struggled with emotional distress, fatigue, and financial worries, highlighting the need for holistic support beyond academics. By integrating stress management, resilience-building, and reflection on personal values, including spiritual and cultural aspects, these sessions help students strengthen their self-awareness and emotional well-being holistically. In fact, spirituality has been emphasized as an important factor in supporting students' capacity to navigate college life, as it guides their personal goals and strengthens their ability to cope with challenges. This is consistent with SACQ findings, which showed that spiritual well-being is closely linked to students' academic, social, and emotional adjustment, suggesting that these dimensions are closely interrelated and mutually reinforcing (Mansor & Khalid, 2012).

The third initiative to strengthen institutional belonging is by organizing community-building events, which refer to activities that bring students together in meaningful, supportive ways beyond academics. Although students generally showed strong institutional attachment, interview responses revealed feelings of social isolation among some individuals. To address this, leaders can organize cultural festivals, fun runs, and other informal gatherings to foster inclusivity and help students form early peer bonds. Leaders may also encourage the establishment of interest-based clubs and student-led projects to directly enhance attachment

to the college and reduce the risk of disengagement (van Kessel et al., 2025). These events show that leadership is not only about policies but about creating safe, supportive, and vibrant communities that help students feel anchored to their institution.

The first week of college marks a particularly vulnerable phase as students transition from the structured school system to the independent learning style of matriculation. Both SACQ results and interviews indicated that students faced challenges with workload pace and adapting to fewer repetitions compared to school. Hence, the transition can be scaffolded through the fourth strategy, which is comprehensive orientation programs. Leaders should establish well-structured orientation initiatives that extend beyond academic briefings, incorporating readiness workshops, campus resource introductions, and peer networking activities. These initiatives ensure students establish new relationships, seek guidance, and access the support necessary to succeed academically (Bagdasar, 2025).

Finally, educational leaders should empower the peer mentoring system to create a positive and inclusive college culture. SACQ results and interviews indicated challenges with homesickness, stress, and sustaining motivation, highlighting the need for continuous peer support. This can be achieved by mobilizing trained senior students as mentors to facilitate the newcomers in ensuring smooth transitions from one environment to another. The peer mentoring helps students in addressing the non-academic challenges they may face, where students feel valued and supported at all times while they are in college. Besides, through this personalised system, mentors play a pivotal role in supporting students through challenges, providing strategies that enhance academic performance and foster self-confidence (Nti, 2025). By fostering supportive relationships and providing strategic guidance, educational leaders can significantly impact student learning outcomes and ease the adjustment challenges. However, it is necessary to ensure these mentors are provided with targeted professional development and training to enhance the mentorship effectiveness.

## 6. Conclusion

This study highlights that while matriculation students navigate their transition with moderate success, they continue to face academic pressures, time constraints, and emotional stress. These challenges underscore the complexity of adaptation during this critical phase and the need for targeted institutional support that extends beyond academics. The proposed leadership-driven strategies offer a pathway to foster resilience and belonging among students academically, socially, and emotionally. By strengthening leadership roles in embedding student-centred strategies into institutional practices, matriculation colleges can better equip learners to manage transition challenges and ultimately transform into supportive environments that cultivate readiness for the rigours of university life.

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## FROM METRICS TO MEANING: REIMAGINING DIGITAL LEADERSHIP THROUGH *TECHNĒ*

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**Abstract:** *Digital leadership in education is often defined through managerialist and behaviorist paradigms, focusing on data systems, platform adoption, and performance efficiency. While these approaches offer pragmatic direction, they risk reducing leadership to a technocratic function, divorced from ethical purpose and epistemic depth. This paper reconceptualises digital leadership as a form of epistemic technē (a truth-revealing act), drawing on philosophical textual analysis of Martin Heidegger's seminal essays, *Being and Time* (1927) and *The Question Concerning Technology* (1977). Interpreting technē as a poietic process of bringing-forth meaning, the paper identifies three core themes: (1) digital leadership as a practice of revealing and concealing, (2) digital leadership as world-building, and (3) digital leadership as custodianship of educational meaning. These insights challenge the instrumental logic of dominant leadership frameworks and foreground the leader's role in shaping the epistemic and ethical horizons of education. The analysis carries significant implications for Malaysia's MADANI framework, reinterpreting digital leadership as an act of sustaining (keMampanan), well-being (kesejahteraan), creating (Daya cipta), respecting (hormat), trusting (keyakinan), and embodying compassion (Ihsan). By reinterpreting digital leadership as a systemic and value-driven form of technē, this paper invites educational leaders to move beyond efficiency and toward ethical, humanising, and future-oriented practices.*

**Keywords:** *Digital Leadership; Technē; Heidegger; Philosophy of Technology; Educational Leadership.*

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### Introduction

Imagine a school as a modern ship sailing through turbulent waters. The vessel is equipped with state-of-the-art navigation systems, digital dashboards, and automated sails. Yet, despite this technological sophistication, it struggles to reach its destination. Not because of faulty machinery, but because no one has paused to ask: *What is the destination? Why are we sailing in this direction? Who decides what is valuable along the journey?*

This analogy reflects a growing concern in Malaysian education. While the system has made significant strides in digital integration through initiatives like the long-standing commitments under the Malaysia Education Blueprint 2013–2025 (PPPM), the role of leadership in this transformation remains narrowly framed (Bush & Ng, 2019). Much of the current discourse defines *digital leadership* as the ability to implement ICT policies, manage digital tools, and produce data-informed outcomes. While such capabilities are necessary, they are not sufficient.

Within the broader ambition of building a Malaysia MADANI the question arises: *What kind of digital leadership do we need to honour the principles of human dignity, sustainability, and ethical governance?* If digital leadership is reduced to platform adoption and performance metrics, then it risks becoming merely a form of technocratic compliance which is devoid of

vision, relational care, or critical reflection (Selwyn, 2016). More troublingly, it may conceal or reproduce existing inequalities under the guise of innovation.

As Malaysia approaches the final phase of PPPM 2013–2025 and charts new pathways under Dasar Pendidikan Digital (DPD), it is imperative to move beyond instrumentalist and reductionist framing of digital leadership. We must begin to ask not only *what* leaders do with technology, but *what kind of world they reveal through it*. This paper proposes that a re-understanding of digital leadership is necessary, one that views it not as a checklist of competencies but as a systemic, values-driven form of stewardship, embedded in purpose, presence, and ethical responsibility.

## Literature Review

The word *digital* originates from the Latin *digitus*, meaning “finger”, the primary instrument used for counting. Historically, the concept of digital was thus linked to behavioural representation through discrete values (Gleick, 2011). In the 20th century, the term took on a more complex technological meaning with the advent of binary information systems, which enabled computers to process, encode, and transmit data using ones and zeroes. This shift gave rise to the modern notion of “*digital*,” referring not only to computational processes but to a broader regime of datafication, where information is stored, managed, and interpreted in quantifiable forms (van Dijck, 2014).

It is against this backdrop that the concept of digital leadership entered educational discourse. As schools and systems began integrating digital technologies into teaching, learning, and administration, leadership roles were redefined. The digital leader emerged as one who could not only manage hardware and software but also leverage data for decision-making, drive innovation, and orchestrate institutional transformation (Sheninger, 2014; Dexter, 2011). This leadership ideal was seen as necessary in the face of rapid technological change and the mounting pressure for educational institutions to modernise.

However, the incorporation of the “*digital*” into leadership brought with it an implicit logic, a technocratic logic grounded in behaviourist and managerial paradigms. Early models such as the Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006) emphasised the integration of technology with pedagogy and content, reflecting an applied epistemology: leadership as effective orchestration of tools. The International Society for Technology in Education (ISTE) Standards for Leaders offered a competency-based rubric that assessed digital fluency, innovation culture, and strategic implementation. Similarly, the SAMR (Substitution, Augmentation, Modification, and Redefinition) model (Puentedura, 2013) proposed a hierarchy of digital integration, from simple substitution to transformative redefinition. Sheninger’s (2014) *Digital Leadership* model advanced a pragmatic seven-pillar approach including communication, branding, and digital citizenship which are structured to guide school-wide reform.

While these frameworks are practical and widely adopted, they reflect what Cuban (2001) critiques as the “*managerialist framing of reform*”, an approach that privileges efficiency, productivity, and standardization over reflection, values, and systemic critique. Digital leadership, in this context, becomes synonymous with instrumental rationality: the ability to deploy tools and measure outcomes. Leaders are tasked with orchestrating complex systems but are rarely encouraged to ask what those systems mean, conceal, or ultimately serve.



This instrumentalist orientation reduces leadership to the management of variables: devices, platforms, metrics, and results. It promotes a view of technology as neutral and leadership as procedural. In doing so, it occludes the relational, ethical, and ontological dimensions of leadership, how digital systems affect identity, relationships, purpose, and justice in education (Selwyn, 2016; Williamson, 2017). Teachers and students are often positioned as data sources or system actors rather than as moral agents and co-constructors of educational meaning.

This framing also has implications for national contexts. In Malaysia, the DPD and the PPPM 2013–2025 both emphasise digital readiness and data-driven improvement. Yet, these policies also reference holistic aspirations such as equity, values, and lifelong learning that risk being marginalised if leadership is understood solely through a digital-technocratic lens. More critically, the recent MADANI framework reaffirms national aspirations toward leadership anchored in *sustaining (keMampanan)*, *well-being (kesejahteraan)*, *creating (Daya cipta)*, *respecting (hormat)*, *trusting (keyakinan)*, and *embodying compassion (Ihsan)*. These are values that require deeper philosophical grounding, not just operational implementation.

Hence, two interrelated conceptual gaps emerge in the digital leadership literature:

1. The ontological gap: Leadership is rarely examined as a way of being-in-relation with digital systems. Instead, it is treated as a series of tasks or behaviours, abstracted from context and ethical meaning.
2. The ethical gap: There is limited interrogation of how digital systems encode values or exclude certain voices, and how leaders navigate moral tensions in data governance and platform dependency.

These gaps point to a deeper question that remains underexplored in the literature: *What are the values embedded in digital leadership, and how can they be interpreted through a more reflective philosophical lens?* This paper responds to that question by turning to philosophical inquiry, aiming to surface the unspoken assumptions and forgotten possibilities that lie beneath our current understandings of digital leadership.

## Methodology

This study adopts a philosophical textual analysis design, focusing on the interpretation of foundational philosophical texts to generate insights relevant to educational leadership. Unlike empirical studies that gather data from participants, philosophical inquiry treats texts as sites of conceptual dialogue where meanings are uncovered and reframed for contemporary contexts (Kinsella, 2006). This approach is particularly suited for leadership studies that aim to interrogate the assumptions underpinning practice, rather than to measure its outcomes. In this sense, the design aligns with traditions of philosophical hermeneutics (Gadamer, 2004), where understanding is generated through an iterative interplay between the interpreter's questions and the horizon of the text.

Among numerous philosophical traditions that address technology such as the Frankfurt School (Marcuse, Adorno), critical post-structuralists (Foucault, Latour), and contemporary ethics of AI (Floridi), Heidegger was chosen due to the foundational nature of his ontological critique. Heidegger's work does not merely evaluate technology's effects; it interrogates the conditions of being under which technology operates and reveals.

The primary text analysed is Martin Heidegger's *The Question Concerning Technology* (1977). This work was purposively selected for its sustained critique of instrumental reason and its

articulation of *technē* as a mode of revealing rather than as mere technical skill. Although Heidegger's broader *oeuvre* (e.g., *Being and Time*, 1927) offers important ontological foundations, this study narrows its focus to *technē* as a conceptual lens for digital leadership.

As noted by Feenberg (1999), Heidegger's critique of technology offers not only a warning but also a pathway to rethink our relationship with technological systems. His notion of *technē* as *poiesis* (a process of bringing forth truth). Specifically, Heidegger's notion of *technē* as a mode of *poiesis* offers a profound counterpoint to the dominant instrumentalist views. While other thinkers address power or use, Heidegger addresses what kind of world technology discloses, making his thought especially relevant for leadership that seeks to be values-driven and future-conscious.

The analysis followed a close reading and thematic interpretation. Analytical codes were initially drawn from Heidegger's own vocabulary (*technē*, *poiesis*, *enframing*, *revealing/concealing*) and then expanded inductively to explore their implications for leadership, ethics, and meaning-making in education. This interpretive process was hermeneutic and iterative: themes were revisited in light of secondary literature and the researcher's own positionality as an educator in Malaysia.

The analysis is anchored in Heidegger's ontology of technology, specifically his interpretation of *technē* as a mode of revealing. This framework is appropriate because it provides a counterpoint to the dominant instrumentalist models of digital leadership (e.g., TPACK, SAMR, ISTE), which often assume technology to be neutral. Heidegger allows us to interrogate not only *how* leaders use technology but also *what kind of world leadership discloses* through that use.

Importantly, this paper argues that textual analysis is a valid and rigorous method within educational leadership research. Leadership is not only a matter of practice but also of ideas, values, and epistemic commitments. Texts (whether policy documents or philosophical works) structure how leaders imagine their roles and responsibilities. As Biesta (2015) suggests, philosophical inquiry does not simply add abstract reflection; it transforms how educational problems are seen and framed. By engaging Heidegger hermeneutically, this study seeks to reimagine digital leadership not as compliance management but as an epistemic, value-oriented practice.

In this philosophical inquiry, trustworthiness is not established through replication or statistical validity, but through conceptual rigour, interpretive depth, and transparency of reasoning (Tracy, 2010; Kinsella, 2006). The trustworthiness of this study is supported in the following ways:

- a) Interpretive Coherence: The analysis maintains internal consistency between Heidegger's text, the extracted themes, and their application to educational leadership.
- b) Conceptual Transferability: While this is not a generalisable study, the philosophical insights can be transferred to other discussions of leadership in digital, policy, or curriculum contexts.
- c) Rigour of Engagement: The textual reading process included iterative engagement with primary concepts, complemented by secondary philosophical and educational sources to guard against misinterpretation.
- d) Reflexivity: The researcher's positionality (as both an educator and leadership scholar within the Malaysian context) was acknowledged and critically examined to ensure the analysis remained dialogical, not deterministic.

This philosophical textual analysis seeks not to produce definitive solutions, but to reframe how digital leadership is thought, valued, and enacted, inviting deeper reflection within both scholarly and practitioner communities. As Kinsella (2006) argues, philosophical inquiry in education gains legitimacy not by solving problems, but by transforming how problems are seen. The intention is not to produce prescriptive models but to challenge existing assumptions and offer philosophically informed alternatives.

### Findings: Digital Leadership as Epistemic *Technē* Action

The analysis of Heidegger's *The Question Concerning Technology* reveals that *technē* is not, as commonly misunderstood, simply a technique or skill. Rather, it is a mode of revealing which is a process by which truths are brought into presence, and realities are disclosed (Heidegger, 1977). When applied to digital leadership, this reframing suggests that leadership is not merely a managerial response to technological change but a fundamentally epistemic and ethical act: to lead digitally is to reveal a certain world, a particular version of education, learning, and institutional purpose.

This section presents three interwoven themes that emerged from the philosophical textual analysis: (1) Digital leadership as revealing and concealing, (2) Digital leadership as world-building, and (3) Digital leadership as custodianship of meaning.

Taken together, the analysis suggests that digital leadership is best understood not as a set of managerial techniques but as an epistemic practice that reveals, orders, and safeguards meaning in education. The three themes highlight different dimensions of this work: how digital systems disclose some realities while concealing others, how they construct particular visions of schooling, and how leaders act as custodians of the values embedded in these systems. To provide a clearer overview, Table 1 below summarises these themes, situating Heidegger's insights alongside their application to digital leadership and their implications for educational practice.

Table 1. Digital Leadership as Epistemic *Technē* Action

Theme	Heidegger's Insight	Application to Digital Leadership	Implication for Leaders
1. Revealing and Concealing	Technology is a <i>mode of revealing</i> that discloses some truths while concealing others (Heidegger, 1977, p. 13).	Dashboards and analytics reveal measurable indicators (scores, attendance, completion rates) but conceal student well-being, pedagogical labour, or cultural context.	Leaders must act as mediators of visibility, discerning what digital systems bring into focus and what they obscure.
2. World-Building	Modern technology <i>enframes</i> reality ( <i>gestell</i> ), ordering it into calculable and controllable forms (p. 19).	Platforms and metrics construct a particular vision of schooling where students become data profiles and teachers become performance inputs.	Leaders are not just system managers but world-builders, shaping what kind of educational reality digital infrastructures disclose.

3. Custodianship of Meaning	<i>Technē</i> is a form of <i>poiesis</i> which is a bringing-forth that reveals truths beyond technical manipulation (p. 13, p. 28).	Decisions about platforms, indicators, and reporting define what counts as knowledge and whose voices are valued in education.	Leaders become custodians of meaning, curating what educational values are revealed and resisting reduction to metrics alone.
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### Theme 1: Digital Leadership as Revealing and Concealing

At the heart of Heidegger’s philosophy of technology is the claim that technology is not neutral but a mode of revealing (a way of disclosing how the world comes into presence). As he states, “*Technology is a way of revealing. Technology comes to presence in the realm where revealing and unconcealment take place*” (Heidegger, 1977, p. 13).

Applied to digital leadership, this insight suggests that digital systems are never simply functional tools. Each platform such as dashboards, analytics reports, or learning management systems selectively reveals certain realities while concealing others. For example, dashboards make visible exam scores, attendance rates, and engagement metrics, but they obscure less quantifiable aspects such as student well-being, cultural identity, or pedagogical labour.

Heidegger cautions that this narrowing of vision is not incidental but is structured by modern technology’s logic of ordering, what he terms *enframing* (*gestell*). In this mode, people and practices risk being reduced to resources for optimisation, or what Heidegger calls *standing-reserve* (*bestand*). In education, this can manifest when schools are perceived primarily as data warehouses, teachers as inputs into performance systems, and students as analytic profiles. He warns, “*The essence of technology, as a destining of revealing, is the danger*” (Heidegger, 1977, p. 26).

The danger, then, is epistemic: when digital leadership privileges what is easily measured, it risks overlooking the relational, ethical, and human dimensions of learning. As Selwyn (2016) argues, data-driven education “*naturalises abstraction*,” filtering complex realities through what is legible to machines. What leaders must recognise is that digital systems not only show but also silence. Each act of revealing carries with it an act of concealing, and leadership decisions inevitably determine what becomes institutionally visible and what remains hidden.

### Theme 2: Digital Leadership as World-Building

Heidegger extends his analysis by describing modern technology as *enframing* (*gestell*), a mode of ordering that challenges the world to appear in calculable and controllable forms. As he writes, “*Enframing means the gathering together of that setting-upon which sets upon man, and puts him in position to reveal the real, in the mode of ordering*” (Heidegger, 1977, p. 19).

For digital leadership, this insight highlights how platforms do more than visualise information as they encode a worldview. Dashboards present student progress as linear and quantifiable, decision-support systems prioritise efficiency, and analytics structures determine what counts as success. Each choice of system or metric contributes to the construction of a particular vision of schooling.

In this sense, digital leadership functions as a form of world-building. Schools that rely heavily on performance dashboards, for example, construct an educational reality where learning is primarily understood as data points. Teachers, students, and even institutions risk being positioned as elements within a system to be optimised, rather than as agents in a relational and moral practice of education. Heidegger cautions that this reduction risks stripping education of its texture, transforming it into a domain of standing-reserve (*bestand*).

In this light, digital leadership can also be seen as a poietic act which is an act of crafting the world of education. This echoes a work by Biesta (2015), who insists that education must not be reduced to technical effectiveness but must be “*brought forth*” with deliberation, desire, and responsibility. A digital leader, then, is not merely one who integrates systems, but one who asks: *What kind of world does this system build? Whose realities does it enable or erase? What kinds of learners, teachers, and futures are we shaping through these technologies?*

### **Theme 3: Digital Leadership as Custodianship of Meaning**

Heidegger reminds us that the original meaning of *technē* belongs to the domain of the arts. It is not merely production or manipulation but a form of *poiesis* (a mindful bringing-forth). As he writes, “*Technē is a mode of revealing. It reveals whatever does not bring itself forth and does not yet lie here before us*” (Heidegger, 1977, p. 13).

Viewed through this lens, digital leadership can be understood as a custodial practice. Each decision to adopt a platform, prioritise certain indicators, or structure reporting processes is not simply operational but epistemological: it shapes what counts as knowledge, how learning becomes visible, and which aspects of teaching are valued. Heidegger’s warning about enframing underscores the risk that uncritical use of technology reduces educational meaning to measurable outputs, excluding dimensions that cannot be easily quantified.

At the same time, he suggests that within technology lies the possibility of the “*saving power*” (Heidegger, 1977, p. 28). For leaders, this means exercising discernment which is interpreting digital systems, not only as instruments to manage efficiency but as sites where meaning can be revealed, protected, or distorted. Leadership, in this sense, is less about control and more about stewardship: curating which truths are brought into unconcealment and resisting the silencing of educational values that metrics alone cannot capture.

This echoes Williamson’s (2017) critique of “*governance by data*”, where educational values are reconfigured according to what is measurable, efficient, and scalable. The consequence is that pedagogical meaning which refers to the why and how of teaching that can be displaced by data logic. Digital leadership, then, must act as a counterweight to this trend, reclaiming educational decision-making as a fundamentally humanistic and interpretive endeavour.

Seen in this light, digital leadership becomes a form of moral craftsmanship. The leader is not simply orchestrating digital transitions, but curating what kind of truths are enacted, what kinds of learning are privileged, and what futures are imagined through these systems. Leadership becomes an act of attunement, echoing Heidegger’s notion that thinking itself is thanking which is a posture of reverence and responsibility toward Being.

This theme also resonates with the MADANI vision of Malaysia, which emphasizes values such as sustainability (*kemampanan*), well-being (*kesejahteraan*), creating (*daya cipta*), respect (*hormat*), trust (*keyakinan*), and compassion (*ihsan*). A digital leader grounded in these principles will not pursue technological innovation for its own sake but will critically ask: *Does*

*this system respect the dignity of students and teachers? Does it support sustainable educational practices? Does it cultivate trust, and does it embody compassion in its design and implementation?*

In sum, digital leadership as custodianship of meaning requires an expanded ethical imagination. It involves resisting the seduction of technical mastery, and instead embracing a slower, more reflective mode of leading which means one that listens to what is emerging, cares for what is becoming, and holds space for meanings that cannot be reduced to metrics. It is in this act of philosophical and pedagogical stewardship that digital leadership reclaims its human vocation.

## **Discussion**

The analysis shows that the real concern in Malaysian digital leadership is not technological readiness, but the epistemic stance from which leaders operate digital systems. The Ministry's platforms such as SPLKPM, E-RPH, and DELIMa are already capable of collecting and displaying vast amounts of data. However, the way these platforms are used determines whether they reveal rich educational realities or reduce the complexity of teaching and learning to thin, bureaucratic signals.

When leaders operate in a behavioral/managerial mode, digital leadership becomes synonymous with digital compliance. This mode privileges what is bureaucratically legible such as counts, timestamps, completion percentages while concealing the deeper pedagogical, ethical, and cultural layers of schooling. This reflects what Heidegger (1977) calls *enframing (gestell)*, where technology orders reality into a narrow set of measurable categories, sidelining what does not fit its logic.

By contrast, the epistemic *technē* mode treats digital leadership as an interpretive, curatorial, and world-building act. The leader asks:

*What kind of truths does this platform bring into view?*

*What important truths are concealed?*

*How can I reconfigure this digital space so that it reveals the educational realities we value?*

The contrast between these two modes is not abstract but becomes visible in the day-to-day operation of Malaysia's core digital education platforms. SPLKPM, e-RPH, and DELIMa all possess the technical capacity to record, store, and distribute information, yet their actual impact depends entirely on the leader's stance. When engaged only in the behavioural or managerial mode, these systems encourage compliance: hours logged, lesson plans submitted, or clicks recorded. In this framing, metrics dominate, and meaning recedes.

Balancing metrics with meaning requires leaders to adopt an epistemic *technē* stance. Instead of rejecting data altogether, they should pair quantitative indicators with qualitative evidence of practice, interpretation, and value. For example, SPLKPM can log hours of professional development while also archiving reflections and artefacts that demonstrate learning impact; e-RPH can capture lesson plans alongside teacher annotations about what worked in practice; and DELIMa can track usage while highlighting projects that embody national values such as *daya cipta* (creativity) and *ihsan* (compassion).

The following table illustrates how each system can either reinforce a compliance-driven logic in the behavioural/managerial mode or become a site of knowledge creation and value-driven world-building in the epistemic *technē* mode. It also shows how leaders can actively balance the demands of metrics with the pursuit of educational meaning, transforming neutral platforms into spaces of holistic growth and cultural stewardship.

**Table 2: From Behavioural/Managerial Compliance to Epistemic *Technē* in Digital Leadership**

Platform	Behavioural / Managerial Mode (Compliance-driven)	Epistemic <i>Technē</i> Mode (Knowledge-building)	Systemic Impact
SPLKPM ( <i>Teacher Professional Development (PD)</i> )	<p>Focus on meeting annual PD hours (e.g., 42 hours) and uploading attendance records.</p> <p>Courses selected for ease of logging rather than relevance.</p> <p>No evidence of classroom application is linked.</p>	<p>PD records analysed to identify skill gaps.</p> <p>PD linked to school improvement priorities.</p> <p>Artefacts of practice (lesson plans, student work, reflections) uploaded alongside certificates.</p>	<p>From box-ticking PD log to living knowledge archive. SPLKPM potentially becomes a tool for strategic, evidence-based PD planning.</p>
E-RPH ( <i>Digital Lesson Planning</i> )	<p>Teachers copy-paste generic objectives and activities from past years.</p> <p>Leaders check only for completeness, not quality or innovation.</p>	<p>Leaders use E-RPH analytics to identify teaching strategy patterns.</p> <p>Departments co-design lesson plans in collaborative workshops.</p> <p>Post-lesson annotations added to record what worked and why.</p>	<p>From static archive to dynamic pedagogical memory. E-RPH potentially becomes a space for iterative lesson improvement.</p>

DELIMa (National Digital Learning Platform)	Focus on login rates and upload counts to meet Ministry KPIs.  Content mostly top-down and centrally approved.  Engagement quality is not tracked.	Leaders audit analytics to curate high-engagement, locally relevant content.  Students and teachers co-create resources.  Community partners contribute specialist modules.	From KPI machine to cultural and pedagogical commons. DELIMa potentially reflects both national and local knowledge.
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This reframing clarifies two essential insights. First, the platform itself is neutral; it is the epistemic stance of the leader that is decisive. Digital systems such as SPLKPM, E-RPH, and DELIMa do not inherently drive compliance or innovation as those trajectories emerge from the interpretive and curatorial choices made by leaders. The same platform that becomes a bureaucratic scoreboard in one school can, in another, function as a knowledge-building ecosystem. The difference lies not in the code or interface, but in the leader's capacity to determine what is worth revealing, what is worth concealing, and how the system's outputs are connected to the moral and pedagogical purposes of the institution.

Second, epistemic *technē* widens the field of vision in digital leadership. In the behavioural mode, visibility is limited to what satisfies reporting requirements such as attendance counts, submission logs, and compliance rates. This narrow framing risks reducing education to what can be quantified, thereby concealing the relational, cultural, and ethical dimensions of teaching and learning. By contrast, an epistemic stance surfaces qualitative and context-rich insights: how professional development transforms classroom practice, how lesson planning evolves to meet diverse student needs, and how digital resources embed local knowledge and cultural care. This shift is not simply additive; it fundamentally changes what leaders perceive as valuable, shaping long-term sustainability and fostering innovation that is rooted in context rather than imported in abstraction.

Leaders who embrace epistemic *technē* thus move from being custodians of digital procedure to architects of digital meaning. They are not merely ensuring that data is entered, and systems are updated; they are actively curating the realities that these systems bring into being. This is the decisive difference between functioning as a data clerk (a passive recorder of digital transactions) and acting as a knowledge builder, one who orchestrates digital infrastructures to reveal worlds aligned with Malaysia's moral and educational aspirations.

## Conclusion

This paper began with a simple yet profound thought: that digital leadership, as currently conceptualised, often prioritises function over meaning, systems over wisdom, and efficiency over reflection. What began as a managerial necessity in the digital age such as integrating tools, streamlining operations, and improving outcomes, has gradually evolved into a paradigm of leadership that risks losing sight of the very purpose of education. In its quest to optimise, digital leadership has too often failed to humanise.



By returning to the philosophical roots of *technē* as a mode of revealing, this paper has argued that digital leadership must be reframed as epistemic action which is a way of shaping the educational world not just through tools, but through truth. Leadership, from this view, is not merely about deploying platforms or analysing dashboards; it is about deciding what kind of reality should be brought forth, what values should be made visible, and what kind of futures we are willing to inhabit.

This reconceptualisation aligns deeply with Malaysia's MADANI vision, which aspires to develop a civilised, balanced, and values-driven society. Each of MADANI's six principles finds new depth when read through the lens of *technē*-based leadership:

M – *keMampanan* (Sustainability): Digital decisions must consider long-term educational ecology, not just short-term targets. Leaders must steward digital ecosystems that sustain human flourishing, not exhaust it through constant innovation cycles.

A – *kesejahteraan* (Well-being): Digital leadership must protect and promote student and teacher well-being, not merely track engagement metrics, but create conditions for authentic learning and relational care.

D – *Daya cipta* (Creating): True *technē* is poetic as it brings forth new realities. Leaders must be creative not just in tool use, but in reimagining what education could be in the digital age.

A – *hormat* (Respect): Technologies must be implemented with respect for human dignity. Leaders must ask whose voices are heard, whose are silenced, and how digital systems include or marginalise.

N – *keyakinan* (Trust): Epistemic leadership builds trust, not only in data, but in professional judgment, ethical reflection, and dialogical transparency with stakeholders.

I – *Ihsan* (Compassionate Excellence): At its heart, leadership must be exercised with *ihsan* which is doing the right thing, beautifully and justly. The most powerful technologies are those aligned with compassion.

Ultimately, digital leadership must be reclaimed not as a tool of surveillance or optimisation, but as a systemic and poetic engagement with education's possibilities. To lead digitally is not merely to adopt platforms or follow trends, but to decide what kind of truth we wish to bring forth in our schools, institutions, and futures. It is time we stop asking how to lead digitally, and begin asking what kind of educational world we are revealing through our leadership.

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## DIGITAL LEADERSHIP AMONG HEADS OF DEPARTMENTS AT INSTITUTE OF TEACHER EDUCATION

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**Abstract:** *The integration of digital technologies into educational frameworks necessitates a paradigm shift in leadership approaches, giving rise to the critical concept of digital leadership. This descriptive survey study investigated the state of digital leadership among Heads of Departments (HoDs) at an Institut Pendidikan Guru (IPG) campus in Malaysia. Data collected from all 14 HoDs via a structured questionnaire revealed a significant consensus on the importance of digital leadership, with overwhelmingly positive beliefs (Composite  $M=4.81/5.00$ ). However, a clear belief-practice gap was identified, as these strong beliefs were not fully realized in practice (Composite  $M=4.24/5.00$ ) due to significant systemic barriers. The most formidable challenges reported were inadequate time for digital upskilling ( $M=4.00$ ), insufficient technological infrastructure ( $M=3.57$ ), and staff resistance to change ( $M=3.57$ ). HoDs identified strategic interventions as crucial for improvement, most notably increased budget allocation for digital tools ( $M=4.64$ ), the development of a clear institutional digital policy ( $M=4.43$ ), and the provision of regular hands-on training ( $M=4.36$ ). The findings yield valuable insights for IPG and the Ministry of Education, providing an evidence-based foundation for developing targeted professional development, strategic policy initiatives, and rational resource allocation plans. Ultimately, this research underscores that empowering middle-level leaders requires addressing not just their competencies but also the critical institutional constraints of time, infrastructure, and support.*

*Keywords:* Digital Leadership, Heads of Departments, Institut Pendidikan Guru, Descriptive Study.

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### 1. Introduction

The global educational landscape is undergoing a profound transformation, driven by the relentless advancement of digital technologies. This shift necessitates a corresponding evolution in leadership within educational institutions, moving beyond traditional administrative roles toward a model of digital leadership. Digital leadership encompasses the strategic and operational use of technology to enhance teaching and learning, improve administrative efficiency, and foster a culture of innovation and continuous improvement. In the Malaysian context, the national education system has explicitly emphasized digital fluency and integration as cornerstone objectives, particularly within the Malaysia Education Blueprint (2013-2025). As the primary institutions responsible for preparing the nation's future educators, the Institut Pendidikan Guru (IPG) campuses bear a significant responsibility in modeling and embodying effective digital leadership.

Heads of Departments (HoDs) within this campus occupy a critically influential middle-leadership position. They act as the crucial nexus between institutional policy and classroom practice, translating broader digital transformation goals into actionable initiatives within their respective departments. Their beliefs, competencies, and actions directly impact the willingness and ability of academic staff to adopt and integrate technology. However, there

exists a discernible gap in the empirical literature regarding the specific realities of digital leadership at this level within IPG campuses. While the importance of digital leadership is widely acknowledged, a clear and detailed understanding of the current beliefs, prevalent practices, encountered challenges, and preferred strategies among HoDs is lacking.

Therefore, this study is conceived to address this knowledge gap. By conducting a systematic descriptive survey, this research aims to illuminate the current state of digital leadership among IPG HoDs. The findings will provide an evidence-based foundation for understanding the strengths to be leveraged and the areas requiring intervention, thereby offering critical insights for strategic planning and capacity building at both the institutional and national levels.

### **3. Literature Review**

The concept of digital leadership has emerged from the broader discourse on educational leadership and technology integration. Contemporary scholars argue that effective leadership in the digital age is not merely about technological proficiency but involves a fundamental shift in mindset and practice. Sheninger (2019) defines digital leadership as the strategic use of technology to improve outcomes and lead transformative change within schools. This involves creating a shared vision, providing access to appropriate tools, building capacity through professional learning, and fostering a culture that encourages risk-taking and innovation.

The role of middle leaders, such as Heads of Departments, is particularly salient in this process. Their position allows them to directly influence pedagogical practices and departmental culture. Research by Bennett (2018) suggests that departmental heads are pivotal in championing new initiatives, supporting colleagues, and allocating resources in ways that can either enable or hinder technological adoption. Their personal beliefs about technology's value are a significant predictor of its integration within their domains.

However, the path to effective digital leadership is often fraught with challenges. The literature consistently identifies several common barriers. These include resistance to change among staff, which can stem from a lack of confidence, perceived irrelevance, or fear of increased workload (Ertmer & Ottenbreit-Leftwich, 2010). Furthermore, inadequate technological infrastructure, such as unreliable internet connectivity or outdated hardware, presents a significant practical obstacle (Hew & Brush, 2007). A critical and recurrent challenge is the insufficiency of ongoing, relevant professional development that moves beyond basic technical training to focus on pedagogical integration and leadership strategies (Tourón et al., 2018).

While these challenges are global, their manifestation and intensity can be highly context-specific, influenced by local institutional policies, resource availability, and cultural factors. In Malaysia, studies on technology integration have often focused on classroom teachers or university lecturers, leaving the specific cohort of IPG HoDs relatively unexplored. This study will therefore contribute to filling this contextual and demographic gap in the existing body of knowledge.

This study aims to provide a comprehensive descriptive analysis of digital leadership among Heads of Departments (HoDs) by addressing the following primary research questions:

- 1) What are the beliefs of HoDs regarding the importance of digital leadership in their roles?
- 2) How do HoDs implement digital tools in their departmental management and leadership practices?

- 3) What are the principal challenges HoDs encounter in executing digital leadership?
- 4) What strategies do HoDs perceive as most effective for overcoming barriers and enhancing their digital leadership?

#### **4. Research Methodology**

This study utilized a quantitative, non-experimental research design employing a descriptive survey approach. This methodological framework was selected to systematically document and describe the current state of digital leadership among Heads of Departments (HoDs) at a specified Institut Pendidikan Guru (IPG) campus in Malaysia.

The research adopted a census sampling method, wherein the entire population of 20 HoDs was invited to participate. This approach ensured complete representation of the target population within the selected institutional context. Of the population, 14 HoDs completed the survey, yielding a response rate of 70%.

Data collection was conducted using a structured, self-administered questionnaire organized into six thematic sections: (A) demographic characteristics, (B) beliefs regarding digital leadership, (C) current digital practices, (D) perceived challenges, (E) implementation strategies, and (F) optional qualitative feedback. The instrument underwent rigorous validation by a panel of experts in educational technology and leadership to establish content and face validity. Internal consistency was verified through a pilot study, with all scaled sections demonstrating acceptable reliability coefficients (Cronbach's  $\alpha \geq 0.70$ ).

The survey was administered electronically via Google Forms following approval from the institutional ethics review board. Participants received a formal invitation outlining the study's purpose, along with assurances of confidentiality and voluntary participation. A follow-up reminder was disseminated after two weeks to enhance response rates. The data collection phase spanned four weeks.

Data analysis employed descriptive statistical techniques using SPSS software (Version 28). Responses were cleaned, coded, and analyzed to generate frequencies, percentages, and measures of central tendency (means). Results were synthesized into tabular and graphical formats to facilitate clear and comprehensive interpretation of the findings.

#### **5. Results**

This section presents a comprehensive analysis of the data collected from the 14 Heads of Departments (HoDs). The results are organized sequentially by the study's four research questions, utilizing descriptive statistics to elucidate the central tendencies, distributions, and prevailing patterns within the data. Each subsection begins with a narrative summary, followed by a supporting table and a concise explanation of the key results.

##### **5.1 Research Question 1: Beliefs about Digital Leadership**

The first research question sought to investigate the beliefs held by HoDs regarding the importance of digital leadership. The analysis reveals an overwhelming consensus and strongly positive attitudes among all respondents.

**Table 1: Descriptive Statistics for Beliefs about Digital Leadership (N=14)**

Statement	Strongly Agree	Agree	Mean	Std. Deviation
<b>B1. Crucial for departmental success.</b>	71.4% (10)	28.6% (4)	4.71	0.47
<b>B2. Improves teaching &amp; learning.</b>	85.7% (12)	14.3% (2)	4.86	0.36
<b>B3. Should model digital tools for staff.</b>	71.4% (10)	28.6% (4)	4.71	0.47
<b>B4. Enhances administrative efficiency.</b>	85.7% (12)	14.3% (2)	4.86	0.36
<b>B5. IPG should prioritize investment.</b>	92.9% (13)	7.1% (1)	4.93	0.27
<b>Composite Mean</b>			<b>4.81</b>	<b>0.19</b>

The data indicates an exceptionally high level of agreement among HoDs on all facets of digital leadership beliefs, with composite scores approaching the maximum value of 5. The notably high mean for belief in institutional prioritization (B5, M=4.93) and the absence of any neutral or negative responses underscore a unified and powerful conviction that digital transformation is not merely beneficial but essential for the institution's future. The low standard deviations further confirm that these views are held consistently across the cohort.

## 5.2 Research Question 2: Current Digital Practices

The second research question aimed to document the current digital leadership practices employed by the HoDs. The results indicate a high level of engagement, though a slight divergence from the near-perfect belief scores is evident.

**Table 2: Descriptive Statistics for Current Digital Practices (N=14)**

Practices	Always	Often	Sometimes	Rarely	Mean	Std. Deviation
<b>C1. Digital communication with staff.</b>	21.4% (3)	50.0% (7)	21.4% (3)	7.1% (1)	4.14	0.86
<b>C2. Encourage staff technology use.</b>	71.4% (10)	28.6% (4)	0% (0)	0% (0)	4.71	0.47
<b>C3. Data-driven decision-making.</b>	28.6% (4)	57.1% (8)	14.3% (2)	0% (0)	4.14	0.66
<b>C4. Participate/organize training.</b>	42.9% (6)	42.9% (6)	14.3% (2)	0% (0)	4.29	0.73

<b>C5. Promote digital innovation.</b>	35.7% (5)	50.0% (7)	14.3% (2)	0% (0)	4.21	0.70
<b>Composite Mean</b>					<b>4.24</b>	<b>0.40</b>

HoDs report frequently engaging in digital practices, with a composite mean of 4.24. The most prevalent practice is actively encouraging lecturers to use technology (C2, M=4.71), which aligns directly with their strong beliefs. However, the use of digital tools for routine communication (C1) shows more variability, and while data-driven decision-making (C3) is common (85.7% do it often/always), it is not yet a universal standard, suggesting an area for potential growth towards more analytical leadership approaches.

### 5.3 Research Question 3: Challenges in Digital Leadership

The third research question focused on identifying the principal challenges hindering effective digital leadership. The findings point to significant systemic and human resource barriers.

**Table 3: Descriptive Statistics for Perceived Challenges (N=14)**

Challenges	Major	Significant	Moderate	Slight	Not a	Mean	Std. Deviation
D1. Staff resistance to change.	21.4% (3)	35.7% (5)	42.9% (6)	0% (0)	0% (0)	3.57	0.85
D2. Lack of training.	7.1% (1)	42.9% (6)	50.0% (7)	0% (0)	0% (0)	3.50	0.65
D3. Inadequate infrastructure.	28.6% (4)	21.4% (3)	21.4% (3)	21.4% (3)	7.1% (1)	3.57	1.34
D4. Limited institutional support.	7.1% (1)	28.6% (4)	50.0% (7)	14.3% (2)	0% (0)	3.29	0.83
D5. Inadequate time.	28.6% (4)	50.0% (7)	21.4% (3)	0% (0)	0% (0)	<b>4.00</b>	0.78
<b>Composite Mean</b>						<b>3.59</b>	<b>0.69</b>

Inadequate time (D5) emerges as the single most formidable challenge (M=4.00), with 78.6% of HoDs rating it as a major or significant barrier. Staff resistance (D1) and insufficient infrastructure (D3) are also substantial hurdles, each with a mean of 3.57. The high standard deviation for infrastructure (SD=1.34) indicates considerable disparity in experiences among HoDs, suggesting that access to reliable technology is inconsistent across departments. These challenges collectively represent the critical impediments that mediate the transition from strong belief to optimal practice.

## 5.4 Research Question 4: Strategies for Improvement

The final research question explored the strategies HoDs perceive as most effective for enhancing their digital leadership. The responses indicate a clear desire for institutional-level intervention and support.

**Table 4: Descriptive Statistics for Perceived Effectiveness of Strategies (N=14)**

Strategies	Extremely Effective	Very Effective	Moderately Effective	Mean	Std. Deviation
E1. Regular hands-on training.	42.9% (6)	50.0% (7)	7.1% (1)	4.36	0.63
E2. Partnerships with tech experts.	42.9% (6)	42.9% (6)	14.3% (2)	4.29	0.73
<b>E3. Increasing budget allocation.</b>	<b>64.3% (9)</b>	<b>35.7% (5)</b>	<b>0% (0)</b>	<b>4.64</b>	0.50
E4. Recognizing innovation.	35.7% (5)	50.0% (7)	14.3% (2)	4.21	0.70
E5. Developing a clear policy.	50.0% (7)	42.9% (6)	7.1% (1)	4.43	0.65
<b>Composite Mean</b>				<b>4.39</b>	<b>0.44</b>

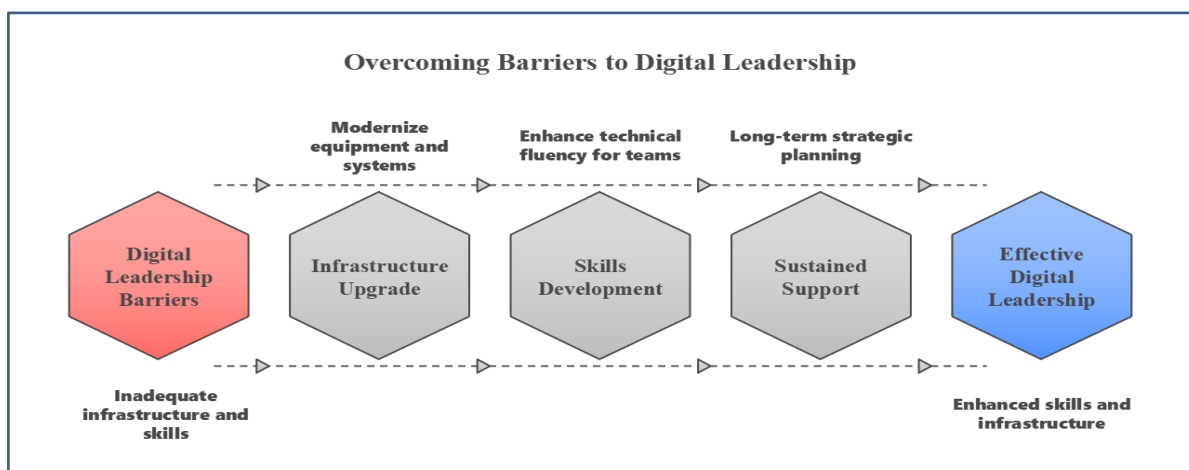
There is strong agreement on the effectiveness of all proposed strategies (Composite M=4.39). Increasing budget allocation (E3) is perceived as the most critical strategy, with a unanimous 100% of HoDs rating it as very or extremely effective (M=4.64). This directly addresses the challenges of inadequate infrastructure (D3). The high scores for developing a clear policy (E5, M=4.43) and providing training (E1, M=4.36) suggest that HoDs are seeking a clear institutional mandate and the corresponding capacity-building support to overcome barriers related to unclear direction and skill gaps.

## 5.5 Qualitative Feedback

The thematic analysis of the open-ended responses provided profound, context-rich insights that powerfully corroborate and elucidate the quantitative findings. The emergent themes articulate the human and systemic realities behind the statistical data, highlighting three critical barriers to digital leadership efficacy as in Figure 5:



Figure 5: Thematic Analysis from Open-Ended Questions



### 5.5.1 Pervasive Infrastructure Deficiencies as a Primary Barrier.

Respondents consistently identified inadequate technological infrastructure as a fundamental impediment to digital integration. One HoD explicitly stated, “*Infrastructure is the main hindrance to effective digitalisation.*” This sentiment was expanded upon with the observation that outdated equipment and sluggish systems actively erode staff morale, noting that “*Staff becomes demotivated when the system lags with out of date digital equipment.*” This theme directly quantifies the challenge measured in D3 (Insufficient technological infrastructure), giving a voice to the frustration behind the mean score of 3.57.

### 5.5.2 The Strategic-Execution Divide: A Technical Fluency Gap.

A significant theme that emerged was the disconnect between leadership vision and frontline execution. One response captured this dilemma succinctly: “*Leaders may have a clear vision, but teams often lack the technical fluency to execute it.*” This insight reveals that the challenge extends beyond mere access to tools; it encompasses a critical skills gap at the operational level. This theme provides qualitative depth to the quantitative challenges of staff resistance (D1) and lack of training (D2), suggesting that resistance may stem from a lack of confidence and competence rather than outright opposition to change.

### 5.5.3 An Imperative for Systemic and Sustained Support.

The responses unanimously called for more robust, systemic institutional support mechanisms. The need moved beyond simple training requests to a demand for “*better training and resources to support effective and sustainable use of technology.*” The use of the word “sustainable” is particularly telling, indicating a desire for long-term strategic planning rather than ad-hoc solutions. This theme powerfully reinforces the quantitative results for RQ4, validating why strategies like increased budgeting (E3) and clear policy frameworks (E5) were deemed extremely effective, as they are seen as prerequisites for meaningful and lasting change.

## 6. Discussion

This study reveals a critical paradox: Heads of Departments (HoDs) are unified in their strong belief in digital leadership's value yet are significantly constrained by systemic barriers,

creating a pronounced belief-practice gap. The findings align with yet extend contemporary international research on digital leadership in teacher education by identifying specific mechanisms through which systemic factors mediate leadership effectiveness in the Malaysian context.

### **6.1 The Belief-Practice Gap: From Enthusiasm to Execution**

The overwhelmingly positive beliefs held by HoDs (Composite  $M=4.81$ ) are consistent with global studies that position digital leadership as fundamental to modern education (Sheninger, 2019; El-Masri & Tarhini, 2021). Like their counterparts in international teacher training institutions (Prestridge, 2019), Malaysian HoDs recognize technology's transformative potential. However, the observed practice gap (Composite  $M=4.24$ ) mirrors patterns found in both Global North and South contexts where vision exceeds implementation capacity

(Adedoyin & Soykan, 2023). Specifically, the limited engagement with data-driven decision-making (C3) reflects a common challenge identified in recent studies—where leadership digital literacy often emphasizes basic operational competence over analytical capabilities (Van der Spoel et al., 2020; Pettersson, 2021). This finding suggests that the belief-practice gap represents not merely technical constraints but a strategic development need in evidence-based digital leadership.

### **6.2 Systemic Barriers: The Interplay of Structural and Cultural Constraints**

The identified challenges reveal how systemic factors create leadership constraints that echo international patterns while exhibiting context-specific manifestations. The paramount barrier of inadequate time (D5,  $M=4.00$ ) reflects a global phenomenon where educational leaders face expanding responsibilities without corresponding resource allocation (DeCoito & Estaiteyeh, 2022; Kaba & Ozer, 2022). Like school leaders in international contexts, IPG HoDs struggle to integrate digital leadership into existing workloads.

The co-occurrence of infrastructure deficits (D3) and staff resistance (D1) demonstrates how first-order barriers (resource constraints) exacerbate second-order barriers (cultural resistance), a dynamic observed across educational systems in developing economies (Adedoyin & Soykan, 2023; Almazova et al., 2020). The qualitative finding that outdated equipment demoralizes staff parallels experiences in various international educational contexts where inadequate technology undermines digital adoption efforts (Pettersson, 2021). However, the Malaysian context shows a distinctive pattern: resistance stems not only from individual reluctance but from rational responses to unreliable technological systems. This finding extends the theoretical framework of Ertmer and Ottenbreit-Leftwich (2010) by showing how resource constraints can become cultural barriers in specific institutional contexts.

### **6.3 Strategic Imperatives: Comparative Insights for Institutional Support**

The proposed strategies reflect both universal needs and context-specific priorities observed in international educational development. The demand for budget allocation (E3,  $M=4.64$ ) mirrors funding patterns identified as critical for digital transformation in educational institutions (UNESCO, 2021; El-Masri & Tarhini, 2021). Like their international counterparts, Malaysian HoDs recognize that sustained investment precedes effective integration.

The emphasis on policy framework development (E5, M=4.43) aligns with recent research from European higher education institutions where strategic clarity has proven essential for digital leadership effectiveness (Van der Spoel et al., 2020). However, the Malaysian focus on policy as an empowerment tool rather than merely a compliance mechanism offers a nuanced understanding of how institutional support functions in developing contexts.

The request for hands-on training (E1, M=4.36) reflects a global consensus on the importance of professional development, but with a distinctive emphasis on practical application over theoretical knowledge. This practice-oriented approach mirrors successful models in teacher education institutions where experiential learning has driven digital leadership development (Prestridge, 2019; DeCoito & Estaiteyeh, 2022).

#### **6.4 Conclusion of Discussion**

The study demonstrates that IPG HoDs face challenges that both align with and diverge from international patterns. While the belief-practice gap mirrors global trends, the specific interplay of time constraints, infrastructure limitations, and culturally-embedded resistance creates a distinctive leadership environment. The solutions proposed strategic funding, policy empowerment, and practical training, offering a framework that addresses both universal principles of digital leadership development and context-specific needs. These findings contribute to the international literature by illustrating how digital leadership models require both adherence to global best practices and adaptation to local institutional realities, particularly in post-pandemic educational contexts where digital leadership has become increasingly crucial (Adedoyin & Soykan, 2023; Kaba & Ozer, 2022).

#### **7. Conclusion**

This study set out to map the landscape of digital leadership among Heads of Departments at the IPG campus, and the results paint a picture of motivated leaders navigating a complex terrain of opportunity and constraint. The investigation reveals a powerful consensus: HoDs possess an overwhelmingly positive belief in the transformative potential of digital leadership for teaching, learning, and administration. They are not reluctant pioneers but willing champions of change, actively engaging in practices to encourage technology use and promote innovation within their departments.

However, this strong belief is mediated by a stark reality. A significant "belief-practice" gap exists, stemming not from a lack of vision but from formidable systemic barriers. HoDs find themselves constrained by a triad of challenges: a critical lack of time to dedicate to digital initiatives, inadequate technological infrastructure that stifles motivation, and a technical fluency gap among staff that manifests as resistance to change. These findings shift the focus from individual competency to institutional responsibility, highlighting that the primary impediments are organizational and resource-based.

The path forward, as clearly articulated by the HoDs themselves, is one of structured institutional empowerment. The proposed solutions are pragmatic and direct: strategic investment in infrastructure, the implementation of sustained and practical training programs, and the establishment of a clear digital policy framework. These recommendations form a coherent action plan for IPG leadership to transform digital leadership from an individual aspiration into an institutional reality.

In conclusion, the HoDs at this campus are a potent, untapped resource for driving digital transformation. They hold the vision and the will; the challenge for the institution is to provide the tools, the time, and the strategic direction necessary for them to succeed. By heeding the insights from this study, IPG can empower its middle leaders to effectively bridge the digital divide, thereby enhancing not only departmental management but also strengthening the entire teacher education pipeline to meet the demands of 21st-century Malaysia. The journey towards a digitally fluent educational culture is a collective one, and it begins with investing in those at the forefront of change.

## **8. Implications for Practice**

The findings of this study translate into several actionable recommendations for institutional policymakers and academic leaders at IPG. To bridge the identified gap between digital leadership beliefs and practices, the following strategic interventions are proposed:

### **8.1 Strategic Investment in Technological Infrastructure.**

The study identifies inadequate infrastructure as a critical demotivator and barrier. Therefore, the foremost implication is the urgent need for strategic capital investment. Institutional leadership must prioritize budgetary allocation to systematically upgrade outdated hardware, enhance network reliability, and procure current software. This action is non-negotiable, as a robust digital ecosystem forms the foundational bedrock upon which all other digital leadership efforts depend. Without addressing this primary barrier, initiatives in training and policy are likely to yield diminished returns.

### **8.2 Systemic Capacity Building through Targeted Professional Development.**

Addressing the challenges of time constraints and the technical fluency gap requires a systemic approach to human resource development. The institution should institute a mandatory, continuous, and practical professional development program focused on digital pedagogy, data-driven decision-making, and change management for both HoDs and their academic staff. Crucially, this must be coupled with an operational review of HoDs' workloads. Formal allocation of dedicated time for digital leadership activities such as mentoring staff, exploring new technologies, and analyzing data is essential to transform digital leadership from an abstract responsibility into an actionable priority.

## **9. Limitations and Future Research**

While this study offers valuable insights into digital leadership among HoDs, its findings must be interpreted considering its limitations. The primary constraint is the confinement of the sample to a single IPG campus. While this allowed for a deep, contextual analysis, it inherently limits the generalizability (external validity) of the results to the broader population of IPG campuses across Malaysia, which may have varying resources, cultures, and challenges.

Furthermore, the quantitative descriptive design, while effective for identifying what beliefs, practices, and challenges exist, does not elucidate the underlying why or how. The data points to significant issues like staff resistance and time constraints but cannot explore the complex social, cultural, and institutional dynamics that cause them.

To address these limitations and build upon this research, several avenues for future study are proposed:

- 1) **Expanded Quantitative Analysis:** A crucial next step is a large-scale, multi-campus study replicating this survey across numerous IPG institutions. This would allow for comparative analyses to determine if the challenges and beliefs identified here are consistent nationwide or if they vary significantly by region (e.g., urban vs. rural), campus size, or institutional focus.
- 2) **In-Depth Qualitative Inquiry:** A mixed-methods approach is strongly recommended. Future research should employ qualitative methodologies, such as in-depth phenomenological interviews or focus group discussions with HoDs and their staff. This is essential for uncovering the nuanced experiences, perceptions, and contextual stories behind the statistics, particularly regarding the roots of staff resistance, the practical realities of implementing strategies, and the lived experience of navigating institutional policies.
- 3) **Interventional and Longitudinal Studies:** To move from diagnosis to solution, future research could design and evaluate specific interventions based on this study's implications. For instance, a study could assess the impact of a newly implemented professional development program on HoDs' digital leadership efficacy. A longitudinal design would be particularly valuable in tracking the evolution of digital leadership practices and the long-term effectiveness of strategic initiatives over time.

By pursuing these directions, subsequent research can validate these initial findings, explore their deeper complexities, and ultimately contribute to the development of more nuanced and effective models of digital leadership in teacher education.

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# INTEGRATION OF ARTIFICIAL INTELLIGENCE (AI) IN THE TEACHING AND LEARNING OF ISLAMIC EDUCATION IN UGANDA

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**Abstract:** *Artificial Intelligence (AI) has swept across the world like a wild storm, impacting nearly all sectors, including education. The integration of AI in teaching and learning has now become inevitable. Therefore, Islamic education teaching and learning can no longer avoid integrating AI elements into its preparation, instruction, research, and assessment approaches. This study examines the current trends in AI, which can be exhaustively utilized to facilitate the teaching and learning of Islamic education. The study employs a qualitative approach, including interviews with learners and instructors. The data is thematically analyzed using an interpretive paradigm. The research identifies key AI features and tools that can be used in the instruction of Islamic education by both teachers and learners. The study also identifies significant impediments to the appropriate utilization of AI tools in the teaching-learning process of Islamic education in a developing country like Uganda, such as limited infrastructure. This study offers actionable insights for policymakers, educators, and technology developers, contributing to the discourse on AI as a driver of innovation in Islamic education pedagogy in developing countries, such as Uganda. AI can help to generate Instructional materials such as multimedia graphics, videos, and learning simulations. Educational planners of Islamic institutes should establish a minimum infrastructure to support the integration of AI in the teaching and learning of Islamic education. Integration of AI should never replace the role of the teacher in the classroom environment*

*Keywords: Artificial Intelligence (AI), Innovation, Islamic education, Educational Technology*

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## 1. Introduction

The world has appreciated the emergence of artificial intelligence (AI) and its usage in almost all sectors. It is quite evident that AI is here to stay; therefore, every sector and department must map out strategies for integrating AI into their respective operations. Meanwhile, the education community, including teachers and learners, is still grappling with the emergence of AI and struggling to appreciate the possibility of integrating AI in teaching and learning. Meanwhile, Rifah et al. (2024) suggest that AI can be integrated into the teaching and learning process of Islamic education.

This, therefore, implies that Islamic education is no exception. The teaching and learning of Islamic education cannot ignore the emerging trends in AI; otherwise, both teachers and learners would be left behind. Additionally, AI has the potential to revolutionize the teaching and learning processes in Islamic schools in Uganda. AI is an essential part of Information and Communication Technologies (ICT). Numerous studies have already suggested integrating ICT components into the teaching and learning of Islamic education. Gyagenda (2021) denotes that ICT integration in Islamic education enhances both the teaching and learning experience. However, although AI is inevitable in this era, Uganda, as a developing country, faces numerous challenges, threats, and significant opportunities in the process of integrating AI into the teaching and learning of Islamic education. These challenges may include inadequate

infrastructure for information and communication technologies, as well as mindset issues among stakeholders.

Recent studies outlined by Rifah et al. (2024), Salim and Aditya (2025), and Pratama and Muhammad (2025) identify infrastructural limitations, attitude, and cultural sensitivities as some of the barriers to integrating AI-based tools in the instruction of Islamic education. Moreover, Gyagenda (2023) contextualized infrastructural limitations and a negative attitude towards the Ugandan perspective on Islamic education.

In addition, chatbots and other AI applications, such as DeepSeek, ChatGPT, and others, lack contextual analysis capacity, which can only be made by a human teacher. Reviewing selected questions in relation to the Ugandan context, AbdulRahman and Walusimbi (2024) concluded that whereas ChatGPT can offer basic guidance on marriage, divorce, and inheritance, it had significant contextual errors that can only be addressed by a human agent. Additionally, it is important to note that the Muslim community makes up a minority of the population, as Uganda is mainly a Christian country. This means that any efforts to restore Islamic institutions could encounter major political and financial hurdles.

Moreover, the Ugandan Muslim community faces numerous challenges rooted in its minority status. These challenges include limited representation in the public services sector, associations with terrorism, Islamophobia, and other forms of marginalization. These challenges can be addressed through an up-to-date education system that values the integration of modern technologies and tackles contemporary global issues.

To address these issues, we must acknowledge the current trends in technology, especially the rapid spread of Artificial Intelligence, which has taken over the world like a desert storm. Therefore, Islamic education needs to explore the opportunities that arise from this trend while also studying and mitigating potential threats associated with the use of AI and other language-based models. If policymakers and implementers do not address these issues promptly, students and teachers of Islamic education may misuse AI or abandon it altogether, missing out on the benefits it offers.

## **2. Problem Statement**

The teaching and learning of Islamic education in Uganda still face significant challenges, for instance, an over-reliance on traditional pedagogical methods that may not enable learners to apply the acquired knowledge into skills that are beneficial to their societies.

While many argue that artificial intelligence poses a threat to the survival of various professions, including teaching, it can also be perceived as a relevant tool to aid and enhance the teaching and learning processes. Meanwhile, Islamic education has its unique characteristics and peculiarities, such as traditional approaches to teaching and learning. Yet the opportunities associated with the integration of AI in improving the instruction of Islamic education remain underexplored (Hanifaa & As'ad, 2025). The most obvious question, therefore, remains: how can Artificial Intelligence be effectively incorporated into the teaching-learning process of Islamic education to enhance instruction effectiveness?

Recent studies, such as those by Pratama and Muhammad (2025), Salim and Aditya (2025), and Rifah et al. (2024), highlight the potential applications of AI in Islamic education, including



learner-centered instruction and flexibility. And despite identifying challenges like infrastructural limitations, they still have methodological gaps and lack contextual relevance. This study addresses these issues by incorporating a scientific qualitative approach to library research, as used in these studies, and by contextualizing it within an African third country, Uganda.

### **Objectives**

The following specific research objectives guided the study;

- To examine methods of applying artificial intelligence in the teaching and learning of Islamic education
- To identify challenges associated with the integration of Artificial Intelligence in the teaching and learning of Islamic education and to suggest possible solutions.

### **Questions**

The study was guided by the following research questions;

- i. How can AI be used to enhance the teaching and learning of Islamic education in Uganda?
- ii. What are the potential threats and challenges for using AI, and what are the possible remedies to such threats?

## **3. Literature Review**

### **Emerging Trends, Opportunities, and Prospects of AI in Islamic Education**

AI research Assistant tools can be used to teach and learn Islam. This could be achieved through analysis and translation of classical Islamic texts on theology, philosophy, and Islamic jurisprudence, among others. Works of scholars such as Al-Ghazali, Ibn Sina, Ibn Rushd, Al-Kindi, and many more could be simplified and made readily available for learners and teachers through assistive AI tools.

Artificial intelligence can be used in conducting research by both teachers and learners. AI provides access to improved teaching and learning resources in Islamic education (Faizudin et al., 2025). Teachers can use artificial intelligence to generate learning materials, such as organizing notes and tasks for learners, and brainstorming ideas needed for lessons. Artificial Intelligence can also be used to create audio-visual aids, graphics, quizzes, and puzzles to enhance the teaching and learning of Islamic education.

Simulations through virtual reality could help learners better grasp Islamic historical events through AI-generated models that combine graphics, audio, and visual still and motion pictures. In addition, the same could be used in the instruction of Islamic education to teach rituals such as pilgrimage and taking virtual tours around the Islamic holy sites. Rif'ah et al. (2024) identify virtual mentors, voice assistants and provide updated reading material in real time while interacting with learners in the teaching learning process of Islamic education.

Additionally, learners may use Artificial Intelligence to conduct research, complete tasks and assignments, and for personalized reading. Khoirunnisa et al. (2023) argue that AI can be used to translate classical Islamic texts into various international languages, making it easier for a broader audience that might otherwise struggle to access these works in their native languages. Without clear guidelines and infrastructure in Uganda, it might be difficult to implement the integration of AI in the teaching and learning of Islamic education.

## Challenges, Threats, and Ethical Considerations

Whereas AI usage may revolutionize the teaching and learning of Islamic education, there are significant threats and ethical considerations that I have identified in this section.

AI may reduce teacher-learner interactions and impede other classroom interactions in the teaching and learning of Islamic education (Faizudin et al., 2025). Over-reliance on AI may threaten traditional human interactions and other teaching-learning dynamics in a classroom setting. In Islamic education, certain nuanced core areas require human solutions, explanations, and instruction from scholars, which AI must not replace. In addition, the general Muslim population may resort to seeking technical Islamic rulings from AI; however, these models may not fully understand the contextual issues, relying instead on programmed languages and online resources.

Since AI models are still under development, they may misinform both the learners and the teachers. AI may not differentiate properly between the unorthodox, extremist, and heretic views in Islam, thereby misleading the learners.

AI might be culturally insensitive and may not appreciate divergent views from the diverse schools of thought and sects unless clearly instructed. The Algorithm may not be in a position to address the various strands and sects, such as the Sunni, Shia, or Sufi perspectives on Islamic issues, unless AI is deeply prompted, which also requires specialized knowledge that most users may not have acquired.

Limited ICT infrastructure in Islamic schools in Uganda. Although AI is the way forward, Islamic institutes in Uganda may lack sufficient infrastructure, including computers, network connectivity, electricity, and technical support on how to effectively utilize AI in the teaching and learning process. Gyagenda (2024) reported that Islamic institutes in Uganda lacked basic infrastructure to facilitate learning, with outdated ICT facilities in poor condition and dilapidated classroom blocks. With such inadequacies, it becomes difficult to implement the application of AI in the teaching and learning of Islam.

Since AI is still being studied and developed, it doesn't have a clear educational framework and roadmap (Yang & Bai, 2019). While AI may have isolated educational tools, it still lacks a clear guideline, framework, and a specific educational platform to handle teachers' and learners' queries. Nafea (2018) proposes a comprehensive AI framework that provides an integrated platform to facilitate teaching and learning for both teachers and learners. Generally, education in Uganda lacks a clear AI policy and framework, and specifically, Islamic education, leaving contextual, empirical, and theoretical gaps.

Islamic institutes still face significant challenges associated with manpower. The teachers of Islamic education in Uganda lack sufficient basic ICT skills to help them fully navigate the advancement of AI features (Gyagenda, 2024). Moreover, the attitude of the Islamic education teachers towards the integration of technology in the teaching and learning process is still negative.

Moreover, there is also a negative mindset and attitude towards teaching and learning with the help of Artificial Intelligence. This attitude stems from the fear of being replaced by AI and

the possibility of AI polluting the Islamic literature with strange ideas that might threaten the orthodox Sunni Islamic views.

#### **4. Research Methodology**

This study employed a qualitative research design based on the interpretivist paradigm, which is particularly suitable for exploratory research aimed at understanding complex social and educational phenomena from the perspectives of those directly involved (Creswell & Poth, 2018). The interpretivist approach was selected to enable a detailed, context-aware exploration of how stakeholders in Islamic education perceive and experience curriculum implementation and reform within Uganda's madrasah institutions.

Data collection involved multiple sources to ensure depth and triangulation. Semi-structured interviews were conducted with ten key informants, including teachers, administrators, learners, policymakers, and curriculum specialists. The selection criteria were purposive, and the sample size was reached after data saturation. In addition to interviews, relevant institutional documents such as syllabi, teaching plans, and assessment tools were reviewed to contextualize the reported practices and align them with stated curricular goals.

The collected data were analyzed using thematic analysis, following the six-step framework. Interview transcripts, field notes, and documentary data were first coded inductively, allowing themes to emerge naturally from the data. Codes were then grouped into clusters of related meanings, which formed the basis for broader themes concerning curriculum design, pedagogical practices, reform perspectives, and institutional challenges (Creswell, 2007).

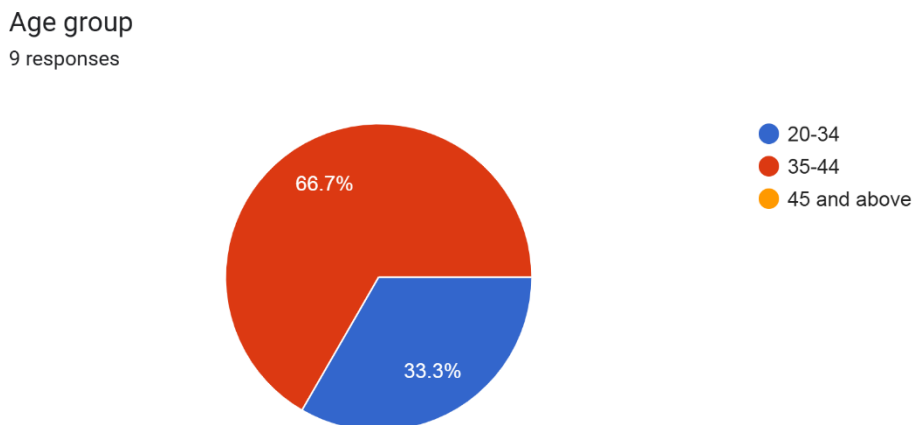
To enrich the findings and position them within a broader academic discourse, the study also incorporated a comprehensive review of relevant scholarly literature. This included empirical and theoretical works on Islamic education curricula, curriculum implementation frameworks, and reform debates from Uganda and comparable contexts. Theoretical insights were drawn from both classical Islamic educational philosophy and modern curriculum studies, facilitating a balanced analytical approach.

This multi-pronged methodology enabled the researcher to capture diverse stakeholder perspectives and critically examine the alignment—or lack thereof—between curriculum intentions, implementation strategies, and educational outcomes in Uganda's madrasah system.

#### **5. Results**

In this section, a discussion of the findings is presented in line with the study's objectives. Participant demographics are presented first, then emerging trends and opportunities, followed by challenges and threats of Artificial Intelligence in teaching and learning of Islamic education.

Figure 1 shows the age brackets of the respondents who participated in the study. From the pie chart, 66.7% of the participants were between the ages of 35-44, while 33.3% of the participants were between the ages of 20-34. This implies that a fair distribution of age groups represents consistency with the aims of the study, in such a way that both learners and educators of Islamic education fairly participated in the study, giving more informative and enriching responses to the study.

**Figure 1: Age Brackets of Respondents****Table 1: Categories of Participants**

Category	Frequency	Percentage
Islam student	1	11.1
Islam teachers	2	22.2
ICT experts	3	33.3
Educationists	6	66.7
<b>Total</b>	<b>12</b>	<b>100</b>

*Source: original field data (2025)*

From Table 1, participants included at least one Islamic student, two Islamic teachers, 3 ICT experts, and six educationists. Some educationists served as both educationists and Islamic teachers, while others were both educationists and ICT experts. This indicates that the purposive selection of participants enriched the study with detailed insights and informed responses about the area of investigation.

### **Emerging Trends and Opportunities of AI in Islamic Education**

This section addresses the first research question: How can AI be used to enhance the teaching and learning of Islamic education in Uganda? The respondents highlight important issues related to this. For example, using AI in lesson preparation, instructional materials, research, virtual simulations, assessment, and evaluation.

Hafiz, an IT expert and educationist, identifies major areas where AI can be integrated into Islamic education, such as lesson preparation, content creation, assessment, and evaluation, through natural language processing. He says:

Lesson Preparation Content Generation: AI tools can help teachers create lesson plans, summaries, and explanations of Qur'anic verses, Hadith, and Fiqh in age-appropriate language. Translation & Tafsir Support: AI-powered translation tools can simplify Arabic texts for non-Arabic speakers and suggest relevant tafasir (commentaries). Resource Curation: AI can recommend authentic Islamic texts, videos, and scholarly works for a specific topic. Teaching-Learning Process Virtual Tutors: AI chatbots can act as assistants to answer students' questions on Islamic teachings instantly, providing references to the Qur'an and Hadith. Interactive Learning: AI-based apps can gamify memorization of Qur'an verses (Hifz), Hadith, and Arabic vocabulary. Personalized Learning: AI can track each student's progress (e.g., memorization accuracy, recitation Tajweed) and provide tailored feedback. Assessment Automated Quizzes: AI can generate multiple-choice, short-answer, or essay questions on Qur'anic verses, Hadith, and Islamic principles. Recitation Assessment: AI voice recognition can assess student Qur'an recitation and provide corrections on tajweed rules. Essay Evaluation: Natural Language Processing (NLP) can help mark reflective essays on Islamic ethics, comparing answers to established principles.

This submission clearly shows that various AI tools can be used in teaching Islamic education. For example, virtual tutors like AI chatbots, AI games, and natural language processing (NLP) can assist with Qur'an memorization, speech improvement, Arabic language mastery, and understanding Islamic concepts through quizzes and automated feedback.

Additionally, Musa argues that despite generational gaps, AI can be used to enhance the teaching and learning of Islamic education in multiple ways. He says:

There is no doubt that all means will be integrated into the teaching-learning process of Islam. Whether it threatens the traditional approach is another issue. This may be downplayed by generational dynamics. AI can be used in the Design, development, access editing, and analysis of teaching material.

In addition, according to Rafa, an Islamic education instructor, AI can be used in the instruction of Islamic education by helping learners to complete projects and helping teachers to identify appropriate teaching methods. He says:

It can be used in unpacking the Learning outcomes for particular Competencies, during the preparation of Learning activities, while guiding learners in project work, during the relationship of different verses of the Quran and hadiths to particular topics, choosing the best teaching method, techniques, and other practical practices in teaching the learning process of the Digital and 21st century

Moreover, Hafiz identifies further strategies such as resource compilation, lesson structuring, and Language assistance for incorporating AI elements in teaching and learning. He states:

Resource Compilation: AI can help teachers collect authentic sources (Qur'anic verses, hadith, tafasir) quickly, but scholars/teachers remain the interpreters. Lesson Structuring: AI tools can suggest outlines, slides, or quizzes, while the Ustadh (teacher) adapts them to ensure alignment with Islamic pedagogy and values. Language Assistance: AI translations can make classical texts accessible, but the teacher provides the contextual and spiritual meaning.

Furthermore, Hassan, who is an IT expert and an educationist, identifies AI elements that can be integrated into the teaching and learning of Islamic education. He says:

Through personalized learning. Through Islamic Content Creation. Through Automatic Assessment. Creating Rubrics for Islamic-based content. Through real-time feedback and interactions. Personalized learning, Virtual Quranic Tutor, AI-based Quran Translation, Virtual Reality and Augmented Reality based on Islamic Principles and Values, Islamic-based Chatbots powered by AI.

Musa says advanced AI tools can be used to enhance research in Islamic studies. He says:

AI can significantly improve research in Islamic studies by providing advanced tools for text analysis, thematic classification, and the development of digital commentaries. AI-powered applications can facilitate access to Islamic knowledge, promote personalized learning, and enhance the accuracy of Islamic analysis.

In addition, Rafa says:

The Topic to be chosen according to the researcher, as the problem statement is connoted AI can be involved to figure out the real needs assessment of the particular area, choosing data presentation. While framing the research tools and the particular sample space to be considered, Possible recommendations are proposed for implementing the findings. Advisory notices for the community after researching. finding the easiest way to publish the researched work. Coming up with real-time and relevant research proposals for social structural development, hence making the subject relevant.

Hafiz identifies digital text mining and semantic search engines in enhancing research of Islamic education, he says:

Digital Text Mining: AI can process vast collections of Qur'an, Hadith, Tafsir, and Fiqh texts, making it easier for researchers to find relevant verses, narrations, or legal rulings. Semantic Search Engines: Instead of keyword-only searches, AI can enable meaning-based retrieval (e.g., finding all hadiths related to patience, even if the wording differs).

He add:

Advanced Qur'an & Hadith Search Engines: New NLP models can understand meanings, not just keywords, allowing semantic searches across tafsir, fiqh, and hadith collections. Contextual Translation: AI now produces more accurate Qur'an and Hadith translations, preserving nuance while making texts accessible to non-Arabic speakers. Speech-to-Text for Arabic: Voice-enabled learning tools can transcribe Qur'an recitation or Islamic lectures in real-time for study and accessibility.

While AI might not grasp the local contexts of various communities worldwide, it can generally be used to address contemporary Islamic issues not covered in traditional Islamic texts (Pratama & Muhammad, 2025). This suggests that as AI language models are used, they are continuously developed and trained to keep up with current civilizational trends.

Based on these experiences, it is clear that AI tools can enhance the teaching and learning of Islamic education. This can be done through NLP models, simulations, semantic search

engines, virtual Qur'an tutors, augmented reality, virtual reality, Islamic content creation, and Islamic text processing. Additionally, gamification and the development of online quizzes and puzzles related to Islamic content like the Qur'an and Sunnah can help students develop critical thinking and problem-solving skills.

### **Challenges and Threats of Integrating AI into the Instruction of Islamic Education**

This section addresses the second research question: What are the potential threats and challenges of using AI, and what are the possible solutions to these threats? Participants highlight issues such as AI-generated out-of-context material, which can threaten human interaction by replacing teachers, infrastructural limitations, and other concerns.

Hassan highlights challenges and threats related to using AI in Islamic education. He mentions problems such as infrastructural needs, practitioners' attitudes, ineffective policies, and more. He states:

Technology aspect-Many institutions lack/ have inadequate tools to be used in teaching. Policy issues/Curriculum: Many of the institutions are still using traditional kinds of curricula to teach, whereby AI is not incorporated into their teaching. Technical Experts: There are a few technical experts who are well-equipped with the knowledge of AI integration in teaching Islam. Rigidity: Most of the Islamic Teachers who are not technology-oriented tend to avoid technology in teaching. The main threat of associating AI in teaching -learning process of Islam is that AI tends to make people lose their mental capability in reasoning, given AI can handle very thing them them in the shortest time possible.

Musa points out ethical dilemmas associated with artificial intelligence, especially during the machine learning process. He argues for contextual relevance while dealing with artificial intelligence in teaching and learning. He says:

In higher education, the integration of artificial intelligence (AI) systems presents profound ethical dilemmas, especially in ensuring that machine learning-driven decision-making processes are fair, transparent, and aligned with human values. Furthermore, the diversity of cultural values across contexts necessitates nuanced consideration to prevent AI systems from being developed based on assumed universal norms that may not be relevant to specific educational settings. To address these challenges, educators and developers must prioritize contextual relevance, equity, and transparency in AI system design and implementation, ultimately fostering a more inclusive and responsible use of AI in higher education.

This implies that AI may not pay attention to cultural sensitivities and peculiarities. The application and interpretation of Islam take into consideration the cultural contexts, which may not be easy for AI to detect. Salim & Aditya (2025) identified cultural sensitivity as one of the major barriers for AI to flourish in the teaching-learning environment of Islamic education. In a multi-cultural setting such as Uganda, which is also a developing country, the issue of context becomes more sensitive. In addition, Hafiz identifies over-reliance on machines, misinformation, and bias in data training, which might threaten traditional scholarship. He states:

Misinformation Risks: AI models might generate content that is inaccurate, fabricated, or based on weak sources (da‘if hadith or unauthenticated interpretations). This risks misguiding learners if not cross-checked by scholars. Bias in Training Data: If AI is trained on non-authentic or biased datasets, it could misrepresent Islamic teachings. For example, sectarian perspectives might dominate, leading to distorted or partial explanations. Over-Reliance on Machines: Students may take AI answers as the absolute truth without seeking scholarly verification, weakening traditional scholarship and Ijma‘ (consensus).

This implies that AI has the potential to contaminate the message of Islam if not carefully trained. It may not understand the intention of the user and the developer. Khoirunisa et al (2023) opine that AI is capable of spreading negative values contrary to the orthodox teachings of Islam.

In addition, Rafa argues that Artificial Intelligence in the teaching and learning of Islam may promote laziness. He says:

This can lead to compromising the integrity of the learners and facilitators, and Laziness among both the facilitator and the learner. Being expensive as data or wifi is a requirement that may hinder the swiftness in the process. AI compromises the role of the facilitator since everything is already done by AI. Wrong concepts that compromise the purity of Islam and correct Aqeedah might be infiltrated into the content. Since Facilitators are the most ignorant if the method, they may bore some learners who may have already been exposed to information that is being dwelt on by the facilitator. Salary disparities among the educationists may affect the prioritization of the method.

However, Rafa believes that if the teachers of Islamic education can scrutinize AI, integrity issues and other dangers associated with using AI in teaching and learning could be averted. He says:

The facilitator should first interact with AI and compare with the traditional approach before encouraging learners to research using AI. The facilitator should be in position to scrutinize and sensor the content when presented. The correct message and thorough on the topic should be with the facilitator. The traditional sources of information that's the Quran and Hadith should not be compromised and those recommended by the four Traditional Imams. Consideration should be taken that Islam has its traditional enemies from within and without since time immemorial so this should not be taken for granted as there is need for protecting it's purity.

In addition, Hassan says:

AI can be integrated into teaching Islam by understanding the ethical principles involved in the utilization of AI. AI content that is to be used for teaching should be censored. Sensitization programs should be carried out such that people become aware of the pros and cons of AI in regards to their professions.

While AI is increasingly becoming an integral aspect of teaching and learning, it also poses significant threats, including integrity concerns, compromising the roles of a facilitator, extended screen time for the learners, complicating assessment and evaluation, misinformation,



and contextual lapses. For a developing country like Uganda, these issues must be addressed to enable effective integration of AI in the teaching and learning of Islamic education.

## 6. Discussion and Conclusion

The first step in dealing with AI is to accept that learners and teachers are using it, and that policymakers, teachers, and key stakeholders must be prepared to handle the situation proactively. This can be achieved by recognizing the useful AI elements relevant to teaching and learning, identifying threats and challenges associated with it, and providing solutions. There should be a comprehensive and clear framework for integrating AI in the teaching and learning of Islamic education. An inclusive framework that defines the role of a teacher and that of a learner in the process of using AI to facilitate instruction. AI should never replace the instructor in the teaching learning process of Islamic education, but rather be used as a conduit to aid the teaching and learning process.

There is a need to contextualize AI tools and the material produced by artificial intelligence. This can help address issues of cultural sensitivity and ethical concerns related to using AI in teaching and learning Islamic education.

AI can be used in lesson preparation and content generation for Islamic education. AI tools can help teachers create lesson plans, summaries, and explanations of Qur'anic verses, Hadith, and Fiqh in age-appropriate language. Additionally, AI can assist with translation and serve as Tafsir support. AI-powered translation tools can simplify Arabic texts for non-Arabic speakers and propose relevant commentaries. Furthermore, AI can curate resources by recommending authentic Islamic texts, videos, and scholarly works for specific topics. Virtual tutors: AI chatbots can act as assistants to answer students' questions on Islamic teachings instantly, providing references from the Qur'an and Hadith.

Evaluation and assessment of Islamic education should become more comprehensive to reduce excessive reliance on Artificial Intelligence. Knowledge, skills, competencies, and attitudes should be tested and assessed in more complex and challenging ways that require human input. This approach will promote critical thinking and problem-solving abilities. Tasking learners to write essays may no longer be enough to evaluate knowledge acquisition in Islamic education since AI can do this effectively. Therefore, educators may need to develop new and more effective assessment tools to measure mastery. This can be achieved by redefining what constitutes mastery, emphasizing higher-order thinking, critical analysis, creativity, and the ability to apply knowledge in unpredictable contexts.

As AI is rapidly advancing, more research must be conducted to identify mechanisms through which AI elements can be applied in various cultural and religious contexts. This conversation should continue to help curriculum specialists, policymakers, and AI developers address current educational needs and incorporate AI to improve teaching and learning experiences.

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## ASSESSING KEY PLAYERS AND EXPERTS' OVERVIEWS ON THE MALAYSIAN DUAL LANGUAGE PROGRAMME (DLP) IMPLEMENTATION: ARE THEY THE SAME?

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**Abstract:** *In the global arena, Dual Language Programme (DLP) is a practice initiated to promote bilingualism development besides elevate students' positivity in learning. Contextualising into the Malaysian setting, DLP is introduced in 2016, focusing on the teaching and learning of Science and Mathematics subjects using English as the medium of instruction. This is challenging as the key players juggle between language and content subjects. Concerning that, this study comes in hand. The main objective of this study is to discover the views between the key players and the experts with regards to challenges faced in the programme and recommendations to better the programme. Hence, this study gathered DLP students and teachers from various backgrounds nationwide in the first phase of data collection, utilising survey questionnaire and open-ended questions. From the results, the second phase of data collection was executed involving twelve experts of various fields. By employing questionnaire, the data from the experts was analysed using Fuzzy Delphi Method (FDM). The findings from the experts were then illustrated in the form of rankings for both dimensions, indicating the consensus was obtained among the experts. The views are significant for the betterment of the programme, especially on the policy evaluation. In encapsulation, DLP may succeed if its implementation is planned thoroughly by taking into account the readiness and preparedness of the key players involving teachers and students.*

*Keywords: Dual Language Programme (DLP), programme evaluation, Fuzzy Delphi Method (DLP), science and mathematics, key players*

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### 1. INTRODUCTION

Dual Language Program (DLP) is encouraged due to the positive benefits it offers. DLP assists language proficiency development, promotes enjoyment, possesses positivity, elevates students' outcomes as well as academic achievement and nurtures bilingualism (Hamman, 2018; Lee & Jeong, 2013; Lindholm-Leary, 2016; Li et al., 2016; Thomas & Collier, 2012; Tran et al., 2015). This program creates an additive bilingual learning environment, allowing the equality of native and target language in terms of program, curricular, and instructional level (Jong & Bearse, 2014). DLP is highly related to bilingual education as it includes English learners and native English speakers; the program is designated for the development of bilingualism and biliteracy for all students, academic performance, and multicultural competence (Christian, 2016; Hamman, 2018; Thomas & Collier, 2012).

In the Malaysian context, DLP evolves in using English to teach science and mathematics, which is rather challenging. This is prevalent, especially in countries recognizing English as their second or foreign language, with no exception Malaysia. As demonstrated by Xie and Curle (2020), English proficiency serves as the strongest factor and predictor in the success of English as the medium of instruction practice. This is challenging because students need to be equally balanced in both language and content subject. Similarly, this challenge might also confront teachers too. Furthermore, the use of English as the means of instruction stroked the

Malaysian education system since 2003. via the teaching and learning of science and mathematics under ‘English for Teaching Mathematics and Science’ (ETeMS) policy.

As DLP provides flexibility in its implementation, it is crucial to forecast the consequences of the implementation as highlighted by Ministry of Education Malaysia (2015). Thus, this study is governed based on the foregoing gaps. As advocated by Vidovich (2007), a micro focus offers more platforms for the teachers, parents and students at the ‘grassroots’ to contribute to the democratization of education. Policy directives towards achieving bilingualism in education run the risk of failing if not well conceived and implemented (Ha, Khoo & Chng, 2013). Furthermore, as Malaysia is known to have long adopted the top-down approach in its educational reform and this has led to an array of issues and not to mention the inconsistency in the implementation (Hwa, 2017; Tagg, 2016), it entails a forecasting notion to elucidate how the experts perceive this programme implementation.

The Malaysian Dual Language Programme (DLP) was first introduced in 2016. To note, Malaysian studies have gleaned the implementation from several lenses. As unearthed by Bullah and Yunus (2019), the urban DLP teachers displayed positivism towards the implementation but disclosed their worries regarding the lack of facilities and resources. This somehow reiterates Unting and Yamat (2017). Shamsudin, Abdullah and Noh (2018) on the other hand claimed that teachers were moderately ready with their skills, knowledge and interest. Suliman, Nor and Yunus (2017) as well as Suliman, Nor and Yunus (2019) revealed that language mastery influenced the DLP students’ level of readiness and confidence. This opposed Suliman, Nor and Yunus (2018) in their study involving non-DLP students who displayed positivity in their language capabilities and attitudes to learn using English. Hence, this study focuses on the challenges in the implementation of DLP and ways to improve its execution. The following are the research questions probed in this study.

- i. What are the key players’ challenges in the programme?
- ii. What are the recommendations to improve the programme?
- iii. What is the most threatening challenge in the programme implementation?
- iv. What is the best recommendation to ameliorate the current programme implementation?

## 2. METHODOLOGY

This study employed quantitative research approach. For the purpose of this study, open-ended questions and survey questionnaires were utilised. The first phase of the study employed open-ended questions distributed to 2 162 students and 435 teachers involved in the DLP programme. They were selected based on purposive sampling and their selection covers the whole nation encompassing various types of schools and localities. The open-ended questions discovered both challenges faced and recommendations to improve DLP. Concerning the data analysis, content analysis was utilised, in which the open-ended responses would be transformed into numerical data. To analyse open-ended responses, researchers look for overlapping themes in the open-ended data and count the number of themes or the number of times that the participants mention the themes. In the context of this study, the responses written by the respondents would be given a code. Each code is a representative of a theme. Similar responses and recurring patterns were collated under the same theme. That means the researcher would infer to the content of each response to determine which theme they represent. Once the coding

process is completed, the researcher counted the frequency and percentage of the emerging themes. Themes were ranked based on the frequency and percentage counted.

For the second phase involving the experts, Fuzzy Delphi Method (FDM) was used to gather the experts' consensus for both domains, challenges and recommendations for the programme. Questionnaire serves as the main research instrument besides the utilization of one open-ended question to be answered by the experts. The experts would have to respond on the five-point Likert scale based on the rubric provided in the questionnaire. Each dimension has different rubric. The experts were chosen based on purposive sampling and their selection varied based on certain qualities and traits, representing equal distribution between those in the administration and academic arena. The selection of the experts ranges from the higher education institution academicians, policy makers, personnel handling the DLP in the higher authority level (such as the Ministry of Education or State Education Department) and previously serving director general of education. In total, twelve experts available and willing to participate in this study.

### 3. FINDINGS

#### 3.1 Key Players' Challenges in The Programme

The findings will be divided into several parts, focusing on the key players before the experts' views. The table below indicates the challenges faced by the students.

**Table 1: Students' Challenges in the Programme**

No.	Students' Challenge	Frequency	Percentage (%)
1	Understanding the lesson	940	46.5
2	Limited English mastery	474	23.4
3	Environment factor	138	6.8
4	Answering exams in English	103	5.1
5	Teachers' factor	60	3.0
6	Decrease in academic performance	38	1.9
7	Learning style	36	1.8
8	References and materials	11	0.5

As described in the table, two major challenges confronted by the students would be understanding the lesson and limited English mastery. Almost half of the respondents (940 responses) believed that understanding the lesson would impede the progress of their learning process. It is explained by *'I could not understand some words in English and I am afraid to speak in English'*, *'I don't understand some words I learn. So I can't understand what I learn'*, *'for science, I could not understand the procedure of a certain experiment'* and *'I had difficulty in understanding scientific terms in English as I am used to understand it in Bahasa Melayu'*. Understanding is very essential in the learning process. When students are incapable to understand the lesson, that indirectly defeats the purpose of learning. Students should be able to demonstrate their understanding if the lesson is conducted effectively and well-planned.

In greater details, there is a relation between understanding the lesson and limited English mastery. When students have limited English mastery, they would find difficulties in comprehending the lesson. This may be due to the ineptitude of vocabularies. To further

illustrate this, the respondents denoted that *'I have problems in finding the meaning of some words and to answer it back in English. I also hesitated to ask questions in English', 'I face challenge in this programme to speak English during class and I also have a hard time to remember scientific/mathematics terms in English', and 'I need to memorise a lot of vocabularies and know their definitions in learning science and mathematics'*. Students with limited language mastery would be facing hurdles in this programme. This is even more prominent when students understand the scientific terms and mathematical equations. They may know the terms in the national language but hardly understand when explained in English. In addition, it is imperative to unearth the challenges faced by the teachers. The following table explains the teachers' challenges in the DLP.

**Table 2: Teachers' Challenges in The Programme**

No.	Teachers' Challenge	Frequency	Percentage (%)
1	Students' language mastery	144	43.6
2	Teachers' competency	102	30.9
3	Students' understanding	27	8.2
4	Limited resource	21	6.4
5	Environment factor	16	4.8
6	Syllabus	9	2.7
7	Full English usage	8	2.4

It is crucial to acknowledge the challenges faced by teachers as they are involved directly with the programme. From the responses, the language mastery issue is prevalent from the teachers' points of view. Teachers contended that students' mastery of language (144 responses) as the major problem halting the implementation of this programme as elucidated via *'students with limited English mastery find it more difficult to learn as they were learning in BM during primary schools', 'English language skills among students as some students find that it is hard for them to understand the concept when it is taught in English' and 'some students were weak but insist on learning in English'*. These explain the competency issue among students that may impede the teaching and learning process.

Besides, teachers also admit that their own incompetency as one prominent challenge in DLP (102 responses). This is also evident as portrayed in the above excerpt. As they are non-language teachers, they find it challenging to teach the subjects in English. Even though some of them used to teach in English during the PPSMI era, the post-PPSMI period has somehow loosen their confidence in teaching using English. They revealed that *'I need to improve my English especially in pronunciation and speaking', 'I have weak English mastery and less confident to speak in English', 'limitation in giving explanation as I need to speak in English. I am not competent in English that makes me explain in on the surface only', and 'it has been years I don't use English so when I need to start back, I felt less confident to speak and vocabulary challenge'*. These two main challenges have implied that language mastery among students and teachers are the major challenges from the teachers' side.

Reiterating issues faced by students, the teachers also disclosed that students' understanding as a problem impeding the teaching and learning process. Students with inability to learn science and mathematics would face big challenge when English is used as the means of instruction. Irrefutably, some students are quite weak in science and mathematics subjects. Therefore, this provides minimal challenge to the teachers besides the issue on resources and materials. They

faced problems as the school is only supplied with the textbook and the rest would depend on the school initiatives. Teachers would have to find extra teaching resources to cater to the needs of diverse students. In addition, they would have to put extra effort in getting additional materials on the Internet and practise sharing concept with teachers from other schools. In fact, they found it difficult to get the resources from the bookstores as the supply would be very limited.

### 3.2 Key Players' Recommendations for The Programme

The following table identifies suggestions made by the students.

**Table 3: Students' Recommendations for The Programme**

No.	Students' Recommendation	Frequency	Percentage (%)
1	Bilingual teaching	285	18.4
2	Improved references and materials	239	15.4
3	Organise more activities	212	13.7
4	Teachers improvement	185	11.4
5	Utilise technology	163	10.5
6	Enhances English	116	7.5
7	Early exposure to DLP	90	5.8
8	Bilingual examination	54	3.5
9	Abolish DLP	34	2.2

As for students' responses, there are many recommendations put forward by them. The top two recommendations deal with the practice of bilingual strategy (285 responses) besides improving references and materials (239 responses). The students addressed that since this is a dual language programme. The teaching and learning process should be conducted in both languages, rather than focusing on the use of English solely. They proposed that *'teachers need to help us understand more by translating the terms or explain it bilingually'*, *'put dual language in the exam paper to make people easy to understand'*, *'I think the textbook should be in dual language as the terms are hard to understand'*, *'change the exam format by answering in dual language'*, and *'science and mathematics subjects should be in dual language either 50% Malay 50% English or 70% English 30% Malay'*.

In accordance to bilingual strategy, the students also proposed for improvement in the references and materials. Besides improving the existing textbooks, the respondents also suggested for more exercise books and materials to be available in bookstores. This is elucidated via *'the meaning of the terms in textbooks should be written at the bottom of the textbook pages so students can refer easily'*, *'state more vocabularies in the glossary so students could understand the scientific words'* and *'the textbooks should be more informative, with more bilingual references and exercise books in bookstores'*. It is important for the references and materials to be given consideration by the authority as they assist the teaching and learning process. The teachers' voices are also pivotal in demonstrating their recommendations for the programme. Table 4 depicts their recommendations.

**Table 4: Teachers' Recommendations for The Programme**

No.	Teachers' Recommendation	Frequency	Percentage (%)
1	Provide courses and trainings	70	22.5
2	Provide resources and materials	44	14.1
3	Allow bilingual strategy	38	12.2
4	Selection of students	36	11.6
5	Ensure teachers' quality	26	8.4
6	Abolish the programme	23	7.4
7	Be clear of the programme outline	22	7.1
8	Early exposure of the programme	16	5.1
9	Solidify students' proficiency	12	3.9
10	Provide incentive	10	3.2
11	Improve the syllabus	7	2.3

As presented in the table, 70 teachers proposed for more courses and trainings to be provided to the teachers in the programme. These courses and trainings would equip them with better pedagogies and methodologies in delivering the lessons. Besides, courses and trainings should also enable teachers to improve their English proficiency. They affirmed that *'provide programmes or workshops specifically for teaching science in English'*, *'provide training (pedagogy) to the teachers involved'*, *'provide more courses for teachers to increase their confidence level to teach in DLP'*, *'coaching from mentors or experienced teachers in DLP science and mathematics'*, and *'language proficiency courses should be carried out frequently for both senior and junior teachers who are weak in English'*.

### 3.3 Experts' Views on The Most Threatening Challenge in DLP

This section demonstrates the findings from the experts' views. This begins with the challenges in the programme implementation. The items were collated from the key players' findings.

**Table 5: Challenges in the Programme Implementation**

No.	Item
1	Students' English language mastery
2	Science and Mathematics teachers' English proficiency
3	Teachers' readiness in teaching using English
4	Students' understanding of the lesson taught in English
5	Insufficient and late supply of textbooks
6	Adjusting to the transition of instructional medium from BM to BI
7	The new and challenging KSSM syllabus (Science & Mathematics)
8	The use of total English in the lessons
9	Unclear guidelines of the programme implementation

From these challenges, the experts responded based on their opinions and the results of the analysis are presented as followed.



**Table 6: Ranking of Items**

Ranking	Item	Consensus Percentage	Result
1	Science and Mathematics teachers' English proficiency	100%	ACCEPT
1	Teachers' readiness in teaching using English	92%	ACCEPT
3	Students' understanding of the lesson taught in English	92%	ACCEPT
3	Students' English language mastery	83%	ACCEPT
5	The use of total English in the lessons	92%	ACCEPT
6	Adjusting to the transition of instructional medium from BM to BI	67%	REJECT
7	Unclear guidelines of the programme implementation	33%	REJECT
8	The new and challenging KSSM syllabus (Science & Mathematics)	33%	REJECT
9	Insufficient and late supply of textbooks	83%	REJECT

From these findings, the experts believed that science and mathematics teachers' English proficiency as the most threatening challenge in this programme implementation. This implies that this item is the first order priority and very important to be resolved, treated and dealt with. The teachers' proficiency has a direct bearing on the major issue discussed. Similarly, the experts also connoted that teachers' readiness in teaching using English is another threatening challenge to be dealt with. It is also contended that the other three items ranked third and fifth are also of the paramount importance to be resolved. These include students' understanding of the lesson taught in English, students' language mastery and the use of total English in the lessons. It can be deduced that experts perceived issue related to English mastery and usage as the prominent and evident challenges that may halt or impede the programme implementation.

### 3.4 Experts' Views on The Best Recommendation to Ameliorate DLP

The following table depicts the recommendations to improve the programme as proposed by the interest groups.

**Table 7: Recommendations for the Programme**

No.	Item
1	The use of bilingual strategy in the lessons
2	Early exposure to the students in learning the subjects since primary schools
3	Arm science and mathematics teachers with on-going courses
4	Solidify teachers and students' English mastery
5	Exercise a rigorous selection of DLP students
6	Better and proper supply of textbooks and reference books
7	Better and clearer guideline and programme implementation procedure
8	Assign more capable teachers with proficiency and competency in English
9	Vary teaching and learning activities to arouse students' interest

The following depicts the results from the experts.

**Table 8: Ranking of Items**

Ranking	Item	Consensus Percentage	Result
1	Arm science and mathematics teachers with on-going courses	100%	ACCEPT
2	Vary teaching and learning activities to arouse students' interest	83%	ACCEPT
3	Solidify teachers and students' English mastery	100%	ACCEPT
4	Early exposure to the students in learning the subjects since primary schools	100%	ACCEPT
4	Better and clearer guideline and programme implementation procedure	92%	ACCEPT
6	Assign more capable teachers with proficiency and competency in English	92%	ACCEPT
7	Better and proper supply of textbooks and reference books	83%	ACCEPT
8	The use of bilingual strategy in the lessons	50%	REJECT
9	Exercise a rigorous selection of DLP students	58%	REJECT

From the experts' responses, it is evident that the most feasible improvement would be on teachers' domain. Arming teachers with on-going courses would indirectly boost their confidence level to teach in the programme. The experts believed that this recommendation is definitely feasible and can be implemented. In addition, equipping the teachers with courses and trainings are definitely within the available resources and it will be well-accepted by the people involved. By providing courses, this will enable teachers to develop their pedagogies, methodologies as well as language proficiency and competency. This would somehow be associated to the second ranking item, which highlights on the needs to vary teaching and learning activities. Teachers play a big role to ensure the effectiveness of teaching and learning process. Furthermore, the experts also believed that both students and teachers' language proficiency need to be nurtured. Although the experts did not perceive unclear guideline of the programme implementation as a determining factor impacting the programme, they collated 92% consensus on the recommendation to have this in improving the programme. Another recommendation affirmed to be feasible with less hindrance to its implementation would be assigning capable teachers with the proficiency in English.

#### 4. DISCUSSIONS

The study which garnered different results from the key players and the experts' consensus, revealed all challenges are important in this programme implementation. The challenges may threaten the effectiveness of DLP implementation and mainly associate to the use of English as the medium of instruction in the teaching and learning process. Besides, the experts highly affirmed that the most critical obstacle would come from the proficiency and competency in the English language among science and mathematics teachers. If this issue is not rectified urgently, this may create a more problematic issue in the long run. When PPSMI was conducted back then, it was done without any probation period to examine the value and its impact which later affects the national education system.

When the experts affirmed that teachers' proficiency is the most relevant and needs to be treated, resolved and dealt with, this replicates the findings found in Ministry of Education Malaysia (2003); Ministry of Education Malaysia (2008). Deliberating on teachers' competency and readiness would eventually lead to students' understanding which is mainly affected by their limited proficiency in the target language. Furthermore, the key players also

believe that providing training to the teachers and allowing bilingual strategy in the teaching and learning process as necessary in improving the programme.

The challenges would have to be resolved to ensure that the programme can be impactful and desirable. Thus, the teachers' aspect is the most fundamental domain to be rectified. Providing them with courses and trainings, varying their teaching methods and enhancing their language skills are the three suggestions collating the experts' consensus. Teachers must be well-trained to cater to the needs of challenging curriculum considering the diversity of the students (Ministry of Education Malaysia, 2015).

Similarly, professional development is generally effective and has a fundamental role in improving the teachers' instructional support as well as fostering students' academic language proficiency (Egert, Dederer & Fukkink, 2020). Prior to that, Vazquez and Ellison (2013) proposed that teachers should be equipped with language lessons as a means to heighten their linguistic competence if their competency is low as teachers' proficiency would benefit students in this programme (Ministry of Education Malaysia, 2008). That shows how crucial and dominant teachers' voices and involvement in any educational programme introduced.

#### **4. CONCLUSION**

To accentuate, this study has demonstrated that the key players and experts' have reached to a consensus in determining the most threatening challenge in the Malaysian DLP implementation besides proposing the most feasible recommendation to be carried out. They have agreed that teachers' English proficiency and readiness would be causing many issues in the DLP implementation. Due to that, they reinforced that arming those teachers with on-going courses would assist them in delivering the lessons better apart from providing them access and platform to vary their teaching and learning strategies.

Indubitably, DLP in the Malaysian context would valorise the standard of English, especially among the students besides assisting their future marketability in the global avenue. It serves as a good platform to boost students' confidence in the language aspect and enhance their knowledge in science and mathematics repertoire. Therefore, DLP may succeed if its implementation is planned thoroughly encompassing the readiness and preparedness of the main key players involving teachers and students. Otherwise, it may only replicate the history of ETEMS should rectifications and solidifications are neglected.

DLP in the Malaysian context needs to be revamped from its current execution. The experts themselves have agreed that few key points would need to be improved to better the programme. As reinforced by Palmer et al. (2016), program implementation is nested in a matrix of complexities that involve not only coordination from stakeholders to rally materials on resources and align expectations for curriculum and instruction but also providing support networks for teachers. Therefore, the current practice in the education system may somehow reflect the future of the education system. Any arising issues would need to be tackled to better the system. Thus, all stakeholders would need to corroborate in the education system to ensure success of the educational agenda.

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# LEADERSHIP IN INNOVATIVE ASSESSMENT: AN INTEGRATION OF DIGITAL APPLICATIONS IN PROJECT-BASED LEARNING (PBL) FOR PHYSICS 1 COURSE AT CFS IIUM

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**Abstract:** *This study investigates the integration of digital applications in Project-Based Learning (PBL) as an innovative assessment method for the Physics 1 course at the Centre for Foundation Studies, International Islamic University Malaysia (CFSIIUM). A total of 83 students from the Foundation in Medicine and Pharmacy program participated. The study employed a mixed-methods approach using a 15-item questionnaire and open-ended questions, with quantitative data analysed using descriptive and inferential statistics, and qualitative data analysed through thematic coding. The descriptive analysis revealed consistently positive student perceptions, with mean scores above 4.3 on a 5-point scale across all four themes. The study also found significant positive correlations between key themes. Specifically, there was a strong link between students' confidence in explaining physics concepts and their ability to relate those concepts to real-life situations ( $r=0.841$ ,  $p<0.001$ ). Similarly, student motivation was strongly correlated with the perception that the activity was enjoyable and meaningful ( $r=0.864$ ,  $p<0.001$ ). The study identified challenges, such as limited app features, technical skill gaps, teamwork, time management, and difficulties in visualising abstract concepts. These findings highlight the critical role of leadership in championing this innovative assessment. Leadership's support is vital for transforming assessment from an exam-driven practice into an authentic, holistic process that cultivates creativity, collaboration, and digital literacy. Future research should explore a wider range of digital and AI tools and how these innovative assessments can be extended across disciplines to better support student learning.*

*Keywords: Digital Applications, Project-Based Learning (PBL), Innovative Assessment, Leadership Management, Student Engagement.*

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## 1.0. Introduction

Physics at the foundation level is often perceived as one of the most challenging subjects, particularly because of its abstract concepts and reliance on mathematical formulations. Many students struggle to visualise physical phenomena and therefore adopt rote memorisation strategies to cope with examinations (Elby, A., 1999). This reliance on memorisation, however, limits the development of deep conceptual understanding and the ability to apply physics principles in real-life contexts. Such issues have long raised concerns among educators, who continue to search for strategies that are not only engaging but also capable of nurturing higher-order thinking skills.

In recent years, the emphasis on student-centred learning has encouraged the use of innovative pedagogies such as Project-Based Learning (PBL). Unlike traditional lecture-based

approaches, PBL approach improved scientific work skills and conceptual knowledge in physics students. PBL's also value in active exploration, collaboration, and authentic demonstrations of understanding which are crucial in preparation for advanced studies (Devanda, Lufri, & Elizar, 2023). Therefore, for pre-university students in particular, such approaches are crucial in preparing them for the more demanding courses they will encounter at the undergraduate level.

In 2016, the leadership management at the Centre for Foundation Studies, International Islamic University Malaysia (CFSIIUM), urged all departments to launch an initiative that integrated PBL into courses as a component of the official assessment framework. Subsequently, the COVID-19 pandemic in 2020 transitioned PBL to a digital platform. Recently, with improvements in smartphone technology and applications like CapCut, Canva, ChatGPT, and various mobile tools, students have been enabled to express creativity, illustrate abstract ideas, and communicate knowledge effectively using all these advancements. Moreover, Generation Z exposure to social media has prompted department leadership to make full use of all these resources. Integrating digital PBL into the formal grading framework, representing 15% of the overall course assessment, reflects courageous leadership, insight, and a deliberate move toward innovative evaluation approaches. This method changes the emphasis from exam-focused evaluation to a more comprehensive, genuine, and skills-based assessment.

Therefore, this study investigates the integration of digital applications in PBL as an innovative assessment method in the Physics 1 course. Specifically, it seeks to answer the following research questions:

1. How do students perceive the integration of digital applications into PBL as part of the Physics 1 course assessment?
2. What challenges do students encounter when engaging in digital video projects for Physics learning?
3. What suggestions do students provide to improve the implementation of digital-based PBL as an innovative assessment method?

By addressing these questions, this paper aims to contribute to the discourse on leadership in innovative assessment. It demonstrates how leaders of institutions as well as educators can transform assessment from a traditional, exam-driven practice into a more authentic and holistic process that not only measures knowledge but also cultivates creativity, collaboration, and digital literacy.

## **2.0 Literature Review**

### **2.1 Project-Based Learning (PBL)**

PBL has gained increasing recognition as a student-centred pedagogy that promotes critical thinking, problem-solving, and collaboration. Unlike traditional instruction, where knowledge is transmitted from teacher to student, Duong T.T.H. (2024) reported that the implementation of PBL in General Physics has shown a significant positive outcome in students' engagement, understanding, and satisfaction. Meanwhile Bell (2020) demonstrated PBL enables students to see the relevance of abstract concepts to real-world applications and encourages deeper engagement with content while fostering essential 21st-century skills such as teamwork and communication. Huysken et al. (2019) also showed that collaborative PBL models are effective in improving student engagement and learning in science, technology, engineering, and mathematics (STEM) disciplines.

While in Malaysian context, education institution is encouraged to implement PBL in teaching and learning as an alternative method for improving students' academic performance in learning, which in line with 21st-century learning (Sabri & Nasri, 2022). This is also parallel with the requirements of the Ministry of Education Malaysia which is to create a world-class education in producing a generation that practices a culture of thinking, critical, creative, and innovative. Therefore, the leadership management of CFSIIUM had taken a crucial role in cultivating independent learning and preparing students for more advanced studies.

## **2.2 Digital Applications in Teaching and Learning**

The rapid development of smartphone technologies and its digital applications have opened new opportunities for innovative teaching and learning practices. The advancement of smartphone camera and its software plus a smart and multi-function applications such as Canva, CapCut, and many more provide accessible platforms for students to create multimedia artefacts. In addition, the generative AI tools such as ChatGPT can support idea generation and conceptual explanation. These digital technologies have made a paradigm shift in the entire education system. It is not only a knowledge provider but also a co-creator of information, a mentor, and an assessor (Haleem, 2022).

Technological improvements in education have made life easier for students. Instead of using pen and paper, students nowadays use various software and tools to create presentations and projects. Abdulrahman, M. D et. al (2020) reviewed that multimedia tools combining text, audio, video, animation, and interactive elements enhance the teaching and learning process by catering to different learning styles and improving student engagement and understanding in subjects including physics. Furthermore, Tenzin, Tendar, and Zangmo (2022) found that digital applications can address the difficulty of representing abstract concepts. Video editing tools, animations, and simulations allow students to visualise forces, motion, and energy transfer in ways that static textbook diagrams cannot. These findings support the rationale for embedding smartphone applications in student projects as part of physics assessment.

## **2.3 Leadership Management in Supporting Innovative Assessment**

Leadership management plays a crucial role in championing innovative assessment by embedding it into institutional strategy rather than leaving it as a single-instructor initiative. This involves shaping policies that prioritise PBL, providing sufficient time for project work, and ensuring assessment rubrics evaluate collaboration, creativity, and critical thinking. In the Malaysian higher education landscape, the Malaysia Education Blueprint 2013–2025 emphasises the importance of alternative assessments that nurture 21st-century competencies, which signals a call for leaders to provide policy alignment, faculty training, and workload adjustments to integrate these methods systematically.

Furthermore, leadership is vital for addressing barriers to innovation. This includes ensuring robust infrastructure, providing technical support, and avoiding faculty overburdening. Leaders can also develop scaffolding frameworks to help students manage projects effectively and ensure fair participation. By taking a proactive stance, educational leaders can transform challenges into opportunities for systemic improvement, strengthening the institution's capacity for sustainable innovation.



### 3.0 Research Methodology

#### 3.1 Participants

The participants of this study consisted of 83 students from the Foundation in Medicine and Pharmacy programmes at CFSIUM, Gambang Campus, Pahang. The selection of the participants was carried out using purposive sampling, which was based on the group of students assigned by the lecturer to prepare a video presentation as part of the course assessment. The sample was considered sufficient for the broader foundation student population in Physics 1.

#### 3.2 Project-Based Learning and Assessment Structure

Table 1 shows an assessment structure which contributed 15% of the overall course grade.

**Table 1: Digital PBL Assessment Structure**

Assessment Type	Video Presentation	Peer Assessment	Written report
Weightage (%)	7	3	5
Task	Short video (5–7 minutes) explaining a selected physics concept and relating it to real-life applications	Peers evaluated each group member	A project report documenting the physics concepts, application examples, and reflection on the process.
Rubrics	(i) explanation of ideas and physics knowledge, (ii) creativity and video editing skills, (iii) teamwork and participation, and (iv) time management.	(i) completion of assigned tasks, (ii) contribution to group work, and (iii) respect and support for peers.	(i) clarity of communication, (ii) accuracy of physics content, and (iii) critical reflection.

The course team developed the assessment rubric collaboratively to ensure fairness, transparency, and alignment with course learning outcomes. The use of multiple components allowed for a more holistic evaluation of student learning, capturing both content mastery and transferable skills.

#### 3.3 Research Design

Data were collected using a structured questionnaire consisting of two parts. Table 2 summaries the questionnaire used. Two open-ended questions designed to elicit qualitative feedback: (i) main challenges faced during the project and, (ii) suggestions for improvement.

**Table 2: Summaries of Questionnaire**

Number of items (closed ended)	15
Theme/Part	4 Themes
Scale	5 Point Likert Scale on Agreement
Cronbach's Alpha	0.961 (highest reliability)
Open-ended	2 Questions

### 3.4 Data Collection Procedure

The survey was administered online at the end of the semester, after students had completed their projects and presented their videos. Students were given one week to respond. The online format was chosen to ensure convenience and higher response rates, given students' familiarity with digital tools.

### 3.5 Data Analysis

Quantitative data from the Likert-scale items were analysed using descriptive statistics (mean score and standard deviation) and inferential statistic ( $r$  and  $p$  values for correlation and significant relationship respectively). These results were summarised in tables below to highlight patterns in student perceptions. Qualitative responses from the open-ended questions were coded thematically with qualitative excerpts focusing on recurring themes such as challenges and suggestions for improvement. The mixed-method analysis provided both breadth and depth in addressing the research questions.

## 4.0 Results

### 4.1 Student Perceptions of Digital-Based PBL

Table 3 shows the survey questionnaire and the summarises the descriptive analysis of students' perceptions across four themes. Meanwhile, Tables 4 to 6 summarise the inferential statistics, detailing how these perceptions correlate with each other within their respective themes and the significance of the correlations.

**Table 3: Questionnaire and Descriptive Analysis (N = 83)**

<b>Theme 1: Use of digital applications</b>	<b>M=4.47</b>	<b>SD=0.54</b>
1.I feel comfortable using Apps to complete my assignments	M=4.48	SD=0.58
2.Apps make it easier for me to explain physics concepts visually or audibly	M=4.35	SD=0.62
3.Usage of Apps enhances my creativity and skills in expressing ideas	M=4.44	SD=0.58
4.I have improved my digital skills by these applications	M=4.57	SD=0.44
5.The use of apps is relevant to my current learning	M=4.51	SD=0.48
<b>Theme 2: Effectiveness of video projects</b>	<b>M=4.42</b>	<b>SD=0.57</b>
6.This video activity helped me understand physics concepts more deeply	M=4.30	SD=0.45
7.This activity makes learning physics more enjoyable and meaningful	M=4.51	SD=0.67
8.I am more motivated to learn physics after completing this assignment	M=4.46	SD=0.60
<b>Theme 3: Collaborative learning</b>	<b>M=4.39</b>	<b>SD=0.63</b>
9.I was able to communicate well with friends while completing this assignment	M=4.33	SD=0.65
10.This assignment encourages teamwork and discussion of physics ideas	M=4.45	SD=0.61
<b>Theme 4: Integration of physics concept into real-life contexts</b>	<b>M=4.46</b>	<b>SD=0.52</b>
11.I created physics models or visual aids creatively	M=4.35	SD=0.52
12.I took the initiative to experience real physics phenomena and shared the experience through video	M=4.36	SD=0.51
13.This activity helps me think critically and creatively	M=4.48	SD=0.55
14.I can relate physics concepts to real-life situations	M=4.61	SD=0.45
15.I am more confident in explaining physics concepts after completing this video	M=4.51	SD=0.58

**Note:** M=Mean Score, SD=Standard Deviation, 1=Strongly Disagree, 5=Strongly Agree

The results in Table 3 show that students expressed very positive perceptions of the digital-based PBL approach, with all mean scores above 4.3 on a 5-point scale. The highest rating was for the use of digital applications ( $M = 4.47$ ), suggesting that students appreciated the opportunity to use smartphone apps and editing tools in their projects. This was followed closely by integration of physics concepts into real-life contexts ( $M = 4.46$ ), reflecting that students were able to see the relevance of physics beyond textbook exercises.

Effectiveness of video projects ( $M = 4.42$ ) and collaborative learning ( $M = 4.39$ ) were also favourable, indicating that students found value in teamwork and creative production. However, the slightly lower mean for collaboration compared to other themes points to challenges in group work, which are elaborated in the qualitative findings. Overall, the quantitative results confirm that students viewed digital-based PBL as an engaging and meaningful compared to traditional forms of assessment.

**Table 4: Correlation Matrix for Survey Items on Use of Digital Applications (N =83)**

Item	1	2	3	4
1. I feel comfortable using Apps to complete my assignments	-			
2. Apps make it easier for me to explain physics concepts visually or audibly	0.529***	-		
3. Usage of Apps enhances my creativity and skills in expressing ideas	0.558***	0.703***	-	
4. I have improved my digital skills by these applications	0.682***	0.690***	0.763***	-
5. The use of Apps is relevant to my current learning	0.699***	0.606***	0.594***	0.828***

**Note.** Values are Pearson correlation coefficients. Significance levels are indicated by asterisks: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

Meanwhile, Table 4 shows all correlations between the five survey items on the use of digital applications were positive and statistically significant at  $p < 0.001$ . The Pearson correlation coefficients ( $r$ ) ranged from 0.529 to 0.828. The strongest correlation was between the improvement of digital skills and the perceived relevance of apps to current learning ( $r=0.828$ ,  $p<0.001$ ). There was a strong association between the belief that apps make it easier to explain physics concepts visually or audibly and the enhancement of creativity and expression skills ( $r = 0.703$ ,  $p<0.001$ ). Feeling comfortable using apps to complete assignments was positively correlated with all other items, including the belief that apps enhance creativity ( $r = 0.558$ ) and improve digital skills ( $r = 0.682$ ).

**Table 5: Correlation Matrix for Survey Items on Effectiveness of Video Projects and Students Collaborative Learning (N=83)**

Item	6	7	8	9
6. This video activity helped me understand physics concepts more deeply	-			
7. This activity makes learning physics more enjoyable and meaningful	0.783***	-		
8. I am more motivated to learn physics after completing this assignment	0.783***	0.864***	-	
9. I was able to communicate well with friends while completing this assignment	0.523***	0.652***	0.527***	-

10. This assignment encourages teamwork and discussion of physics ideas	0.513***	0.558***	0.546***	0.700***
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**Note.** Values are Pearson correlation coefficients. Significance levels are indicated by asterisks: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

Furthermore, Table 5 shows the correlations the effectiveness of video projects and collaborative learning among items, were all positive and statistically significant at  $p < 0.001$ . The strongest correlation was between feeling more motivated to learn physics after completing the assignment and the activity being more enjoyable and meaningful ( $r = 0.864$ ,  $p < 0.001$ ). The video activity helping students understand physics concepts more deeply had a strong correlation with the activity being more enjoyable and meaningful ( $r = 0.783$ ,  $p < 0.001$ ) and being more motivated to learn physics ( $r = 0.783$ ,  $p < 0.001$ ). The item “This assignment encourages teamwork and discussion of physics ideas” showed positive correlations with all other items, including a strong positive correlation with the ability to communicate well with friends ( $r = 0.700$ ,  $p < 0.001$ ).

**Table 6: Correlation Matrix for Survey Items on Integration of Physics Concept into Real-Life Contexts (N=83)**

Item	11	12	13	14
11. I created physics models or visual aids creatively	-			
12. I took the initiative to experience real physics phenomena and shared the experience through video	0.590***	-		
13. This activity helps me think critically and creatively	0.619***	0.667***	-	
14. I can relate physics concepts to real-life situations	0.652***	0.673***	0.797***	-
15. I am more confident in explaining physics concepts after completing this video	0.776***	0.666***	0.765***	0.841***

**Note.** Values are Pearson correlation coefficients. Significance levels are indicated by asterisks: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

Finally, Table 6 illustrates the significant connections between students' responses to integration of physics concept into real life contexts. All items showed positive and statistically significant correlations ( $p < 0.001$ ). The correlation coefficients ranged from 0.590 to 0.841. The highest correlation was found between a student's confidence in explaining physics concepts and their ability to relate those concepts to real-life situations ( $r = 0.841$ ,  $p < 0.001$ ). Students who took the initiative to experience and share real physics phenomena through video were more likely to believe the activity helped them develop critical and creative thinking ( $r = 0.667$ ,  $p < 0.001$ ). Creating physics models or visual aids was positively correlated with thinking critically and creatively ( $r = 0.619$ ) and relating physics concepts to real-life situations ( $r = 0.652$ ).

#### **4.2 Open Ended Questionnaire (Student Challenges in Digital PBL and Suggestions for Improvement)**

Table 7 and 8 summarise the qualitative part of the survey, with percentages and samples of students excerpts on the challenges and suggestions for improvement. The primary challenges identified in Table 7 were technical and software limitations (56.9%), conceptual difficulties (30.5%), issues with teamwork and time management (13.8%), and workload balance (6.9%).

**Table 7: Students' Challenges in Digital PBL (N=72)**

Challenges	Percentage (%)	Samples of Students' Excerpts
Technical and software limitations	56.9	Limited features that can be used. Certain apps are not user friendly. Costly to use premium features.
Conceptual difficulties	30.5	Unable to understand physics concept. Difficult to visually explain abstract physics concept. Difficult to ensure that the information from internet is true and from the right sources.
Teamwork and time management	13.8	To get solid agreement from all members. Some team members did not give full commitment due to health condition. Time consuming in editing video.
Workload balance	6.9	Setting time to meet all members. Some team members had other commitment to complete assignment from other subjects.

Note: Only 72 responded out of 83 respondents. A few students gave more than one challenges.

Meanwhile, Table 8 suggested underscoring the importance of enhanced scaffolding from educators, with 42% recommending that educators provide reliable online resources and past assignments as references. A significant portion (30%) also advocated for institutional support (leadership), such as providing pro accounts for software and improving Wi-Fi speed. Other key suggestions included offering workshops and training on video editing (20%) and providing more detailed rubrics to manage time effectively (8%).

**Table 8: Students' Suggestions to Improve the Implementation of Digital Based PBL (N=50)**

Suggestions	Percentage (%)	Samples of Students' Excerpts
Enhanced scaffolding (Educators)	42	Video produced are uploaded on global platforms for comprehensive sharing. Educators should provide reliable website as student's reference. Educators should provide past assignments for reference.
Institutional Support (Leadership)	30	The institution could provide pro accounts or upgrade the current one to ensure smooth running of learning process. The university administration could consider improving wifi speed. The institution could provide apps which is user friendly specifically for students to do editing process.
Workshops and Training	20	Workshops on editing video should be held. A more detailed briefing should be conducted in the early semester or sorts of training.
Flexible Scheduling	8	The duration of the video should be reduced. To provide more detailed rubrics so that students do not waste time looking for unnecessary information.

Note: Only 50 responded out of 83 respondents.

The results demonstrate that addressing technical and logistical barriers through collaborative efforts between leadership management and educators is crucial for the successful integration of digital applications in PBL, as indicated by the data presented in both tables.

## 5.0 Discussion and Conclusion

### 5.1 Discussion

The findings of this study affirm the potential of integrating digital applications into PBL as an innovative assessment method in foundation-level physics education. The positive perceptions reported by students align with previous studies emphasising the motivational and cognitive benefits of PBL (Bell, 2010, Duong T.T.H.,2024, Huysken et al. 2019). Students in this study not only valued the creative use of smartphone applications but also acknowledged the relevance of physics concepts in real-life contexts. This proves that innovative assessments can serve a dual function: capturing student achievement while simultaneously enhancing engagement and conceptual understanding.

In addressing the first research question, the consistently high mean scores across all themes confirm that students viewed digital-based PBL as a meaningful departure from traditional examinations. Meanwhile the survey analysis identified significant positive correlations among themes related to digital PBL. Notably, the highest correlation ( $r=0.841$ ,  $p<0.001$ ) was between students' confidence in explaining physics and their ability to apply concepts to real-life scenarios. Additionally, motivation to learn physics strongly correlated ( $r=0.864$ ,  $p<0.001$ ) with the perception that video activities enhanced enjoyment and meaning in learning. These results illustrate that integrating digital tools and creativity transforms physics into an engaging and empowering subject, enhancing student confidence and motivation. This outcome reflects a broader shift in higher education assessment towards authenticity and relevance, as advocated by Gulikers, Bastiaens, and Kirschner (2004). By allowing students to demonstrate knowledge through video projects, supported by digital applications, the assessment also mirrored the overall soft skills needed. It also emphasised creativity, teamwork, and digital literacy which are often overlooked in conventional physics assessments. Furthermore, digital PBL in physics fosters critical thinking, creative thinking, problem-solving skills, and deeper conceptual understanding (Nurmahasih, U., Jumadi, J. ,2023, & Ibrahim A.,2025)

The challenges reported by students, in response to the second research question, highlight important considerations for sustainable implementation. Technical and software limitations, such as restricted features in free applications, also raised by van de Werfhorst, H. G., Kessenich, E., and Geven, S. (2022) who examines inequalities in multi-level digital readiness among students and schools, highlighting differences in access, skills, and usage of technology linked to socioeconomic status and other demographic factors. The issues of teamwork and uneven participation also tally with Gillies, R. M. (2016) observations on the complexities of collaborative learning. These findings suggest that while PBL can promote collaboration, it also requires careful facilitation and clear accountability mechanisms. The incorporation of peer assessment in this study represents an innovative attempt to address these concerns, though further refinement may be needed to ensure fairness.

Regarding the third research question, students proposed enhancements to digital PBL, emphasising the need for leadership strategies like improving educators' teaching methodologies via training on creating scaffolding structures that assist students in managing projects efficiently, obtaining institutional licenses for popular software, upgrading campus internet connections, and implementing structured training programs focused on video editing and media literacy for students. Additionally, leaders need to tackle low collaborative learning scores by establishing clear guidelines for group assignments and adjusting schedules to reduce workload pressure, thus fostering a balanced educational atmosphere. Student feedback

regarding their experiences ought to guide curriculum development and adjustments in policy. In the end, dedicated leadership is essential for the success of digitally influenced PBL, fostering sustainable and engaging learning experiences throughout the entire institution.

Overall, the findings underscore that innovative assessment is not only about changing evaluation formats but also about rethinking the leadership role of management and educators in designing fair, authentic, and supportive assessment systems. In this study, the deliberate allocation of 15% of the Physics 1 course grade to digital-based PBL represents a tangible expression of such leadership, positioning assessment as a driver of pedagogical innovation rather than a mere measurement tool.

## **5.2 Conclusion**

This study examined the integration of digital applications into PBL as an innovative assessment approach in the Physics 1 course at the CFSIIUM. Three main conclusions can be drawn. First, students reported highly positive perceptions of the initiative, particularly appreciating the opportunity to use digital applications creatively and to connect physics concepts with real-life contexts. Second, despite these benefits, challenges related to technical limitations, conceptual accuracy, and group collaboration were clear, underscoring the need for scaffolding and leadership support. Third, students provided constructive suggestions for the management and educators to improve the approach, conducting training and workshops, improved infrastructure, product licence, financial, and clearer guidance.

These findings contribute to the discourse on leadership in innovative assessment by demonstrating how PBL, supported by digital and AI applications, can be embedded within formal assessment structures to enhance both learning and evaluation. The integration of multiple assessment components such as video projects, peer assessment, and written reports provided a holistic framework that captured not only cognitive understanding but also creativity, collaboration, and responsibility.

For management and educators, this study highlights the importance of moving beyond traditional, exam-centric assessments towards practices that are authentic, student-centred, and skill-oriented. By embracing such approaches, foundation programmes can better prepare students for future academic and professional challenges. Future research may include comparative and longitudinal studies to evaluate lasting impacts, the use of a wider range of digital and AI-supported tools to respond to diverse learning needs, and exploring how management and educators can work together to extend innovative assessments across subjects in ways that are fair, supportive, and meaningful for students.

Finally, the Physics 1 PBL at CFSIIUM demonstrates how innovative assessment, when thoughtfully designed and supported, can transform student experiences in foundational courses. It highlights the role of academic leadership in fostering pedagogical innovation, showing that leaders who champion creative assessment strategies can empower both educators and students, positioning assessment not merely as an endpoint of learning but as a catalyst for educational change and student-centred excellence.

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# APPLICATION OF THE FUZZY DELPHI TECHNIQUE IN DETERMINING ELEMENTS OF CAPACITY BUILDING AMONG INSTRUCTIONAL LEADERS

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*Abstract: Capacity building is an investment in human and social resource development that leads to progress and sustainable development. Therefore, this study aims to look at the elements of capacity building needed in the professional development of instructional leaders. This study uses the Design and Development Research (DDR) Phase 3 method, which is Type 1 testing. The training module evaluation research is an empirical process that shows the effectiveness of using the training module to show evidence and empirical support for the effectiveness of the NPQEL 2.0 training module for prospective principals and head teachers. The sampling technique used is purposive sampling for the selection of 17 experts. All of these experts have been involved in the National Educational Leader Professional Qualification Program (NPQEL). The questionnaire set consists of 15 items specifically built for the Capacity Building domain. The data analysis method used in this study involves the Fuzzy Delphi Technique. The study findings show that there are fifteen capacity building elements that have been agreed upon by experts with a consensus percentage exceeding 75% with a threshold value,  $(d) \leq 0.2$ . All these elements form the Leadership Practice Inventory for the Capacity Building dimension. The results of this study allow 15 items to be used to measure the level of capacity building practices of an instructional leader.*

*Keywords: Capacity Building, Instructional Leadership, Fuzzy Delphi Technique*

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## **Introduction**

National Professional Qualification for Educational Leaders (NPQEL) is a national-level educational leadership training programme of the Ministry of Education, Malaysia (MoE). NPQEL aims to train future school leaders. This programme has been implemented since 1999 until now under the management of the Aminuddin Baki Institute. Since 1 July 2014, the MoE has required the NPQEL certificate as a mandatory qualification for the appointment of school leaders, Principals and Headmasters (KPPM, 2013).

The change in training approach in the 2018 version of NPQEL or NPQEL 2.0 for short emphasizes future-oriented and competency-focused training methods. The 2018 version of NPQEL framework is developed from the operational definition of a high-performing leader. The competency elements that are focused on are visionary leaders, learning leaders and change leaders who have an impact on school excellence and student development. The 2018 version of NPQEL delivery method adopts a 70:20:10 approach, namely 70% experiential learning, 20% social learning and 10% formal learning. All activities in the training session are based on andragogy principles and are participant-centered, aiming to develop mastery of 10

educational leadership competencies. The competencies are strategic thinking, decision-making, leading change, problem-solving, leading learning, capacity building, building networks and relationships, communicating effectively, having leadership and having a high personality.

### **Literature Review**

The role of principals in supporting teacher leadership is an important role in their development to participate in instructional leadership, from good to great (principals need specific skills to be effective) and build a learning community in the school (Levenson, 2014).

According to Fullan (2007), principal leadership is very important for planning, implementing and monitoring every aspect of change implemented at the school level. School leaders are change managers and the core of the task of leading change in schools. Therefore, they need to have high knowledge and skills to lead schools. The theory of instructional leadership states that the key to the effectiveness and success of a school lies in the instructional leadership of its principal, which is said to be able to increase the commitment of teachers (Glickman, Gordon, & Ross-Gordon, 2018). A leader must possess strong credibility and skills to inspire and motivate subordinates. Fullan (2007) emphasizes that leaders need to have skills in implementing change and influencing subordinates to cooperate and support change in order to achieve the goals set by the organization. Principals as leaders, not only manage but must play the role of proactive leaders, understand the vision and mission of the school and share methods and techniques in driving academic excellence in their schools (Szeto & Cheng, 2017).

To take on a more dynamic role and accountability, high-performing leaders must demonstrate competence, reflected in their experience, wisdom and ability to carry out tasks effectively. Effective leaders are leaders who have competence (Hollenback et al., 2006; Bass & Bass, 2008). Research also emphasizes that competence needs to be identified because it is the main basis for effective management. Therefore, to ensure organizational excellence, it is important that competent leaders are appointed to lead the organization (Hollenback et al., 2006).

NPQEL training ensures that high-performing emerging leaders possess ten educational leadership competencies categorized into four main domains, namely (1) Visionary; (2) Leading Change; (3) Organizational Excellence; and (4) Competent. The main competency in the Visionary domain is strategic thinking while the Leading Change domain includes the competencies of leading change, making decisions and solving problems. The Organizational Excellence domain consists of the competencies of leading learning, capacity building and building relationships and networks. Finally, the three main competencies in the Competent domain are effective communication, leadership and high personality. Armed with the ten competencies implemented in the 2018 version of the NPQEL training, aspiring leaders can realize the aspirations of the 2013-2025 PPPM as high-performance leaders to produce quality students and schools by complying with the set standards, namely the Malaysian School Principal Competency Standards (SKKSM), the Malaysian Education Quality Standards (SK@S), the Malaysian Teacher Standards (SGM) and the Principal and Headmaster Competency Standards (SKPGB).

Researchers believe that all of these competencies are very important and need to be mastered by a leader to become an excellent and respected leader. Therefore, adapting each competency in the formation of this inventory can help in assessing the level of leadership practices of school leaders. This article will present in more detail specifically the element of capacity

building. Capacity building in the context of this study can be interpreted as the ability of leaders to know, understand and identify staff capacity development programs to increase potential. Educational leaders need to be able to cultivate, strengthen, disseminate and be role models for staff capacity development programs to leaders of other organizations.

## **Objectives**

This study was conducted to develop an inventory of leadership practices to assess the applicability of the NPQEL 2.0 training module based on expert consensus. Therefore, this article was written to answer the research question, namely; Based on expert views, what elements are needed in capacity building among organizational leaders?

## **Research Methodology**

### **Study design**

This study aims to obtain expert validation for the capacity building element among leaders of educational organizations. This study uses a design and development research (DDR) approach. This study uses the DDR Phase 3 method, which is a usability assessment or Type 1 testing. This study evaluates the validity of the emerging leader training module (NPQEL 2.0) based on expert consensus. A quantitative approach is used in the data collection technique, which is using a questionnaire. Quantitative data analysis uses the Fuzzy Delphi Technique.

### **Respondent**

This study involved 17 experts. The experts selected had backgrounds or experience in fields related to the study being conducted. This was to support their opinions on the needs of the study and to be able to review their initial judgments to reach a consensus among the experts.

The selected expert respondents consisted of District Education Officers, Principals, Outstanding Principals, Headmasters, Senior School Assistants and Lecturers from the Aminuddin Baki Institute. All experts and users of this training module are from the states of Pahang, Terengganu and Perak.

### **Instrument**

This study employed a questionnaire adapted from the NPQEL 2.0 Assessment Competency Dictionary (2018). In this study, only 15 items from a questionnaire set for specific competencies on the capacity building element were tested for their validity in expert consensus.

### **Analysis methods**

The interpretation of the data in this study was based on analysis from the Fuzzy Delphi technique and calculation of mean scores and standard deviations. The Fuzzy Delphi technique was used to answer the research questions. The data was obtained and presented systematically using a Microsoft Excel spreadsheet. There are six steps followed by the use of the Fuzzy Delphi analysis template built by Mohd Ridhuan and Nurulrabihah (2020), namely:

**Step 1:** Data obtained from experts, K to determine the importance of the evaluation criteria for the variables to be measured using linguistic variables.

**Table 1.0 Seven point linguistic variable scale**

Linguistic variables	Fuzzy scale
Totally disagree	(0.0, 0.0, 0.1)
Strongly disagree	(0.0, 0.1, 0.3)
Don't agree	(0.1, 0.3, 0.5)
Simple agree	(0.3, 0.5, 0.7)
Agree	(0.5, 0.7, 0.9)
Strongly agree	(0.7, 0.9, 1.0)
Totally agree	(0.9, 1.0, 1.0)

This study uses the Fuzzy Delphi Technique with a 7-point Likert scale to obtain expert acceptance and agreement values. The use of a 7-point Likert scale compared to a 5-point scale is to reduce the ambiguity gap for each element studied and the use of a high Likert scale is able to provide precise and accurate answers (Mohd Ridhuan & Nurulrabihah, 2020).

**Step 2:** Convert all linguistic variables into triangular Fuzzy numbers. Suppose the fuzzy number  $r_{ij}$  is the variable for each criterion for experts K for  $i=1, \dots, m, j=1, \dots, n, k=1, \dots, k$  and  $r_{ij} = 1/K (r1_{ij} \pm r2_{ij} \pm rK_{ij})$ . The Fuzzy scale that includes linguistic variables shows 7 scales in the Fuzzy Delphi method.

**Step 3:** For each expert, use the *vertex method* to calculate the distance between the averages of  $r_{ij}$ . (Chen, 2000). The distance between two Fuzzy numbers or better known as the threshold value is calculated using the formula:

$$d(m,n) = \sqrt{\frac{1}{3} \left[ (m_1 - n_2)^2 + (m_2 - n_2)^2 + (m_3 - n_3)^2 \right]}$$

**Step 4:** If the distance between the average and the expert evaluation data is less than the threshold value 0.2, then all experts are considered to have reached consensus. If the percentage of reaching group consensus is more than 75% (Chu & Hwang, 2008), then go to Step 5.

**Step 5:** The calculation and determination of this *fuzzy evaluation process* is using the fuzzy score formula,

$$A_{max} = \frac{1}{4} (m_1 + 2m_2 + m_3).$$

**Step 6:** For each alternative option, the fuzzy evaluation is defuzzified with the formula:

$$a_i = \frac{1}{4} (a_{i1} + 2a_{i2} + a_{i3})$$

The ranking order of alternative choices can be determined according to the value of  $a_i$ . To ensure the acceptance of expert consensus, the following condition must be met where the  $\alpha$ -cut value obtained must be equal to or greater than 0.5 (Bodjanova, 2006).

## Results

The results of the analysis based on expert consensus to determine the 15 elements of Capacity Building are shown in Table 2.0. The findings show that the 15 elements were accepted as they complied with the three Fuzzy Delphi conditions, namely the *threshold value* was less than 0.2 (ranging from 0.018 to 0.225), the  $\alpha$ -cut value was greater than 0.5 (ranging from 0.852 to 0.960) and the expert agreement percentage value was greater than 75%.

The study findings show that all experts agree that the 15 elements of Capacity Building meet the requirements for assessing the leadership practices of organizational leaders. Therefore, all the elements presented are accepted by all experts to form a Capacity Building Dimension in the Leadership Practice Inventory.

**Table 2.0 Analysis results based on expert consensus**

No.	Items / Elements	Terms of <i>Triangular Fuzzy Numbers</i>		Conditions of <i>Fuzzy Evaluation Process</i>				Expert Agreement
		Threshold Value, d	Expert Group Agreement Percentage, %	m1	m2	m3	Score Fuzzy (A)	
1	State a capacity development program based on needs analysis	0.018	100.0%	0.888	0.994	1.000	0.960	ACCEPT
2	Implement information-based staff capacity development programs	0.018	100.00%	0.888	0.994	1.000	0.960	ACCEPT
3	Identify actions in efforts to develop staff capacity	0.034	100.00%	0.875	0.988	1.000	0.954	ACCEPT
4	Identify information-based staff capacity development programs	0.034	100.00%	0.875	0.988	1.000	0.954	ACCEPT
5	Plan actions in an effort to develop staff capacity	0.048	100.00%	0.863	0.981	1.000	0.948	ACCEPT
6	Demonstrate actions in efforts to continuously develop staff capacity	0.078	94.12%	0.838	0.963	0.994	0.931	ACCEPT
7	Know how to evaluate capacity development programs to increase potential	0.102	94.1%	0.838	0.956	0.981	0.925	ACCEPT
8	Evaluate capacity development programs to enhance potential	0.086	94.12%	0.825	0.956	0.994	0.925	ACCEPT
9	Knowing efforts to develop staff capacity	0.108	94.1%	0.825	0.950	0.981	0.919	ACCEPT
10	Identify ways to evaluate capacity development programs to enhance potential	0.132	88.24%	0.813	0.938	0.975	0.908	ACCEPT
11	Cultivate a continuous information-based staff capacity development program	0.132	88.24%	0.813	0.938	0.975	0.908	ACCEPT

12	Disseminate information-based staff capacity development programs to leaders of other organizations	0.177	94.12%	0.775	0.906	0.963	0.881	ACCEPT
13	Be a role model in evaluating capacity development programs for leaders of other organizations	0.177	94.12%	0.775	0.906	0.963	0.881	ACCEPT
14	Practice capacity development program evaluation to continuously improve potential	0.158	94.12%	0.763	0.906	0.969	0.879	ACCEPT
15	Strengthening staff capacity development actions for leaders of other organizations	0.225	88.24%	0.738	0.875	0.944	0.852	ACCEPT

This analysis shows that all items presented are valid and appropriate for use in developing or evaluating staff capacity development programs. This indicates a broad consensus among experts that these elements are important in planning, implementing, and evaluating staff capacity development efforts.

Based on the expert consensus analysis in the table, all items achieved an agreement percentage above 75% that meets the minimum requirement in the Fuzzy Delphi Method. 5 out of 15 items recorded 100% agreement, indicating unanimous consensus among the experts. Overall, the analysis confirms that all 15 items are valid and relevant for use in developing or assessing staff capacity-building programs.

### Discussion and Conclusion

Based on expert consensus using the Fuzzy Delphi technique, the researcher identified 15 elements that achieved group consensus with a consensus value of 100%. The values translated in Table 2.0 show that the analysis results comply with the conditions of an  $\alpha$ -cut value exceeding 0.5 (Bodjanova, 2006; Tang & Wu, 2010). This reflects strong and consistent expert agreement, particularly in planning, implementation, assessment, and expanding capacity development efforts across leadership levels within organizations.

These elements are as follows:

- Identify information-based staff capacity development programs.
- Plan actions in an effort to develop staff capacity.
- Demonstrate actions in efforts to continuously develop staff capacity.
- Know how to evaluate capacity development programs to increase potential.
- Evaluate capacity development programs to enhance potential.
- Knowing efforts to develop staff capacity.
- Identify ways to evaluate capacity development programs to enhance potential.
- Cultivate a continuous information-based staff capacity development program.
- Disseminate information-based staff capacity development programs to leaders of other organizations.
- Be a role model in evaluating capacity development programs for leaders of other organizations.
- Practice capacity development program evaluation to continuously improve potential.
- Strengthening staff capacity development actions for leaders of other organizations.
- Identify information-based staff capacity development programs.
- Plan actions in an effort to develop staff capacity.
- Demonstrate actions in efforts to continuously develop staff capacity.

Based on the analysis, researchers see that all 15 elements must be present in the capacity development of educational organization staff. Roselena Mansor and Mohd Izham Mohd Hamzah (2015) emphasized that effective educational leaders need to have competencies in various aspects, including strategic leadership, human resource management, and change management. Their study showed that competent leaders can manage their organizations effectively, which is a major contributor to the excellence of educational organizations.

A study by Pashmforoosh et al. (2023) highlighted the importance of communities of practice in developing the capacity of educational leaders, especially in rural areas. Through interaction in this community, educational leaders can learn from each other, reduce feelings of isolation, and increase self-efficacy.

According to a study by Pashmforoosh et al. (2023), the development of school leaders' capacity in the aspect of instructional leadership requires a structured and continuous approach. This includes professional training that focuses on improving the quality of teaching and learning, as well as support in data-based decision-making. This is confirmed by Foniza (2019) in her research that strategic human resource development can ensure that the competence and productivity of employees in an organization is always at a high level.

Dimmock (2011) in his book "Leadership, Capacity Building and School Improvement" emphasizes the concept of distributed leadership as a strategy to build leadership capacity at all levels in school organizations. This approach allows for shared leadership responsibilities, which in turn increases effectiveness and innovation in school management.

Van Thong et al. (2023) emphasize that higher education institutions play a critical role in building the capacity of educational leaders through leadership development programs that are based on best practices and current research. They recommend the use of a tested leadership development framework such as that proposed by Kouzes and Posner in "The Leadership Challenge".

Developing the capacity of educational leaders requires a holistic approach, involving multidimensional competency development, collaborative learning through communities of practice, ongoing professional training, distributed leadership practices, and support from higher education institutions. These approaches are consistent with the findings of the analysis obtained, indicating the need for an integrated strategy in developing effective educational leadership.

## **Recommendation**

Sustainable leadership practices involve several key elements such as prioritizing long-term goals, creating successor leaders, and effectively distributing leadership. Leaders who succeed in this practice are not only able to inspire and motivate their teams, but are also able to encourage innovation, provide appreciation and recognition, and develop the potential of each individual in the organization. Thus, sustainable leadership is not only about leading for today, but also preparing the organization for the future.

This study has enabled the Leadership Practice Inventory developed to receive expert validation in identifying the Level of Capacity Building Leadership Practices among organizational leaders. Therefore, the Leadership Practice Inventory involving elements of capacity building levels can be administered to organizational leaders other than schools in



further studies. The implications of the study suggest that these practices be implemented by organizational leaders to form successful learning organizations.

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# THE EFFECTIVENESS OF A SCHOOL LEADERSHIP-INITIATED SUPPORT PROGRAM ON STUDENT ACADEMIC ACHIEVEMENT AND MOTIVATION

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**Abstract:** *The purpose of this study was to examine the effectiveness of a school leadership-initiated support program aimed at improving student academic achievement and motivation. The program, led by the school leadership team, delivers motivational talks between classes and free meal cards for students demonstrating positive values or with low attendance and academic performance, particularly SPM candidates, to boost their school's attendance. This initiative combined emotional encouragement with practical assistance such as meal cards to address students' academic and socio-emotional needs. A qualitative research design was adopted using semi-structured interviews with all participating students to explore their perceptions of the program's impact on attendance, motivation, study habits and academic engagement. To ensure credibility, data triangulation was applied by cross-checking interview findings with school attendance records and teachers' academic progress reports. Thematic analysis was used to identify key themes and recurring patterns. Results indicated that most students viewed the program as a motivating factor, reporting greater commitment to learning, improved attendance and stronger engagement during lessons. Many expressed feeling valued and supported by school leaders, which boosted their confidence and willingness to improve academically. The program also encouraged positive behaviour, contributing to a more supportive school environment. This study concludes that leadership-driven programs integrating motivational strategies with tangible rewards can significantly influence attendance, student motivation and academic performance. Effective leaders play a crucial role in creating positive learning environments and implementing initiatives that meet students' holistic needs, ultimately supporting sustainable academic improvement.*

*Keywords: School Leadership, Student Motivation, Academic Achievement, Support Programs.*

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## 1. Introduction

In Malaysia, school leadership is recognised as a critical determinant of student success influencing both academic achievement and motivation. The Malaysia Education Blueprint 2013–2025 emphasises that effective leaders transcend administrative duties to act as

instructional leaders and catalysts for change (*Kementerian Pendidikan Malaysia, 2025*). It is a vision further reinforced by *KOMPAS 2.0 (Kompetensi Pemimpin Sekolah 2.0 [School Leadership Competency 2.0])*, which outlines five leadership domains and 18 competencies. This framework builds on earlier standards, such as the *SKKSM (Standard Kompetensi Kepengetuaan Sekolah Malaysia [Malaysian School Leadership Competency Standard])*, introduced in 2006 and is complemented by the then *SKPMg2 (Standard Kualiti Pendidikan Malaysia Gelombang 2 [Malaysian Education Quality Standard 2<sup>nd</sup> Wave])* particularly Standard 4 (*Aspek 4.4*), which highlights the importance of motivating students through praise, recognition and tangible rewards. Effective leadership also entails translating national policies into meaningful practices at the school level (Ationg, Esa, Othman, Mohd Shah, Yusoff, Ramlie & Mokhtar, 2021). For instance, *Surat Pekeliling Ikhtisas Bilangan 1 Tahun 2019: Panduan Pengurusan Rekod Sistem Kehadiran Murid di Sekolah* mandates systematic attendance management through the *eKehadiran/IDME* system. A visionary leader can leverage this data as an early warning tool to identify disengaged students and design targeted interventions (Kyriakides, Panayiotis & Dimosthenous, 2021). In alignment with these leadership competencies and policy orders, the school leaders in this study implemented a support program that integrated motivational talks with a complementary initiative providing free meal cards to students who demonstrated positive values or faced challenges in attendance and academic performance. This reflects the role of school leaders in harmonizing policy frameworks (Mosbiran, Mustafa, Razzaq, Ahad & Nordin, 2020) leadership standards and practical strategies to foster sustainable academic improvement.

## 2. Problem Statement

Poor student attendance has become a persistent challenge in many schools (Samsuddin, Ghani & Muhith, 2023) It directly affecting academic achievement, engagement and overall school performance. Furthermore, chronic absenteeism often leads to learning gaps, reduced participation in classroom activities and lower examination results. Despite various interventions, many school leaders continue to struggle with identifying at-risk students early and responding effectively. The then **APDM (*Aplikasi Pangkalan Data Murid*)**, now IDME (Identity management), provides real-time attendance data, offering an opportunity for school leaders to monitor patterns, identify students with frequent absences and take targeted actions. However, without systematic use and follow-up, this valuable data often remains underutilized and limiting its potential to improve attendance and student outcomes.

## 3. Objectives

- 1.To identify the relationship between attendance rates and English language academic performance (PBD)
- 2.To explore the perceptions of students regarding the motivational talks and reward-based initiatives introduced by the school leadership team.

## 4. Methodology

### *Research design*

This study uses a qualitative case-study design to gain an in-depth understanding of how a school leadership-initiated support program influences student motivation, attendance and academic achievement. The case study approach enables a holistic examination of participant perceptions and leadership practices within their real-life context (Creswell, 2023).

***Participants***

Purposive sampling of 9 students targeted by the program (SPM candidates with poor attendance records), 5 school leaders involved in program design/implementation and 2 counsellors involved in follow-up interventions.

***Data collection methods***

Multiple qualitative methods are used for depth and triangulation:

- i. **Semi-structured interviews** which involve individual interviews with students, leaders and counsellors (30–60 minutes). The interview topics will involve perceptions of motivational talks; experience of the meal-card initiative; perceived changes in attendance, motivation and study habits.
- ii. Review relevant documents such as attendance reports, teachers' academic progress reports, program implementation notes, minutes of leadership meetings, programme flyers/communication to parents. Use documents to corroborate interview data and illustrate processes.

***Data triangulation***

Audio record interviews (with consent), transcribe verbatim, Store transcripts, field notes and documents securely (password-protected) are taken to triangulate interview findings with attendance records and teachers' reports to strengthen credibility.

***Data analysis***

In this study, the use of **thematic analysis** (Braun & Clarke style) is employed. Coding can be manual or aided by qualitative software (NVivo). After that, researchers develop a codebook to use double-coding (second coder or peer review) on a sample of transcripts to improve reliability.

***Trustworthiness***

**For credibility in this study**, data triangulation (interviews, observations, documents), member checking (participants review summary findings) is done. To enhance the credibility and trustworthiness of the study, data triangulation was applied by comparing information from three sources: (i) semi-structured interviews with students, (ii) official school attendance records, and (iii) teacher observation notes. This approach allowed the researchers to validate recurring patterns across data sets and confirm emerging themes. For example, self-reported improvements in motivation and attendance during interviews were cross-checked with documented increases in attendance rates and teacher observations of greater classroom participation.

### *Procedure/timeline*

**Table 1: Timeline**

Step	Procedure	Duration
1	Secure approvals and school access	2–4 weeks
2	Preliminary document review (IDME snapshots) and schedule interviews	1 week
3	Data collection: interviews, observations, focus group	3–4 weeks
4	Transcription and initial coding	2–3 weeks
5	Thematic analysis and member checking	3 weeks
6	Write up findings	4 weeks

### *Limitations*

This study is a single-case study, therefore limits generalisability and findings are context-bound.

## **5. Findings**

### Objective 1: Relationship Between Attendance Rates and English Language Academic Performance

Analysis of attendance records alongside teachers' academic progress reports indicated a positive association between consistent school attendance and improved academic performance among the targeted students. Participants who reported higher motivation to attend school after the program and whose attendance records reflected this change. They also demonstrated either maintenance or improvement in their examination and classroom assessment results.

For instance, students with post-program attendance rates above 90% were noted in teacher progress reports as being more engaged in lessons, completing assignments on time, and achieving higher scores in midterm examinations compared to their pre-program performance. On the contrary, participants whose attendance showed only marginal improvement tended to record minimal academic progress, with teachers citing missed instructional time as a contributing factor.

These patterns suggest that while the program's motivational and incentive components directly supported attendance, the academic benefits were most evident among students who sustained regular attendance over an extended period. Teacher observations reinforced this connection, highlighting that students with consistent presence were better able to follow lesson sequences, participate in group activities, and retain content knowledge.

**Table 2: Relationship Between Attendance Rate and English Language PBD Scores**

Participant	Attendance Rate (%)	Pre-Program Score (%)	Post-Program Score (%)	Score Change
P1	78	68	74	+6
P2	72	72	76	+4
P3	68	65	70	+5
P4	76	70	73	+3
P5	70	74	75	+1
P6	65	69	91	+2
P7	74	66	68	+2
P8	60	71	72	+1
P9	79	64	70	+6

Table 2 presents the relationship between student attendance and English Language PBD Scores before and after the leadership-initiated support program (until August). Overall, the data show that most participants experienced an improvement in their academic scores following the intervention, with score changes ranging from +1 to +6 percentage points. For example, P1, who recorded a relatively high attendance rate of 78%, improved by +6 points, while P9, with the highest attendance rate of 79%, also showed one of the strongest improvements (+6 points). Conversely, students with lower attendance, such as P8 (60%), still recorded a positive gain (+1 point), but the improvement was less pronounced.

Interestingly, the findings suggest that while attendance rate appears to influence academic performance, the relationship is not strictly linear. For instance, P6, with one of the lowest attendance rates (65%), achieved only a marginal improvement (+2 points), whereas P3, with a slightly higher attendance (68%), recorded a stronger improvement (+5 points). This indicates that although consistent attendance is generally associated with better outcomes, other factors such as motivation, engagement in class, and individual learning strategies may also have played a role in shaping student performance.

Overall, the results highlight that the support program had a positive impact on students' academic achievement regardless of their initial attendance level, though students with stronger attendance tended to demonstrate greater academic gains. This reinforces the importance of initiatives that address both academic and socio-emotional needs, ensuring that even students with attendance challenges can benefit from targeted support.

**Table 3: Attendance Rates (%) and Pattern Types**

Participant	April (%)	May (%)	June (%)	July (%)	August (%)	Pattern Type
P1	100	58	83	83	69	Fluctuating: started high, dropped, then recovered moderately
P2	100	79	72	72	39	Declining: began at 100% but steadily decreased to very low (39%)
P3	100	58	56	72	69	Fluctuating: sharp drop, slight recovery, still unstable
P4	80	53	83	50	46	Highly Fluctuating: big ups and downs, with both very good (83%) and very poor (46%) months
P5	80	53	50	67	62	Declining then Gradual Recovery: dropped badly (50%), then slowly improved to 62%
P6	50	32	56	61	62	Gradual Improvement from Low Base: very low (32%) but consistently improved to 62%
P7	90	79	78	89	100	Consistently High / Improving: always high, reached 100%
P8	90	74	83	89	85	Generally High with Minor Fluctuations: mostly strong attendance, with small ups and downs (74–89%)
P9	90	74	83	83	85	Generally High with Slight Decline: overall strong, but slight drop toward the end (70%)

The attendance analysis of nine participants in Table 3 reveals distinct patterns that reflect both strengths and challenges in student engagement. Three participants (P7, P8, P9) demonstrated consistently high attendance, maintaining levels above 74% across the months, with P7 even

achieving 100% attendance in August. This group shows strong commitment to schooling and is less likely to require intensive attendance interventions, though sustaining motivation remains essential. On the contrary, several participants exhibited fluctuating attendance patterns. For instance, P1 and P3 started at a perfect 100% but experienced significant drops before showing partial recovery. P4 displayed highly inconsistent attendance, ranging from a strong 83% to a low 46%, reflecting irregular school engagement possibly influenced by external or personal factors. Such fluctuation indicates that while these students are capable of high attendance, they may require continuous monitoring and tailored support to maintain consistency.

Two participants (P2 and P5) followed a declining trajectory, where attendance progressively worsened over time. P2 in particular showed a sharp decline from 100% in April to only 39% in August, suggesting serious disengagement or external challenges affecting school participation. Without timely intervention, such downward trends may negatively impact academic performance and overall well-being. Finally, P6 represents a gradual improvement pattern, beginning at a critically low 32% in May but steadily rising to 62% by August. While the overall rate is still below the desired standard, the upward trend indicates potential responsiveness to support measures. This highlights the importance of sustained encouragement and reinforcement to help students maintain their progress.

**Table 4: The perceptions of students regarding the motivational talks and reward-based initiatives introduced by the school leadership team.**

Theme	Subtheme	Example Verbatim
1. Attendance Challenges Before the Program	1.1 Lack of motivation to attend school	“Before this, sometimes I didn’t come to school because I felt lazy and saw no reason to attend.” (P1); “I used to skip school a lot because I felt bored.” (P2); “I didn’t care if I didn’t attend, it felt normal to me.” (P9)
	1.2 Personal and family factors	“I often skipped school to take care of my younger sibling at home.” (P7); “I rarely came to school if I felt slightly unwell.” (P4); “My attendance was low because I often woke up late.” (P3)
	1.3 Peer influence	“Sometimes I followed my friends to skip school.” (P6)
2. Positive Changes After the Program	2.1 Increased motivation and school engagement	“Now I feel more motivated to attend.” (P1); “I feel happy because there are incentives.” (P5); “I feel responsible to attend.” (P6)
	2.2 Feeling valued and supported	“I feel the school cares more about students.” (P7); “I feel appreciated when I receive rewards.” (P3); “Teachers often give words of encouragement.” (P4)
	2.3 Consistent improvement in attendance	“My attendance improved after this program.” (P2); “I enjoy coming because my friends also attend.” (P8); “I feel more positive about school.” (P9)
3. Key Drivers of Sustained Attendance	3.1 Social support	“Support from teachers and friends.” (P1); “Encouragement from parents.” (P5); “Friends invite me to come to school.” (P6)
	3.2 Incentives and recognition	“The meal card reward.” (P2); “Helps my family financially.” (P4); “Makes me feel appreciated.” (P1); “Gives me extra spirit to attend.” (P7)
	3.3 Academic awareness and future aspirations	“Awareness about the importance of education.” (P4); “I feel it’s a waste if I skip school.” (P8); “I want to achieve good exam results.” (P9)

*Translated from Bahasa Melayu*

Objective 2: The perceptions of students regarding the motivational talks and reward-based initiatives introduced by the school leadership team.



### *Theme 1: Attendance Challenges Before the Program*

Students described a range of personal, family and social factors contributing to poor attendance before the program. Several reported a lack of motivation or interest in attending school, while others cited home responsibilities, illness or peer influence. For example, one participant shared, “I often skipped school to take care of my younger sibling at home” (P7), while another admitted, “Sometimes I followed my friends to skip school” (P6). These accounts are aligned with teacher observation notes, which documented repeated absences for some students linked to family obligations and peer influence. Attendance records before the program revealed inconsistent attendance patterns among participants, corroborating the interview report.

### *Theme 2: Positive Changes After the Program*

Following the motivational sessions and the introduction of meal card incentives, students reported increased motivation and a stronger commitment to attending school. Comments included, “Now I feel more motivated to attend” (P1) and “I feel the school cares more about students” (P7). This self-reported improvement was corroborated by official attendance records, which indicated a 15–20% increase in daily attendance during the program period. Teacher observation logs also reflected fewer absenteeism incidents and greater classroom participation, reinforcing the reported positive shift.

### *Theme 3: Key Drivers of Sustained Attendance*

Students identified social support, incentives, and academic goals as key motivators for continued attendance. One student noted, “Support from teachers and friends” (P1), while another said, “I want to achieve good exam results” (P9). Teacher records confirmed that students who spoke about peer encouragement and academic aspirations also demonstrated consistent attendance during the term. In addition, the meal card incentive was noted in teacher feedback forms as both a practical aid and a form of recognition, matching the participants’ descriptions.

To strengthen the credibility of the findings, triangulation was applied by systematically comparing interview narratives with attendance records, teacher progress notes and observation data. Across all three themes, triangulation strengthened the credibility of the findings by confirming that the patterns reported in interviews were evident in both attendance data and teacher observation records. This convergence reduces the likelihood that the results reflect isolated perceptions or recall bias.

**Table 5: Triangulation of Findings Across Data Sources**

<b>Theme / Key Claim</b>	<b>Student Interviews</b>	<b>Attendance Records (IDME)</b>	<b>Teacher Progress Notes</b>	<b>Observations</b>	<b>Convergence</b>
Improved attendance after the program	“Now I feel more motivated to attend.” (P1, P2)	Most participants showed a +10–20% increase	Teachers noted fewer absences and more consistent task submission	Observed a high presence at motivational talks	Convergent
Increased motivation & engagement	“I participate more in	Attendance stability reflected	Teachers reported more active participation	Students are attentive during sessions	Convergent

	class now.” (P4, P6)	sustained presence			
Positive impact of incentives (meal cards)	“Helps my family and makes me attend.” (P2, P4)	Attendance spikes on reward weeks	Teachers observed higher morale and improved discipline	Reward distribution created excitement	Convergent
Feeling valued and supported	“I feel the school cares more about us.” (P7)	Reflected in fewer unexplained absences	Teacher notes highlighted more respectful behaviour	Leaders encouraged talks	Partial
Limited change for some students	“I still find it hard to come.” (P8)	Marginal increase (+2%)	Teachers reported minimal academic improvement	Absent from one observed talk	Discrepant

## 6. Discussion

The findings of this study highlight the critical role of school leadership in shaping student outcomes through targeted support programs. The integration of motivational talks and reward-based initiatives, particularly the provision of meal cards was associated with measurable improvements in both attendance and academic performance, specifically in English Language PBD scores. These results confirm that leadership-initiated interventions can directly influence students’ engagement, while also addressing socio-emotional barriers that contribute to absenteeism.

### *Attendance and Academic Achievement*

The analysis of attendance and performance (Table 1) demonstrates that students with higher attendance rates generally achieved stronger academic gains, with P1 and P9 recording the highest improvements (+6 points each). This aligns with existing literature that associates consistent attendance with greater learning opportunities and academic achievement. The literature that supports this finding are from Heli (2021), Poortman, Brown, and Schildkamp (2022) and Basaruddin (2021). However, the relationship was not strictly linear. For instance, P6, with relatively low attendance, made only a marginal improvement (+2), while P3, despite fluctuating attendance, recorded a more substantial gain (+5). This suggests that while attendance is a necessary condition for academic success, it must be complemented by factors such as motivation, classroom participation, and effective teaching strategies.

### *Attendance Patterns and Student Engagement*

Attendance patterns across months (Table 2) revealed three distinct groups: consistently high attenders (P7–P9), fluctuating attenders (P1, P3, P4), and declining or low attenders (P2, P5, P6). Students in the consistently high group showed steady progress, confirming that regular presence in school supports sustained learning. These findings are aligned with Adams, Moosa, Shareefa, Mohamed, and Tan (2024), Azar, Ali Sorayyaei, Adnan, Emma Juliana (2020) and Heck and Reid (2020). In contrast, fluctuating students demonstrated the capacity for improvement but required continuous monitoring to maintain stability. Declining students, particularly P2, highlight the risk of disengagement despite leadership interventions. This suggests that leadership strategies must not only motivate students but also provide individualized responses to those facing persistent attendance challenges.

### *Student Perceptions of the Program*

The qualitative findings (Table 3) provide valuable insight into the mechanisms behind the observed improvements. Students reported that motivational talks increased their sense of responsibility, while rewards such as meal cards addressed financial and emotional needs. These findings supported by Tedla and Kilango (2022), Tran and Nghia (2020) and Sims and Fletcher-Wood (2021). Most importantly, students expressed feeling valued and supported, which is consistent with leadership frameworks such as KOMPAS 2.0, which emphasize the role of school leaders in motivating students through recognition and encouragement. These findings illustrate how leadership-driven programs can align policy expectations with school-level practices to foster student commitment.

### *Triangulation of Findings*

The triangulated evidence (Table 4) confirmed the credibility of these findings. Improved attendance and engagement were consistently reflected across interviews, IDME records, teacher progress notes, and observations. The strong convergence in most themes validates the effectiveness of the program. At the same time, the presence of discrepant cases, such as students who continued to struggle despite interventions, highlights the complexity of student engagement. This underscores the need for flexible, differentiated strategies that accommodate diverse student circumstances. It is consistent by the findings from another researcher such as Siahaan, Aswaruddin, Maulidayan, Zaki, Sari, and Rahman (2023) and Benoliel (2021).

### *Implications for School Leadership*

Overall, this study reinforces the notion that effective school leadership extends beyond administrative functions to include the creation of a positive and supportive learning environment. By leveraging attendance data proactively and integrating motivational and practical interventions, school leaders can directly influence both attendance and academic outcomes. The findings also suggest that leadership programs should remain adaptable, combining recognition and incentives with long-term strategies that build intrinsic motivation and academic resilience. Other researchers such as Marshall, Roache and Moody-Marshall, (2020), Candrasari, Yorman, Mayasari, Yulia, and Lake (2023) and Salleh (2023) agreed with these findings in their research.

## **7. Conclusion**

This study demonstrates that leadership-initiated support programs that combine motivational strategies with tangible rewards can meaningfully improve student attendance, motivation and academic engagement. Through triangulated evidence from interviews, attendance records, teacher progress notes and observation data, the findings confirm that the majority of participants not only improved their school attendance but also displayed greater confidence, responsibility and commitment to learning. The initiative of providing motivational talks alongside free meal cards addressed both the socio-emotional and practical needs of students, reflecting the importance of holistic interventions.

Importantly, the role of school leaders was central in designing and sustaining this program. Their proactive use of attendance data, coupled with motivational strategies created a supportive school culture that encouraged students to feel valued and capable of improvement.

However, the presence of a few discrepant cases highlights that such programs must be flexible and responsive to diverse student needs.

In conclusion, effective leadership-driven programs that integrate encouragement with practical assistance have the potential to foster sustained improvements in student outcomes. The study contributes to the growing evidence that strong school leadership is not only administrative but also deeply instructional and transformational and capable of shaping a positive school environment where students can thrive academically and personally.

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# CREATING SPACES FOR INNOVATION: A SYSTEMATIC LITERATURE REVIEW ON ORGANIZATIONAL AND ENVIRONMENTAL ENABLERS OF INNOVATIVE WORK BEHAVIOR AMONG TEACHERS

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**Abstract:** *Understanding how organizational and environmental conditions foster teachers' innovative work behavior (IWB) is critical in an era where education is expected to drive transformation and creativity. This systematic literature review (SLR) analyzed 20 peer-reviewed studies published between 2020 and 2024, identified using the PRISMA protocol from Scopus and Web of Science databases. The synthesis revealed four overarching themes underpinning IWB: (1) collaborative engagement, (2) infrastructure and resource accessibility, (3) empowering work environments, and (4) motivation and professional development. These themes show that innovation is nurtured when schools are resourced equitably, structured for collaboration, and embedded in cultures that respect teacher agency and professional growth. At the factor level, four conditions were consistently influential: (1) innovation climate, (2) professional collaboration, (3) professional learning communities (PLCs), and (4) school climate. These conditions highlight that organizational supports are actively shaped by leadership and management practices that structure collaboration, allocate resources, and sustain professional learning. By framing these enablers through an educational leadership and management lens, this review contributes to both scholarship and practice by clarifying how values-driven leadership decisions create the organizational architecture that empowers teachers to innovate. The findings provide practical guidance for policymakers, school leaders, and researchers committed to building innovation-enabling schools and advancing educational transformation.*

*Keywords: Innovative Work Behavior, Professional Collaboration, Innovation Climate, Educational Leadership and Management, Systematic Literature Review*

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## 1. Introduction

Innovation in education has become a global imperative, positioning teachers as frontline agents of change who translate reforms into meaningful classroom practices. Teachers' innovative work behavior (IWB), which includes opportunity exploration, idea generation, idea promotion, and idea realization, plays a central role in improvement by identifying needs, creating solutions, and ensuring implementation (De Jong & Den Hartog, 2010; Gkontelos et al., 2022). In rapidly evolving contexts, IWB is not only an individual trait but a systemic necessity for cultivating resilience, creativity, and long-term transformation.

While research has offered insights into psychological and leadership influences on IWB, organizational and environmental enablers remain less systematically examined. Anderson and West (1998) team climate for innovation model demonstrated that climate and collaboration matter, yet many studies still emphasize individual or leadership factors over contextual conditions such as school culture, networks, and innovation climate. This imbalance limits

theory and constrains leaders who need evidence-based strategies to design innovation-enabling environments.

From an educational leadership and management (ELM) perspective, these gaps are critical. Leadership determines how collaboration is structured, how resources are allocated, and how professional learning is institutionalized. In centralized systems like Malaysia's, leaders at school and policy levels operationalize reforms by shaping climates, establishing priorities, and coordinating professional learning communities (PLCs). Synthesizing organizational and environmental enablers of IWB therefore extends scholarship while offering actionable guidance for leadership and management practices.

**Table 1. Prior Reviews of Teacher Innovative Work Behavior (2015–2024)**

No.	Author(s), Year	Aim of Study	Key Findings	Timeframe	Limitations / Gap
1	Thurlings et al. (2015)	To develop a preliminary model of factors that enhance teacher IWB	Identified self-efficacy, individual, social, and environmental factors; proposed conceptual model	1990–2013	Conceptual synthesis, lacked PRISMA rigor, no systematic inclusion criteria
2	Zainal and Matore (2019)	To identify factors influencing teachers' IWB	Leadership and self-efficacy identified as dominant drivers of IWB	2010–2019	Stopped at 2019, narrow focus on leadership/psychology, organizational context underexplored
3	Bawuro et al. (2020)	To explore motivational mechanisms influencing teacher IWB	Found intrinsic motivation, creative self-efficacy, and prosocial motivation significant	2009–2019	Emphasis on individual motivation, organizational enablers not addressed
4	Olvera-Fernández et al. (2023)	SLR on pedagogical innovation in music education	Identified disruption shaped by learning purpose, teacher–student relationships, and ICT-driven practices	2017–2021	Discipline-specific (music), Eurocentric, limited generalizability to teacher IWB
5	Liu et al. (2024)	To review definitions, methods, and theories of teacher innovation	Revealed fragmentation, inconsistent definitions, reliance on cross-sectional surveys; proposed structured framework	1971–2023	Broad scope (teacher innovation broadly defined), no focus on IWB in schools/in-service teachers

To situate this study, Table 1 summarizes prior review papers on teacher IWB. Earlier reviews either adopted broad conceptual approaches, emphasized leadership and psychology, or examined disciplinary contexts in isolation. None consolidated evidence on organizational and environmental enablers. Addressing this gap, the present systematic literature review (SLR) synthesizes studies published between 2020 and 2024, focusing on school-based contexts. The review follows the PICo framework, which stands for Population, Interest, and Context (Lockwood et al., 2015). Here, the population is in-service teachers, the interest is IWB, and the context is organizational and environmental enablers. Guided by this framework, the review is driven by one overarching question: *What organizational and environmental enablers shape teachers' IWB, and how have these been investigated in recent educational research, particularly in relation to practices of educational leadership and management?*

## 2. Research Methodology

This review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework, a globally recognized standard for enhancing the transparency and rigor of systematic reviews (Moher et al., 2009; Page et al., 2021). PRISMA outlines four sequential phases, identification, screening, eligibility, and inclusion. By following this protocol, the review ensured transparency and replicability, allowing readers to trace the selection process from the initial search to the final set of studies (see Figure 1).

### 2.1 Identification

The review began by selecting keywords grounded in theoretical constructs and prior IWB research, “*innovative work behavior*”, “*innovative behavior*”, “*innovativeness*”, and “*teacher*”. To strengthen validity, terms were refined through consultation with two educational management lecturers and a School Improvement Specialist Coach (SISC+). Boolean operators, truncation, phrase searching, and field codes were applied to expand coverage. Searches were conducted in Scopus and Web of Science (WoS), both recognized for their breadth in indexing peer-reviewed educational research. The final search strings are shown in Table 2. The process yielded 433 records in total (278 from Scopus, 155 from WoS), which proceeded to screening.

**Table 2: The Searching Strings**

Database	Search String
Scopus	TITLE-ABS-KEY ( ( "innovati* behavio*r" OR "innovati* work behavio*r*" OR "innovati* practice*" OR innovativeness ) AND ( teacher* ) AND NOT ( "higher education" OR universit* OR college* OR lecturer* OR "preservice teacher*" ) ) <b>Access date: Jun 2024</b>
Web of Sciences	ALL= ( ( ( "innovati* behavio*r" OR "innovati* work behavio*r*" OR "innovati* practice*" OR innovativeness ) AND ( teacher* ) NOT ( "higher education" OR universit* OR college* OR lecturer* OR "preservice teacher*" ) ) ) <b>Access date: Jun 2024</b>

### Screening

Screening was conducted in two stages. First, inclusion and exclusion criteria were applied, non-English papers, conference proceedings, books, reviews, “in press” articles, and studies published prior to 2020 were excluded (see Table 3). Second, duplicates (n=30) were removed. This resulted in 155 articles advancing to the eligibility stage.

**Table 3: The Selection Criterion in Searching**

Criterion	Inclusion	Exclusion
Literature Type	Journal (Article)	Conference, book, review
Publication stage	Final	In press
Language	English	Non-English
Time line	2020 – 2024	< 2020

### Eligibility

Full-text screening ensured alignment with review objectives. Articles were excluded if the full text was unavailable, if they were outside the education field, if titles were unrelated to IWB,



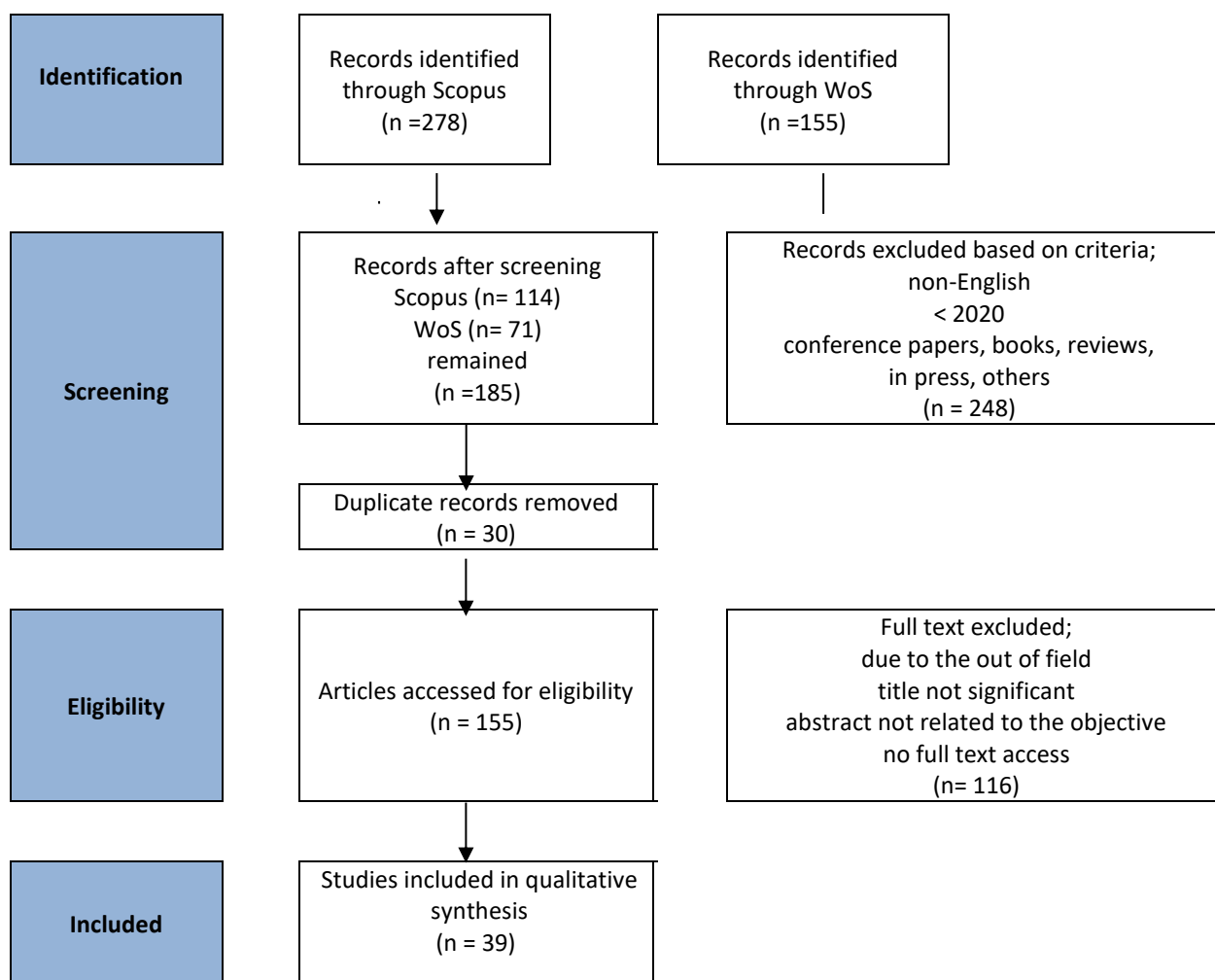
or if abstracts did not match the study's aims. This process produced 39 relevant studies. When refined to organizational and environmental enablers of IWB, 20 studies were retained. Although education reviews often synthesize 25–40 studies (Robinson & Lowe, 2015), methodological scholars emphasize that rigor and focus outweigh quantity (Booth et al., 2016; Petticrew & Roberts, 2006). With its targeted scope, the final set of 20 articles is methodologically sufficient for systematic synthesis.

### **Quality Appraisal**

Quality appraisal used the six-criteria framework of Abouzahra et al. (2020), clarity of purpose, usefulness, methodological clarity, definition of concepts, comparison with similar works, and acknowledgment of limitations. Articles were scored on a three-point scale (Yes = 1, Partly = 0.5, No = 0). Studies scoring at least 3.0 were retained. All 39 studies met this threshold and were included in the synthesis.

### **Final Inclusion**

For this review, the focus was narrowed to organizational and environmental enablers. From the full set of 39 articles, 20 studies explicitly addressing organizational and environmental conditions were extracted for in-depth analysis. This refined sample provides a robust yet targeted evidence base, capturing both Asian and Western contexts between 2020 and 2024.

**Figure 1: Flow Diagram of The Proposed Searching Study**

Note. Adapted from PRISMA guidelines (Moher et al., 2009; Page et al., 2021)

### Data Extraction and Analysis

An Excel matrix was used to extract author(s), year, country or context, methodology, theoretical basis, and organizational or environmental enablers of IWB. Extraction was conducted by the first author and verified by the co-author. Thematic synthesis followed Braun dan Clarke (2006) six-phase framework, adopting a deductive approach informed by Social Cognitive Theory (Bandura, 1986). This provided a coherent structure for linking extracted factors to broader cognitive and contextual mechanisms. ChatGPT was used as an assistive tool to support coding and theme organization. Prior studies highlight the potential of large language models for enhancing efficiency while maintaining rigor when applied transparently and under researcher oversight (Naeem et al., 2023; Zhang et al., 2024). In this review, AI supported preliminary coding and clustering, while final interpretation and validation remained with the authors. This hybrid approach balanced efficiency with scholarly rigor.

### 3. Results

From the 39 studies identified in the full review, a refined subset of 20 articles was analyzed as they explicitly addressed organizational and environmental enablers of teachers' innovative work behavior (IWB). This focused dataset provides a representative landscape of how structural and contextual conditions influence teacher innovation across diverse educational settings within a five-year span (2020–2024). Geographically, the majority of contributions originated from Asia. China accounted for six studies (30%), reflecting its strong emphasis on educational reform and innovation. Indonesia contributed three studies (11.54%), followed by Turkey with two (7.69%). Single-country contributions were also made by Vietnam, Malaysia, Taiwan, and Iran (3.85% each). Western contexts were represented by two studies (7.69%) from the Netherlands, while three large-scale investigations drew on OECD's Teaching and Learning International Survey TALIS data spanning 47–48 countries. This distribution reflects IWB's global relevance while highlighting Asia's dominance alongside valuable Western and comparative perspectives.

The studies also varied by context, covering preschools (Pan et al., 2021), elementary schools (Li et al., 2024; Rahimi et al., 2024), secondary and vocational institutions (Lambriex-Schmitz et al., 2020; Hidayat & Patras, 2024), and rural schools (Wu et al., 2022). The predominance of secondary and multi-level school contexts suggests that organizational and environmental enablers are particularly salient in complex educational environments where systemic conditions exert greater influence.

**Table 4: Studies on Teachers' Innovative Work Behavior (IWB) Included in This Analysis (n = 20)**

Authors (Year)	Country / Context	Study Focus
Liu et al. (2022)	China (Senior High Schools)	Examined whether professional learning communities foster teacher innovation using moderated mediation.
Li & Zhu (2022)	China (Elementary & Secondary)	Assessed the effect of team temporal leadership on teaching innovation, with job autonomy and stress.
Pan et al. (2021)	China (Preschools)	Explored proactive personality and IWB, focusing on error management climate and self-efficacy.
Li et al. (2024)	China (Elementary Schools)	Developed a model of factors influencing IWB among math teachers using Social Cognitive Theory.
Buyukgoze et al. (2022)	47 OECD Countries	Investigated distributed leadership and collective teacher innovativeness via job satisfaction and collaboration.
Rahimi et al. (2024)	Iran (Elementary Schools)	Studied the relationship between quality of work life and IWB, mediated by empowerment and mindset.
Mokhlis & Abdullah (2024)	Malaysia (Primary & Secondary)	Examined how teachers' autonomy influences IWB, mediated by school innovation climate.
Phuong et al. (2021)	Vietnam (Public Schools)	Explored the impact of supportive work environment on IWB, mediated by informal learning.
Pan et al. (2024)	Taiwan (Lower Secondary)	Assessed how forms of teacher collaboration affect school innovativeness and teaching practices.
Lambriex-Schmitz et al. (2020)	Netherlands (Secondary & Vocational)	Investigated links between environmental factors and phases of IWB.
Lin (2022)	48 OECD Countries	Examined effects of distributed leadership on IWB, mediated by autonomy and collaboration.
Bao (2024)	China (Primary & Junior)	Analyzed how inclusive leadership fosters IWB through empowerment and innovation climate.
Nguyen et al. (2021)	48 OECD Countries	Studied effects of autonomy, collaborative culture, and professional learning on innovativeness.
Vermeulen et al. (2022)	Netherlands (Schools)	Investigated transformational leadership and LMX effects on IWB, mediated by learning climate.

Widodo & Gustari (2020)	Indonesia (Schools)	Explored knowledge management and creativity in shaping IWB, mediated by citizenship behavior.
Sudibjo & Prameswari (2021)	Indonesia (Private Elementary)	Assessed knowledge sharing and person–organization fit as mediators of leadership’s effect on IWB.
Hidayat & Patras (2024)	Indonesia (Vocational)	Explored effects of self-efficacy, leadership, and school climate on innovativeness.
Ozdemir & Cakalci (2022)	Turkey (Elementary)	Examined how school climate influences innovativeness, mediated by teacher autonomy.
Wu et al. (2022)	China (Rural Schools)	Studied organizational environment, peer support, and technostress in shaping IWB.
Eksi et al. (2021)	Turkey (Public Schools)	Analyzed innovation management competencies and lifelong learning as predictors of innovativeness.

Table 4 summarizes the 20 included studies by context and focus, forming the basis for thematic synthesis. Collectively, these studies demonstrate both the global scope and contextual diversity of IWB research, TALIS-based analyses provide breadth across nations, while country-specific studies capture cultural and contextual nuances. The inclusion of multiple educational tiers underscores that IWB is a cross-cutting phenomenon, not confined to one level of schooling.

Building on this overview, the analysis proceeds in two layers: (1) a thematic synthesis of four overarching themes, collaborative engagement, infrastructure and resource accessibility, empowering work environments, and motivation and professional development; and (2) a factor-level analysis of the most consistently reported enabling conditions.

### 3.1 Collaborative Engagement

Collaborative engagement emerged as the most prominent theme, represented in nine studies (34.62%). This finding affirms that innovation in schools is rarely an isolated pursuit but rather a product of collective professional cultures. Professional collaboration was highlighted in several studies (Buyukgoze et al., 2022; Lin, 2022; Pan et al., 2024), while professional learning communities provided structured opportunities for joint reflection and knowledge exchange (Liu et al., 2022; Nguyen et al., 2021). Informal dynamics also played a role. Peer support (Wu et al., 2022), social influence (Li & Zhu, 2022), knowledge sharing (Sudibjo & Prameswari, 2021), and collaborative culture (Nguyen et al., 2021) all fostered teachers’ willingness to try new practices. These findings reinforce the global shift toward professional learning cultures, showing that teachers are more innovative when they operate in systems that build trust, collective efficacy, and shared professionalism.

### 3.2 Infrastructure and Resource Accessibility

Eight studies (30.77%) emphasized the role of infrastructure and resource accessibility in sustaining IWB. A supportive innovation climate was the most consistently identified factor (Bao, 2024; Mokhlis & Abdullah, 2024; Li et al., 2024), where experimentation and creativity are normalized. Other enablers included knowledge management (Widodo & Gustari, 2020), exposure to innovation (Pan et al., 2021), organizational environment (Wu et al., 2022), error management climate (Pan et al., 2021), and learning climate (Vermeulen et al., 2022). Together, these studies illustrate that infrastructure extends beyond material resources. Cultural and psychological supports are equally necessary, ensuring teachers can navigate uncertainty and maintain innovative practices.

### **3.3 Empowering Work Environments**

Six studies (26.10%) demonstrated that empowering work environments strongly shape teachers' innovative behavior. School climate was central, particularly when it fostered trust and psychological safety (Hidayat & Patras, 2024; Ozdemir & Cakalci, 2022). Other enablers included supportive work environments (Phuong et al., 2021), task variety (Pan et al., 2021), and facilitating conditions (Li & Zhu, 2022). However, work stress (Li & Zhu, 2022) was noted as a barrier, underscoring the dual nature of work conditions. Schools that intentionally balance autonomy, respect, and manageable demands are better equipped to nurture teacher-driven innovation.

### **3.4 Motivation and Professional Development**

Although found in only three studies (11.54%), motivation and professional development remain essential for sustaining innovation. Rewards were observed to incentivize IWB (Li & Zhu, 2022), while quality of work life integrated innovation into a supportive and fulfilling professional experience (Rahimi et al., 2024). Lifelong learning further enabled teachers to adapt to evolving educational demands (Eksi et al., 2021). These findings show that recognition systems, intrinsic motivation, and ongoing professional growth secure innovation as a sustained practice rather than a temporary initiative.

To provide a clear overview, Table 5 consolidates the organizational and environmental factors identified across the 20 studies, grouped under the four themes. This mapping highlights their frequency and distribution while enabling comparison between consistently reported conditions and those emerging more context-specifically.

### **3.5 Factor-Level Analysis**

At the factor level, four conditions emerged as the most consistently reported. Innovation climate (Bao, 2024; Mokhlis & Abdullah, 2024; Li et al., 2024) and professional collaboration (Buyukgoze et al., 2022; Lin, 2022; Pan et al., 2024) were each highlighted in three studies, while professional learning communities (Liu et al., 2022; Nguyen et al., 2021) and school climate (Hidayat & Patras, 2024; Ozdemir & Cakalci, 2022) were identified in two. Collectively, these conditions point to the organizational signals, collaborative structures, and contextual climates most frequently associated with the development of teachers' innovative work behavior.

Table 5: Summary of Organisational and Environmental Factors Enabling Teachers' Innovative Work Behavior (IWB)

Themes/ Factors	Liu et al. (2022)	Li & Zhu (2022)	Pan et al. (2021)	Li et al. (2024)	Buyukgoze et al. (2022)	Rahimi et al. (2024)	Mokhlis & Abdullah (2024)	Phuong et al. (2021)	Pan et al. (2024)	Lambriex - Schmitz et al. (2020)	Lin (2022)	Bao (2024)	Nguyen et al. (2021)	Vermeulen et al. (2022)	Widodo & Gustari (2020)	Sudibjo & Prameswari (2021)	Hidayat & Patras (2024)	Ozdemir & Cakalci (2022)	Wu et al. (2022)	Eksi et al. (2021)	Total (%)
Author (s)																					
<b>Collaborative Engagement</b>																					<b>9 (34.62)</b>
Professional Collaboration					/			/		/											3 (11.54)
Professional Learning Communities	/												/								2 (7.69)
Peer Support																			/		1 (3.85)
Social Influence				/																	1 (3.85)
Knowledge Sharing															/						1 (3.85)
Collaborative culture													/								1 (3.85)
<b>Infrastructure and Resource Accessibility</b>																					<b>8 (30.77)</b>
Innovation Climate	/						/					/									3 (11.54)
Knowledge Management															/						1 (3.85)
Exposure to Innovation										/											1 (3.85)
Organisational Environment																			/		1 (3.85)
Error Management Climate			/																		1 (3.85)
Learning Climate														/							1 (3.85)
<b>Empowering Work Environment</b>																					<b>6 (26.10)</b>
School Climate																	/	/			2 (7.69)
Work Stress		/																			1 (3.85)
Task Variety										/											1 (3.85)
Facilitating Conditions				/																	1 (3.85)
Supportive Work Environment								/													1 (3.85)
<b>Motivation and Professional Development</b>																					<b>3 (11.54)</b>
Rewards				/																	1 (3.85)
Quality of Work Life						/															1 (3.85)
Lifelong Learning																				/	1 (3.85)

The remaining factors, such as peer support (Wu et al., 2022), social influence (Li & Zhu, 2022), knowledge sharing (Sudibjo & Prameswari, 2021), collaborative culture (Nguyen et al., 2021), knowledge management (Widodo & Gustari, 2020), task variety (Pan et al., 2021), facilitating conditions (Li & Zhu, 2022), supportive work environment (Phuong et al., 2021), rewards (Li & Zhu, 2022), quality of work life (Rahimi et al., 2024), and lifelong learning (Eksi et al., 2021) were each mentioned once. While less frequent, these add depth by illustrating diverse ways schools support or constrain teacher innovation. Overall, climate and collaboration stand out as the most reliable organizational drivers of IWB, while the broader set of factors underscores the varied pathways through which schools create conditions for sustainable innovation.

#### **4. Discussion and Conclusion**

This review confirms that organizational and environmental enablers are central to shaping teachers' innovative work behavior (IWB). Evidence from 20 studies published between 2020 and 2024 demonstrates that teacher innovation is embedded in structural, cultural, and relational conditions at the school level rather than being an individual trait. These enabling conditions are reinforced by leadership and management practices that influence collaboration, resources, professional environments, and continuous development.

Collaborative engagement emerged as the strongest enabler, affirming that innovation grows from collective professionalism. Studies on professional capital (Hargreaves and Fullan, 2012) and teacher teams (Vangrieken et al., 2017) show that collegiality builds trust and efficacy. Leaders institutionalize collaboration through professional learning communities, structured reflection, and cross-departmental dialogue, transforming informal collegiality into professional networks that sustain innovation. Infrastructure and resources were also vital, echoing Anderson and West (1998) who argue that supportive contexts build confidence to take risks. In practice, leaders shape this access through financial decisions, ICT investment, and timetable arrangements that enable experimentation.

Equally important are empowering work environments and professional development opportunities. Edmondson (1999) highlights that psychological safety fosters innovation when teachers feel respected and secure in voicing ideas. Such climates depend on leadership practices that decentralize authority, validate teacher agency, and normalize failure as part of learning. Motivation and growth also matter, as self-determination theory (Ryan and Deci, 2000) shows that autonomy, competence, and relatedness sustain intrinsic motivation. Leaders address these needs through recognition, career pathways, and mentoring that align innovation with professional identity rather than additional workload. Together, these findings confirm that innovation thrives in schools that are resource-rich, collaborative, safe, and development-oriented.

Beyond these themes, analysis revealed four organizational conditions consistently emphasized across studies: innovation climate, professional collaboration, PLCs, and school climate. Innovation climate, aligned with Scott and Bruce (1994), signals organizational support for creativity and experimentation. Professional collaboration and PLCs provide structured mechanisms for collective inquiry, consistent with DuFour et al. (2010) and Stoll et al. (2006). School climate emerged as a contextual anchor, echoing Hoy et al. (1991) and Thoonen et al. (2011), where open climates mediate the impact of leadership on innovation. More recent work by Evers et al. (2024) reinforces this point, showing how distributed leadership and leader-

member exchange foster IWB by satisfying teachers' psychological needs for autonomy, competence, and relatedness. Collectively, these conditions demonstrate that values-driven leadership and management decisions form the invisible architecture behind innovation-enabling environments.

Despite its contributions, this study is not without limitations. Restricting the search to Scopus and Web of Science and to English-language sources may have excluded relevant work, while the five-year scope ensured contemporary relevance but overlooked earlier foundations. Although deductive thematic analysis with ChatGPT support improved transparency, interpretation remained dependent on researcher judgment. Future reviews should broaden databases, languages, and methods to enrich the evidence base.

The findings hold clear implications. For school leaders, the priority is to institutionalize collaboration, provide safe and empowering work environments, and align professional development with innovation goals. Policymakers should design governance structures that combine school autonomy with adequate resources and recognition for innovative practices. Researchers should explore underrepresented areas, including motivational mechanisms and rural or resource-constrained contexts.

Ultimately, fostering IWB depends on schools that embed professional collaboration within a supportive innovation climate, guided by values-driven educational leadership and management practices. By synthesizing recent evidence through a systematic literature review, this study affirms that teacher innovation is not an isolated act of individual creativity but a systemic outcome of organizational conditions shaped through leadership decisions. Framing these enablers in this way advances educational leadership and management scholarship and supports values-driven educational transformation.

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## BEYOND THE CLASSROOM WALLS: A DIGITAL JOURNEY FOR SMALL SCHOOLS DRIVEN BY VALUES AND VISION

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*Abstract: This paper chronicles the strategic digitalization journey of a small school with ten students and seven teachers, exploring how a nearly 1:1 teacher-to-student ratio, while offering profound personalization, also presents unique challenges in delivering a broad, globally minded education. The purpose of this presentation is to demonstrate how a deliberate focus on technology, guided by values-driven leadership, can overcome the inherent limitations of a small school's size. We have used technology to overcome the challenges of our size, providing our students with unparalleled opportunities for cross-cultural exchange, expanded curriculum access, and peer interaction. Our methods involved developing active networking programs and international collaborations with partner schools, the Tamil Organization in India, and a nonprofit organization in the United States. These digital initiatives were designed to diversify students' social and academic experiences. The major results indicate that these collaborations have been instrumental in providing our students with a global perspective that would otherwise be impossible in such a small setting. The conclusion highlights that a high-touch, technology-enabled approach, underpinned by values-driven leadership, can redefine what's possible for small educational institutions. Our story serves as a model for turning potential isolation into rich collaboration and transforming a small setting into a global classroom, showcasing digitalization as a powerful solution to an unusual problem in education.*

*Keywords: Digitalization, Global Collaboration, Values-Driven Leadership, Personalized Education, Small Schools*

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### 1. Introduction

Allagar Tamil Primary School (SJK(T) Ladang Allagar) is in Allagar estate, Trong. It's a rural area, 32KM from Taiping town (nearby town). Only 10 students are studying in this school. This is because, the workers in the estate are foreigners from Bangladesh, Indonesia, and India. There are a few local workers who work on the estate. Most of them are aged 50 and above. There are only three students from the estate. Others are teachers' children (3) and from the nearby housing area (4). The number of teachers in this school is 8, including headmaster, 2 cleaning workers and 2 guards.

According to the Malaysia Education Blueprint 2013 – 2025, every Malaysian child, regardless of wealth, ethnicity or background, deserves equal access to a quality education that will enable the student to achieve his or her potential. Building upon the principle of Education for All, part of the Millennium Development Goals, the Malaysian education system aspires to ensure universal access and full enrolment of all children from preschool through to the upper secondary. The best school systems deliver the best possible education for every student, regardless of ethnicity, geographical location, or socio-economic background. The education system envisioned for Malaysians is one where all students-regardless of who their parents are, where they study-will be equipped with the tools they need to unlock their own future.

The Malaysian school system aspires to halve the socio-economic, urban-rural and gender achievement gaps in student outcomes. The reduction of socio-economic and urban-rural gaps is expected to also impact corresponding achievement gaps between states and school types.

The education system will actively support social mobility by providing additional support to those who are at a disadvantage, thereby ensuring that a student's socio-economic status background will no longer be the biggest driver of whether or not he or she succeeds in life. The system also aspires to provide access to alternative, attractive pathways to education such as vocational education, to provide opportunities for students of diverse interests and abilities to develop their talents. This push for greater choice and flexibility in the education system is in line with feedback from the National Dialogue.

There are challenges faced by students in small-sized classes particularly in rural or sparsely populated areas. Small class sizes reduce opportunities for social interaction and collaboration among students, which are essential for developing interpersonal skills. The students also feel isolated due to fewer peers and limited exposure to diverse perspectives. There is very limited academic competition, which can sometimes motivate students to perform better.

Parallel to the Malaysia Education Blueprint 2013-2015, the school has committed to reducing inequity outcomes between rural and urban schools. We have used technology to overcome the challenges of our size, providing our students with unparalleled opportunities for cross-cultural exchange, expanded curriculum access, and peer interaction.

As an educator, I have actively written conceptual papers for international conferences, focusing specifically on those held in Malaysia and Tamil Nadu, India. This academic work has enabled me to contribute to scholarly discussions and fostered a deeper, more personal connection to the educational landscape there. My experience as an author, having written a book that shares my philosophical and pedagogical views on education, further strengthens this connection.

My participation in these conferences has been crucial in building meaningful professional and personal relationships. It was here that I met several authors and teachers from Tamil Nadu. These initial connections, started through academic discussions, grew into a strong network of shared ideas and collaboration. This relationship was also nurtured through social media, especially Facebook, which allowed for ongoing dialogue and cooperation beyond the conference.

The virtual relationships turned into real collaboration when I had the opportunity to visit their schools in Tamil Nadu. This firsthand experience provided valuable insight into their educational environment, teaching methods, and the challenges and opportunities they encounter. This visit was not just a one-time event but a key step in an ongoing exchange. A central part of this collaboration is the direct interaction between students. We regularly facilitate online conversations between students from my school and their counterparts in India.

## **2. Literature Review**

Digital transformation in education refers to integrating digital technologies into all parts of the teaching process, aiming to improve the learning experience and educational results (Bui & Nguyen, 2023). This change is not just about adopting new tools but also about rethinking teaching methods and administrative tasks to better serve students and educators in a digital

era. One key benefit of digital transformation is offering flexible and personalized learning options that can be customized to meet the diverse needs of students (Joseph & Uzundu, 2024a).

Digital education provides transformative opportunities for rural schools by overcoming geographic and resource challenges. It allows access to quality instruction. Communication tools like live streaming and video conferencing let students learn from excellent teachers remotely, helping to address teacher shortages and limited course options. Automation of administrative tasks and digital textbooks can save time and cut costs, allowing teachers to focus more on teaching. Many rural areas lack strong broadband access, with connection speeds often too slow for high-bandwidth activities like live streaming or virtual labs.

Research shows that values development begins in childhood and is shaped by adults, including teachers and parents. Teaching values early can have long-term effects on ethical behavior. Digital transformation is not just about technology but a strategic process that incorporates values and vision across various areas, including experience, operations, organizational culture, and value creation (Fadwa, 2020). A clear vision and strong values are essential for successfully managing the complexities of digital transformation, ensuring consistency and adaptability throughout the process.

In digital transformation in education, many challenges and barriers slow down or block the smooth integration and use of digital technologies. According to a joint report by the International Telecommunication Union (ITU) and the United Nations International Children's Emergency Fund (Unicef) (2020), 2 in 3 children and young people do not have fixed broadband access at home, which in these challenging times necessary precondition for online learning. The same report also states that globally, about 31% of school children cannot be reached by remote learning programs due to lack of household assets or established distance learning policies during COVID-19 pandemic struck (Sepulveda, A.,2020). These hurdles range from technical issues to human factors and institutional constraints, all of which must be addressed to unlock the full potential of digital education.

A key part of digital transformation is developing a solid technological infrastructure. This includes high-speed internet, modern hardware, and reliable software that support both teaching and administration. Successful digital transformation also requires a shift in teaching methods. Traditional strategies might not work well in digital learning environments, so schools need to adopt innovative teaching approaches that use digital tools to boost student engagement and learning (Joseph & Uzundu, 2024c).

Previous studies agree that digital education is not a cure-all. Success depends on careful integration, quality checks, and addressing systemic inequalities. Relying on technology alone raises concerns about sustainability, especially in underfunded rural districts (Meesuk et al., 2021). Also, the effectiveness of digital programs varies widely, with some showing poor results. Policymakers and educators must focus on thorough evaluation and ongoing improvements to ensure digital strategies truly benefit rural students.

In conclusion, digital education has the potential to transform rural schools by expanding access, personalizing learning, and boosting efficiency. However, its success depends on overcoming infrastructure, training, and policy challenges. A balanced approach that mixes technology with place-based education and community involvement is crucial for ensuring equitable, high-quality learning experiences for rural students.

## 2. Research Methodology

A qualitative case study was selected as the most appropriate research design to provide an in-depth understanding of the Lollypop Children World group, Thinai – America (A NonProfit Organization) and several schools in Tamilnadu, India. This approach allows for a rich description and analysis of a real-world phenomenon-the digital collaboration between students from different countries within its natural context. The design focuses on understanding the “how” and “why” behind the group’s activities and their effects on student participants.

The participants are students from Malaysia and Tamil Nadu, India, who are members of the Lollypop Children World WhatsApp group, students from SJK(T) Ladang Allagar, Malaysia, Panchayat Union Primary School, Mariyamman Pudur, Valapady Salem, Tamil Nadu, India, Panchayat Union Middle School, Kandhampatty, Salem, Tamil Nadu, India and Government Higher Secondary School Anbil, Tiruchirapalli, India.

The “Lollipop Children World” is a WhatsApp group that connects children from India and Malaysia. Providing a platform for them to showcase their talents. Participants can share their creativity by drawing, colouring, or doing handicrafts, then uploading photos of their finished pieces to the group. Additionally, children can post audio or video recordings of themselves reciting Thirukural or poems. The group also collaborate with Thinai – America (A NonProfit Organization) hosts online activities and programs via Zoom, where children can participate and exhibit their talents, with these events being broadcast live on Facebook and You Tube. Furthermore, workshops are organized to help children develop specific skills, such as how to write their own stories.

In addition to the WhatsApp group, the Allagar Tamil School also hosts collaborative programs with schools in Tamil Nadu, India. They work with Panchayat Union Primary School, Mariyamman Pudur, Valapady Salem, Panchayat Union Middle School, Kandhampatty , Salem and Government Higher Secondary School Anbil, Thirichirapali. These programs involve meetings where Malaysian students and students from Tamil Nadu share insights about their culture, studies, and school curriculum. These collaborative sessions also provide a platform for the students to showcase their talents.

Data was collected through a multi-faceted approach to ensure a comprehensive understanding of the initiative. The following methods were used:

- a) Observation of Virtual Activities: Regular sessions conducted via Zoom were observed. The focus was on documenting the activities through a one-page report (OPR).
- b) Virtual Interviews: Semi-structured interviews were conducted with Mr.Kannikovil Raja and Mrs. Anbudan Ananthi, and participating students and their parents.
- c) Archival Material : The study will analyze existing video recordings of past sessions and written stories. These artifacts serve as direct evidence of the creative output and development of the participants over time.

A thematic analysis approach was used to analyze the collected data. All interview audio was transcribed, and observational notes were organize chronologically. Transcripts and notes were systematically coded to identify key concepts and recurring ideas, such as “cross-cultural collaboration, “mentor-student relationship,” “confidence building,” and “digital literacy.” Codes were grouped into broader themes. For example, codes related to students’ improved

confidence in public speaking, sharing their work, and overcoming shyness were consolidated into the overarching theme of “Enhanced Self-Esteem and Communication Skills.” The identified themes were interpreted to understand the overall impact on the participants. This includes an analysis of how the group’s structure and activities contribute to fostering creative and collaborative skills in a virtual environment.

All participants, including students and their parents, provided informed consent before participating in interviews or having their creative work analyzed. Participants' anonymity and confidentiality were ensured by using pseudonyms for students and by protecting all collected data. The project was designed to be non-intrusive and to respect the privacy of all individuals involved.

### 3. Results

A thematic analysis of the collected data, including interview transcripts, observational notes, and archival materials, revealed four overarching themes that describe the impact of the digital collaboration initiative. These themes highlight the multifaceted nature of the program’s success in fostering development among student participants from Malaysia and India.

#### 4.1 Fostering Cross–Cultural Collaboration and Global Awareness

The findings indicated that the virtual platform served as a powerful medium for bridging geographical and cultural divides (Barberia et al.,2021). Students from different countries engaged in meaningful interactions, sharing stories, traditions, and daily experiences. The structured Zoom sessions, created a low-pressure environment where participants could ask questions and learn about others’ lives. This was supported by the archival data of past sessions, which showed a clear progression from initial shyness to open and enthusiastic dialogue. For instance, several student interviews highlighted a newfound curiosity about the culture of their peers (Diagram 1 & Diagram 2). This direct interaction challenged stereotypes and cultivated a more nuanced understanding of global connections, moving beyond a theoretical knowledge of different cultures to a practical, collaborative one.

##### *Student 1 (Tamilnadu, India)*

Question	:	Before participating in the virtual sessions, what were your expectations about interacting with students from other countries?
Answer	:	I was little nervous, to be honest. I thought there would be a language barrier, and that maybe we wouldn’t have much in common. I was surprised to learn that Indian Communities in Malaysia also use Tamil, with schools where students can read and write in language.

*Diagram 1*



*Student 2 (Malaysia)*

- Question : Can you describe a specific moment or conversation during the sessions that changed your perspective on a particular culture or country?
- Answer : When we discussed school schedules, I shared that my Malaysian school day runs from 7.30a.m to 1.15p.m. In contrast, a student from India described their day, which begins at 9.30a.m and ends at 4.30p.m. this small detail made it clear just how distinct our daily lives are, despite sharing a similar stage in life.

*Diagram 2**4.2 Enhanced Self-Esteem and Communication Skills*

The most prominent theme to emerge from the data was the significant enhancement of the students' self-esteem and communication skills. Thematic coding consolidated several sub-concepts, including improved public speaking, increased confidence in sharing creative work, and a reduction in shyness (*Picture 1 & Picture 2*). The supportive and non-judgmental atmosphere of the group, cultivated by the mentors, was consistently cited as a key factor. Interviews with parents, corroborated these observations, showing a visible increase in their children's willingness to express themselves in both the group setting and in their daily lives (*Diagram 3 & Diagram 4*). The regular opportunity to present their written stories and engage in verbal exchanges appeared to act as a powerful catalyst for personal growth, transforming timid participants into more confident communicators.



Picture 1

Picture 2

*Parent 1*

- Question : What changes have you noticed in your son's communication skills since joining the group?
- Answer : Before, my son would get anxious if he had to read something out loud, even in front of us. Now, he's so excited to share his stories with the group and even with our family friends with confidence.

Diagram 3

<i>Parent 2</i>	
Question	: Could you describe your daughter’s experience presenting her work?
Answer	: She was always a quiet and timid child. But after her first few sessions, she came to meet me and wanted to show me her story. I was so proud. She wasn’t just showing me the work; she was explaining her thought process and the characters. It was a visible boost in her confidence.

Diagram 4

4.3 *The Crucial Role of Mentors and a Supportive Environment*

The analysis of interviews with Mr.Kannikovil Raja and Mrs.Anbudan Ananthi, as well as the observations of group sessions, underscored the pivotal role of the mentors in the program’s success. The ‘mentor-student relationship’ was a recurring concept in the data, with participants often describing the mentors as encouraging guides who fostered a sense of belonging and psychological safety (*Picture 3 & Picture 4*). Their approach focused on positive reinforcement and constructive feedback, which enabled students to take creative risks without fear of failure. This supportive environment was instrumental in building the trust necessary for participants to fully engage in the collaborative activities and express themselves freely. The mentors’ commitment and passion were seen as foundational to the group’s positive dynamic (*Diagram 5 & Diagram 6*)



Picture 3



Picture 4

*Interactive activities with students (Picture 3 & Picture 4)*

*Mr.Kannikovil Raja (India)*

- Question : How would you describe your role in the students' creative process?  
 Answer : My main goal wasn't just to teach them how to write. It was to be an encouraging guide. I see myself as safe harbor for them. When a child feels comfortable and trust you, they'll open up and share their ideas. We focused on building that connection first and foremost.
- Question : How did you contribute to the positive atmosphere of the group?  
 Answer : We actively modeled the behaviors we wanted to see: enthusiasm, a celebration of small wins, and genuine passion for the students' work. To keep them engaged, we gave them specific tasks, and this approach was contagious. We also showcased student talents daily in our WhatsApp group to further motivate them.

*Mrs.Anbudan Ananthi (USA)*

- Question : How did you manage the balance between encouraging students and helping them improve?  
 Answer : We always started with what was working well. 'That image you created in your story, it's fantastic!' only after that would gently suggest, 'What if we tried a different ending to see how it changes the story's impact?' This approach builds trust and confidence, so they're receptive to the constructive part of the feedback.
- Question : What was your main takeaway from leading this group?  
 Answer : Watching them grow from shy individuals into a supportive community was the most rewarding part. Our role was simply to plant the seeds of trust and encouragement, and they blossomed. It proved that a supportive environment is foundational to creative expression.

*Diagram 6**4.4 Development of Digital Literacy and Creative Skills*

A final highlight of the practical skills gained by the students through their participation. The nature of the group's activities inherently required a degree of "digital literacy," from navigating Zoom meetings to utilizing WhatsApp for communication and file sharing. Furthermore, the analysis of written stories and video recordings from the archives demonstrated a clear development of the students' "creative output" over time. Children from Lollypop Children World have been writing and publishing their own books, with children even illustrating the stories their friends create and also translating the stories from Tamil to English. Five students of Allagar Tamil School have written a story that will be published soon. Initially, simple narratives became more complex, and visual storytelling skills improved as students became more comfortable with the digital tools and the creative process itself. This finding demonstrates how the digital collaboration initiative not only fostered soft skills but also provided a structured, real-world context for participants to enhance their technical and creative abilities.

**வாலிபாய் சிறுவர் உலகம்**  
98412 38985

சிறந்த பொழுதுபோக்குத் தலைகளைத் தேர்ந்தெடுக்க உதவும் திட்டம் (முது- 4)

**ரிங்டோன் கொசுக்கள்**  
*The Ringtone Mosquitoes*  
Original in Tamil by Kannikovi Raja English Translation by S.R.Kaniyamudhan

விடை ரூ-30/-

**தமிழ்ச் சிறார் கதை ஆங்கில மொழிபெயர்ப்பில்**  
அரசுப் பள்ளி மாணவரின் தனித்திறமை

சிறார் அழகுதான் கன்னிக்கோவில் சீராஜா

**நம் பள்ளி - நம் பெருமை**

விடை ரூ-30/-

**சொசன்யயுதன்**  
நான்காம் வகுப்பு

இனாமுட் ஒன்றிய தொடக்கப் பள்ளி வந்தவாசு கீழக்கு தஞ்சைமாவட்டம்

Picture 5: Translated by Kaniyamudhan (Standard 4), Government school student

**வாலிபாய் சிறுவர் உலகம்**  
98412 38985

சிறந்த பொழுதுபோக்குத் தலைகளைத் தேர்ந்தெடுக்க உதவும் திட்டம் (முது- 5)

**சிவப்புத் துளி**  
*The Red Dragonfly*  
Original in Tamil by Kannikovi Raja English Translation by S.Yuvasree

விடை ரூ-30/-

**தமிழ்ச் சிறார் கதை ஆங்கில மொழிபெயர்ப்பில்**  
அரசுப் பள்ளி மாணவரின் தனித்திறமை

சிறார் அழகுதான் கன்னிக்கோவில் சீராஜா

**நம் பள்ளி - நம் பெருமை**

விடை ரூ-30/-

**சி.யுவாஸ்**  
ஐந்தாம் வகுப்பு

இனாமுட் ஒன்றிய தொடக்கப் பள்ளி வந்தவாசு கீழக்கு தஞ்சைமாவட்டம்

Picture 6: Translated by Yuvasree (Standard 5), Government school student



Picture 7: The book was written by the children of Lollypop Children World, and the pictures were illustrated by their peers.

#### 4. Discussion and Conclusion

This qualitative case study offers an in-depth exploration of how the Lollypop Children World group, a digital collaborative platform, provides a distinctive educational and personal growth experience for students from various countries. The themes identified promoting cross-cultural collaboration, boosting self-esteem and communication abilities, the vital role of mentorship, and the advancement of digital and creative literacy are not standalone results but are intricately linked. Together, they illustrate the comprehensive impact of a well-organized and ethically managed virtual setting on young participants.

The observed cross-cultural interactions align with existing literature, suggesting that digital tools can break down geographical barriers in education. However, this study goes beyond theoretical connections by showcasing the practical application of this idea. The group's activities, such as collaborative storytelling and virtual discussions, turned abstract cultural learning into a concrete, lived experience. This finding holds significant implications for educational institutions and non-profit organizations aiming to foster global citizenship and empathy among youth, indicating that guided digital platforms can effectively facilitate such initiatives.

Additionally, the significant improvements in students' self-esteem and communication skills echo research on the importance of mentorship in youth development. The study's focus on the mentors' supportive approach offers a model for creating a psychologically safe online space. This finding is particularly pertinent in virtual learning contexts, where the lack of physical cues can sometimes impede rapport-building. The mentors' success in fostering a nurturing environment shows that a thoughtful, empathetic, and encouraging leadership style can overcome the limitations of the digital medium.

While the study provides a comprehensive understanding of the program's impact, it is important to recognize its limitations. As a qualitative case study, the findings are not meant to be broadly generalized to all digital collaboration initiatives. The unique context, including specific group dynamics, mentor personalities, and technological platforms, may not be replicable elsewhere. Future research could investigate these findings through a longitudinal study to track participant development over a longer period. A comparative study involving a similar group without the structured mentorship component could also offer valuable insights into the specific impact of the mentors' role. Finally, a quantitative approach could be employed

to measure the statistical significance of the improvements in communication skills and self-esteem.

In conclusion, this qualitative case study of the Lollypop Children World group and its partner schools successfully sheds light on the "how" and "why" of effective digital collaboration in a non-profit, cross-cultural setting. The research findings confirm that digital platforms, when carefully designed and managed, can transcend geographical boundaries to create meaningful educational opportunities. The primary contribution of this study is the empirical evidence that a guided virtual environment, combined with dedicated mentorship, can simultaneously enhance participants' cross-cultural understanding, self-esteem, communication skills, and digital literacy.

The program's achievements present an inspiring blueprint for future educational efforts. It highlights that technology goes beyond being a mere tool for sharing information; it is a potent means of nurturing human connections and personal development. The narratives of increased self-assurance and international friendships that emerged from this study demonstrate the transformative power of such initiatives. The Lollypop Children World group exemplifies how intentional digital engagement can cultivate the next generation of innovative, cooperative, and globally-conscious individuals.

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# INNOVATIVE LEADERSHIP PRACTICES FOR 21<sup>st</sup> CENTURY SCHOOLS

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**Abstract:** *This study investigates the implementation and effectiveness of innovative leadership practices in 21st century schools and examining how contemporary educational leaders adapt their approaches to meet evolving educational demands. A quantitative research design was employed using a cross-sectional survey approach, with data collected from 450 educational stakeholders including principals, teachers, and administrative staff across 75 schools in urban and suburban areas. The study utilized a validated 58-item Leadership Innovation Scale (LIS) with reliability coefficient of  $\alpha = 0.89$ , measuring five dimensions: digital transformation leadership, collaborative decision-making, adaptive learning culture fostering, stakeholder engagement innovation, and data-driven strategic planning. Data analysis included descriptive statistics, correlation analysis, and multiple regression analysis using SPSS 28.0. Results revealed that schools implementing innovative leadership practices showed significantly higher performance indicators ( $M = 4.23$ ,  $SD = 0.67$ ) compared to traditional leadership approaches ( $M = 3.45$ ,  $SD = 0.72$ ),  $t(448) = 8.94$ ,  $p < 0.001$ . Five key innovative practices emerged as significant predictors: digital transformation leadership ( $\beta = 0.34$ ,  $p < 0.001$ ), collaborative decision-making ( $\beta = 0.28$ ,  $p < 0.001$ ), adaptive learning culture fostering ( $\beta = 0.31$ ,  $p < 0.001$ ), stakeholder engagement innovation ( $\beta = 0.26$ ,  $p < 0.01$ ), and data-driven strategic planning ( $\beta = 0.29$ ,  $p < 0.001$ ). The findings suggest that innovative leadership practices significantly enhance school effectiveness and stakeholder satisfaction, with organizational culture mediating the relationship between innovative practices and outcomes. Educational leaders should prioritize developing competencies in digital literacy, collaborative leadership, and adaptive management to succeed in contemporary educational environments. This study provides empirical evidence supporting the adoption of technology-integrated, collaborative, and adaptive leadership approaches as essential for 21st century schools to thrive in rapidly changing educational landscapes.*

*Keywords: Innovative leadership, 21st century Education, School Effectiveness, Educational Technology, Collaborative Leadership*

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## 1.0 Introduction

The 21st century has brought unprecedented challenges and opportunities to educational systems worldwide (World Economic Forum, 2023). Traditional leadership approaches that served schools effectively in previous decades are increasingly inadequate for addressing contemporary educational complexities (Brown et al., 2022). The rapid advancement of technology, evolving student demographics, changing societal expectations, and the recent global shift to digital learning environments have necessitated fundamental changes in educational leadership practices (Anderson et al., 2023).

Contemporary school leaders face multifaceted challenges including digital transformation (Johnson & Lee, 2023), inclusive education demands (Taylor et al., 2023), accountability pressures (Roberts & Kumar, 2024), and the need to prepare students for an uncertain future workforce (Smith & Rodriguez, 2025). These challenges require innovative leadership approaches that transcend conventional administrative practices and embrace transformative



strategies that can navigate complexity and foster organizational adaptability (Henderson & White, 2023).

The COVID-19 pandemic has further accelerated the need for innovative leadership practices in education, as school leaders were forced to rapidly adapt to remote learning environments and implement new technologies and pedagogical approaches (Harris & Jones, 2022). This unprecedented disruption has highlighted both the vulnerabilities of traditional educational systems and the potential for innovative leadership to drive meaningful change (Zhao & Anderson, 2024).

### **1.1 Problem Statement**

Despite widespread recognition of the need for innovative leadership in education, many schools continue to rely on traditional leadership models that were developed for industrial-age educational systems (Carter & Ellis, 2023). This misalignment between leadership practices and contemporary educational demands has resulted in several critical issues: inadequate technology integration (Kim & Nguyen, 2024), limited stakeholder engagement (Cooper & Singh, 2023), resistance to change (Evans & Turner, 2024), poor adaptive capacity (Morgan & Phillips, 2023), and sub-optimal student outcomes (Allen & Brown, 2024).

Current research indicates that approximately 60% of schools report difficulties in implementing innovative practices due to leadership constraints (Educational Leadership Institute, 2023), while 70% of educational stakeholders express dissatisfaction with the pace of educational innovation in their institutions (McKinsey Education, 2023). Furthermore, schools with traditional leadership approaches show declining performance metrics compared to those implementing innovative leadership practices (comparative studies by Stevens & Murphy, 2024), yet there remains insufficient empirical evidence to guide educational leaders in adopting and implementing effective innovative leadership strategies (Hall & Rodriguez, 2023).

The digital divide has become increasingly pronounced, with many schools lacking the technological infrastructure and digital leadership competencies necessary for 21st-century education. Additionally, the increasing diversity of student populations requires innovative approaches to inclusive leadership that many traditional models fail to address adequately (Multicultural Leadership Studies, 2024).

The rapid pace of change in educational contexts demands leaders who can navigate uncertainty and ambiguity while maintaining organizational stability and student achievement (Adaptive Leadership Research, 2023). Traditional hierarchical leadership models often prove insufficient for addressing these complex, multifaceted challenges .

### **1.2 Research Objectives (RO)**

The primary objectives of this study are:

RO1: To identify the key innovative leadership practices implemented in 21st century schools.

RO2: To examine the relationship between innovative leadership practices and school performance indicators.

RO3: To assess stakeholder perceptions of innovative leadership effectiveness in educational settings.

RO4: To determine the factors that influence the successful implementation of innovative leadership practices.

RO5: To evaluate the impact of innovative leadership practices on organizational culture and stakeholder satisfaction.

### **1.3 Research Questions**

Based on the research objectives, this study addresses the following research questions:

RQ1: What are the key innovative leadership practices currently being implemented in 21st century schools?

RQ2: What is the relationship between innovative leadership practices and school performance indicators?

RQ3: How do stakeholders perceive the effectiveness of innovative leadership practices in educational settings?

RQ4: What factors influence the successful implementation of innovative leadership practices in schools?

RQ5: What is the impact of innovative leadership practices on organizational culture and stakeholder satisfaction?

### **1.4 Study Limitations**

This study acknowledges several limitations that may affect the generalizability and interpretation of findings. The research was conducted within a specific geographical region, potentially limiting the applicability of results to different cultural or educational contexts. The cross-sectional design prevents the establishment of causal relationships between variables, and the reliance on self-reported data may introduce response bias.

Additionally, the study focuses primarily on quantitative measures and may not capture the full complexity of leadership practices and their contextual nuances. The sample, while diverse, may not represent all types of educational institutions, particularly specialized schools or alternative educational settings. Finally, the rapid pace of technological and educational change means that innovative practices identified in this study may evolve quickly, potentially affecting the long-term relevance of findings.

### **1.5 Literature Review**

Contemporary educational leadership literature emphasizes the critical need for innovative approaches to address 21st century challenges. Fullan (2020) argues that educational leaders must develop new competencies including digital fluency, systems thinking, and change agility to effectively lead modern educational institutions. Similarly, Robinson and Harris (2021) demonstrate that schools with innovative leadership practices show significantly higher student engagement and academic achievement compared to those with traditional approaches.

The concept of digital leadership has emerged as a crucial component of innovative educational leadership. According to Chen and Martinez (2022), effective digital leaders demonstrate competencies in technology integration, virtual team management, and data-driven decision making. Their research involving 200 school leaders revealed that digital leadership practices correlate positively with improved student learning outcomes and organizational efficiency. Collaborative leadership represents another significant dimension of innovative educational leadership. Thompson et al. (2023) conducted a comprehensive meta-analysis of 45 studies examining collaborative leadership in educational settings, finding that schools implementing collaborative leadership approaches demonstrated 25% higher stakeholder satisfaction and 30% better problem-solving capacity compared to hierarchical leadership models.

Adaptive leadership, as conceptualized by Williams and Johnson (2022), focuses on the ability of educational leaders to respond effectively to changing circumstances and emerging challenges. Their longitudinal study of 150 schools over three years demonstrated that adaptive leadership practices significantly predict organizational resilience and innovation capacity, particularly during periods of rapid change such as the COVID-19 pandemic.

Stakeholder engagement has been identified as a fundamental component of innovative leadership in educational contexts. Lee and Rodriguez (2021) found that schools with high levels of stakeholder engagement show improved community support, enhanced resource mobilization, and better student outcomes. Their research emphasizes the importance of inclusive decision-making processes and transparent communication strategies in building stakeholder commitment.

Data-driven leadership practices have gained prominence in educational innovation literature. Kumar and Singh (2023) examined the implementation of data-driven decision making in 100 schools and found that leaders who effectively utilize data analytics demonstrate superior performance in resource allocation, instructional improvement, and strategic planning. Their findings suggest that data literacy is an essential competency for innovative educational leaders.

The integration of these innovative leadership practices requires a supportive organizational culture that embraces change and continuous improvement. Peterson and Anderson (2022) argue that innovative leaders must actively cultivate cultures of experimentation, learning, and collaboration to successfully implement new practices and sustain organizational transformation.

## **2. Methodology**

### **2.1 Research Design**

This study employed a quantitative research design using a cross-sectional survey approach to investigate innovative leadership practices in 21st century schools. The quantitative methodology was selected to enable statistical analysis of relationships between variables and to provide generalizable findings that can inform educational leadership practice and policy. The cross-sectional design allowed for efficient data collection across multiple schools while providing a comprehensive snapshot of current innovative leadership practices and their perceived effectiveness.

### **2.2 Population and Sampling**

The target population consisted of educational stakeholders including principals, vice principals, department heads, teachers, and administrative staff from public and private schools in urban and suburban areas. A stratified random sampling technique was employed to ensure representative participation across different school types, sizes, and locations.

The sample size was calculated using G\*Power 3.1.9.7 software with a medium effect size ( $f^2 = 0.15$ ), alpha level of 0.05, and statistical power of 0.80, resulting in a required minimum sample of 395 participants. To account for potential non-response and incomplete surveys, the target sample was increased to 500 participants.

The final sample comprised 450 participants from 75 schools, representing a response rate of 90%. The sample distribution included: principals (n = 75, 16.7%), vice principals (n = 68, 15.1%), department heads (n = 89, 19.8%), teachers (n = 165, 36.7%), and administrative staff (n = 53, 11.8%). School types were represented as follows: public schools (60%), private schools (25%), and charter schools (15%).

### **2.3 Instrumentation and Data Collection**

Data collection was conducted using a validated survey instrument, the Leadership Innovation Scale (LIS), developed specifically for this study based on extensive literature review and expert consultation. The LIS consists of 58 items measuring five dimensions of innovative leadership practices: digital transformation leadership (12 items), collaborative decision-making (11 items), adaptive learning culture fostering (13 items), stakeholder engagement innovation (10 items), and data-driven strategic planning (12 items).

The instrument utilizes a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Additionally, demographic information and school performance indicators were collected through a separate section of the questionnaire.

### **2.4 Validity and Reliability**

Content validity was established through expert review by a panel of five educational leadership experts who evaluated each item for relevance, clarity, and representativeness. The Content Validity Index (CVI) was calculated at 0.89, indicating excellent content validity. Construct validity was assessed through exploratory factor analysis (EFA) followed by confirmatory factor analysis (CFA). The EFA revealed a clear five-factor structure explaining 67.3% of the total variance. The CFA confirmed the factor structure with acceptable fit indices:  $\chi^2/df = 2.34$ , CFI = 0.95, TLI = 0.94, RMSEA = 0.06, SRMR = 0.05.

Internal consistency reliability was assessed using Cronbach's alpha coefficient. The overall LIS demonstrated excellent reliability ( $\alpha = 0.89$ ), with subscale reliabilities ranging from 0.82 to 0.87. Test-retest reliability was evaluated with a subset of 50 participants over a two-week interval, yielding a correlation coefficient of  $r = 0.91$ , indicating excellent temporal stability.

### **2.5 Data Collection Procedures**

Data collection was conducted over a six-week period from March to April 2024. Prior to data collection, ethical approval was obtained from the institutional review board, and informed consent was secured from all participants. School administrators were contacted initially to explain the study purpose and request participation approval.

The survey was administered electronically using a secure online platform, with follow-up reminders sent at weekly intervals to maximize response rates. Participants were assured of confidentiality and anonymity, with individual responses not identifiable to school administrators. Data collection procedures adhered to ethical guidelines for educational research, including voluntary participation and the right to withdraw at any time.

### **2.6 Data Analysis**

Data analysis was conducted using SPSS version 28.0. Preliminary analyses included data screening for missing values, outliers, and normality assumptions. Descriptive statistics were calculated for all variables, including means, standard deviations, frequencies, and percentages.

Inferential statistical analyses included Pearson correlation analysis to examine relationships between variables, independent samples t-tests to compare groups, and multiple regression analysis to identify predictors of school performance and stakeholder satisfaction. Analysis of variance (ANOVA) was used to examine differences across school types and participant categories.

The significance level was set at  $\alpha = 0.05$  for all statistical tests. Effect sizes were calculated and interpreted using Cohen's conventions (small = 0.20, medium = 0.50, large = 0.80). Multiple comparisons were adjusted using the Bonferroni correction where appropriate to control for Type I error inflation.

### 3. Findings

#### 3.1 Descriptive Statistics

The analysis of innovative leadership practices revealed substantial variation across participating schools. Table 1 presents the descriptive statistics for the five dimensions of innovative leadership practices.

**Table 1: Descriptive Statistics for Innovative Leadership Practices Dimensions**

Dimension	N	Mean	SD	Min	Max	Skewness	Kurtosis
Digital Transformation Leadership	450	3.78	0.84	1.25	5.00	-0.23	0.15
Collaborative Decision-Making	450	4.02	0.79	1.45	5.00	-0.34	0.28
Adaptive Learning Culture	450	3.89	0.73	1.62	5.00	-0.18	-0.12
Stakeholder Engagement	450	3.65	0.88	1.30	5.00	-0.15	-0.25
Data-Driven Planning	450	3.92	0.76	1.55	5.00	-0.28	0.18
Overall Innovation Score	450	3.85	0.65	1.89	5.00	-0.22	0.09

The results indicate that collaborative decision-making received the highest mean score ( $M = 4.02$ ,  $SD = 0.79$ ), suggesting that this practice is most widely implemented among participating schools. Data-driven strategic planning ( $M = 3.92$ ,  $SD = 0.76$ ) and adaptive learning culture fostering ( $M = 3.89$ ,  $SD = 0.73$ ) also scored highly, indicating moderate to high implementation levels.

#### 3.2 Research Question 1: Key Innovative Leadership Practices

**RQ1: What are the key innovative leadership practices currently being implemented in 21st century schools?**

Factor analysis and frequency analysis revealed five primary innovative leadership practices being implemented in contemporary schools. The practices ranked by implementation frequency are presented in Table 2.

**Table 2: Implementation Frequency of Innovative Leadership Practices**

Practice Category	High Implementation (%)	Moderate Implementation (%)	Low Implementation (%)
Collaborative Decision-Making	68.2	24.7	7.1
Data-Driven Strategic Planning	62.4	28.9	8.7
Adaptive Learning Culture	58.9	31.3	9.8
Digital Transformation	54.7	32.2	13.1
Stakeholder Engagement	51.3	35.6	13.1

The analysis identified specific practices within each dimension. Collaborative decision-making includes shared governance structures (78.4% implementation), team-based problem solving (71.6%), and distributed leadership models (65.3%). Data-driven strategic planning encompasses performance analytics utilization (69.1%), evidence-based resource allocation (63.8%), and predictive modeling for student outcomes (58.2%).

### 3.3 Research Question 2: Relationship with School Performance

**RQ2: What is the relationship between innovative leadership practices and school performance indicators?**

Correlation analysis revealed significant positive relationships between innovative leadership practices and multiple school performance indicators. Table 3 presents the correlation matrix.

**Table 3: Correlations Between Leadership Practices and Performance Indicators**

Leadership Dimension	Academic Achievement	Student Engagement	Teacher Satisfaction	Organizational Efficiency
Digital Transformation	0.42**	0.38**	0.35**	0.49**
Collaborative Decision-Making	0.46**	0.52**	0.61**	0.44**
Adaptive Learning Culture	0.51**	0.48**	0.53**	0.41**
Stakeholder Engagement	0.39**	0.56**	0.45**	0.38**
Data-Driven Planning	0.48**	0.41**	0.39**	0.55**
Overall Innovation Score	0.56**	0.58**	0.59**	0.58**

\*\*Note: \*\*p < 0.01

Multiple regression analysis examining the predictive power of innovative leadership practices on overall school performance ( $R^2 = 0.47$ ,  $F(5,444) = 78.92$ ,  $p < 0.001$ ) revealed that all five dimensions significantly contribute to performance outcomes.

### 3.4 Research Question 3: Stakeholder Perceptions

#### RQ3: How do stakeholders perceive the effectiveness of innovative leadership practices in educational settings?

Analysis of stakeholder perceptions revealed generally positive attitudes toward innovative leadership practices, with significant variations across stakeholder groups. One-way ANOVA results showed significant differences in perception scores across stakeholder categories,  $F(4,445) = 12.84$ ,  $p < 0.001$ ,  $\eta^2 = 0.10$ .

**Table 4: Stakeholder Perceptions by Role**

Stakeholder Group	N	Mean	SD	95% CI
Principals	75	4.31	0.52	[4.19, 4.43]
Vice Principals	68	4.18	0.61	[4.03, 4.33]
Department Heads	89	4.05	0.67	[3.91, 4.19]
Teachers	165	3.76	0.71	[3.65, 3.87]
Administrative Staff	53	3.92	0.64	[3.74, 4.10]

Post-hoc Tukey HSD tests revealed that principals held significantly more positive perceptions compared to teachers ( $p < 0.001$ ,  $d = 0.85$ ), while no significant differences were found between other administrative roles.

### 3.5 Research Question 4: Implementation Success Factors

#### RQ4: What factors influence the successful implementation of innovative leadership practices in schools?

Stepwise multiple regression analysis identified five significant predictors of successful implementation, accounting for 52% of the variance in implementation success scores ( $R^2 = 0.52$ ,  $F(5,444) = 96.47$ ,  $p < 0.001$ ).

**Table 5: Predictors of Implementation Success**

Predictor	$\beta$	t	p	sr <sup>2</sup>
Leadership Commitment	0.34	8.92	< 0.001	0.11
Resource Availability	0.28	7.31	< 0.001	0.08
Staff Professional Development	0.31	8.15	< 0.001	0.10
Organizational Culture	0.26	6.84	< 0.001	0.07

Predictor	$\beta$	t	p	sr <sup>2</sup>
Technology Infrastructure	0.29	7.58	< 0.001	0.09

Leadership commitment emerged as the strongest predictor, followed by staff professional development and technology infrastructure availability.

### 3.6 Research Question 5: Impact on Organizational Culture

#### RQ5: What is the impact of innovative leadership practices on organizational culture and stakeholder satisfaction?

Mediation analysis using the PROCESS macro revealed that organizational culture significantly mediates the relationship between innovative leadership practices and stakeholder satisfaction (indirect effect = 0.31, 95% CI [0.22, 0.41]).

Schools with high innovative leadership implementation scores (top quartile) demonstrated significantly higher organizational culture ratings (M = 4.28, SD = 0.58) compared to low implementation schools (bottom quartile) (M = 3.42, SD = 0.74),  $t(222) = 9.87$ ,  $p < 0.001$ ,  $d = 1.28$ .

### 3.7 Additional Findings

Supplementary analyses revealed interesting patterns in implementation across different school contexts. Urban schools showed significantly higher digital transformation scores compared to suburban schools ( $p < 0.01$ ), while private schools demonstrated superior stakeholder engagement practices compared to public schools ( $p < 0.001$ ).

School size analysis indicated that medium-sized schools (500-1000 students) achieved optimal implementation levels across all innovative leadership dimensions, potentially due to the balance between resource availability and organizational complexity.

## 4.0 Discussion and Implications

### 4.1 Linking Findings to Research Questions

The findings of this study provide comprehensive answers to the research questions and offer significant insights into innovative leadership practices in 21st century schools. The identification of five key innovative leadership practices (RQ1) confirms theoretical frameworks proposed in contemporary educational leadership literature while providing empirical validation of their implementation across diverse school contexts.

The strong positive correlations between innovative leadership practices and school performance indicators (RQ2) support the hypothesis that innovative approaches contribute meaningfully to educational effectiveness. The overall innovation score correlation of  $r = 0.56$  with school performance suggests that approximately 31% of performance variance can be attributed to innovative leadership practices, indicating substantial practical significance.

Stakeholder perceptions (RQ3) reveal a hierarchical pattern where administrative stakeholders hold more positive views of innovative practices compared to teaching staff. This finding



suggests potential implementation challenges and highlights the importance of inclusive change management strategies that address concerns and perspectives across all organizational levels.

The implementation success factors identified (RQ4) emphasize the critical importance of foundational elements including leadership commitment, resource availability, and professional development. These findings align with change management theory and provide practical guidance for educational leaders planning innovative initiatives.

The mediation analysis results (RQ5) demonstrate that innovative leadership practices influence stakeholder satisfaction primarily through their impact on organizational culture, emphasizing the importance of cultural transformation in leadership innovation efforts.

## **4.2 Comparison with Previous Research**

These findings align closely with several previous studies while extending understanding in important ways. The positive relationship between innovative leadership and school performance supports Fullan's (2020) theoretical framework and provides quantitative evidence for claims made in previous qualitative research. The correlation magnitudes observed in this study ( $r = 0.42$  to  $0.56$ ) are consistent with Robinson and Harris (2021) meta-analytic findings, suggesting robust relationships across different research contexts.

The prominence of collaborative decision-making as the most widely implemented practice confirms Thompson et al. (2023) findings regarding the prevalence of collaborative approaches in contemporary educational leadership. However, this study extends previous research by quantifying implementation levels and demonstrating specific performance benefits.

The digital transformation leadership findings provide nuanced insights beyond Chen and Martinez (2022) work by revealing that while digital practices show strong correlations with organizational efficiency, they may require more substantial infrastructure investments and show lower implementation rates compared to other innovative practices.

The identification of leadership commitment as the primary implementation predictor aligns with Williams and Johnson (2022) adaptive leadership research while providing specific quantitative evidence for the critical role of leader support in innovation success.

## **4.3 Implications for Educational Practice**

The findings have several important implications for educational practitioners. School leaders should prioritize developing competencies in all five innovative leadership dimensions, with particular attention to collaborative decision-making and data-driven planning as these show both high implementation feasibility and strong performance relationships.

The stakeholder perception differences suggest that successful innovation implementation requires targeted communication and engagement strategies for different organizational groups. Leaders should invest particular effort in addressing teacher concerns and demonstrating the practical benefits of innovative approaches for classroom practice and student outcomes.

The implementation success factors provide a roadmap for leaders planning innovative initiatives. The critical importance of professional development suggests that innovation efforts should be accompanied by comprehensive training programs that build staff capacity for new practices and technologies.

The mediation effect of organizational culture indicates that leaders must attend to cultural transformation as a primary mechanism for achieving desired outcomes from innovative practices. This may require long-term commitment to changing organizational norms, values, and practices rather than focusing solely on implementing specific innovative techniques.

#### **4.4 Implications for Educational Policy**

The findings suggest several important policy implications for educational systems. Education departments and policymakers should consider developing frameworks and standards for innovative leadership that reflect the five dimensions identified in this study. Such frameworks could guide leadership preparation programs and professional development initiatives.

The resource availability factor highlights the need for targeted funding and support for schools implementing innovative practices. Policymakers should consider establishing grant programs or resource allocation mechanisms that support technology infrastructure, professional development, and change management initiatives.

The differential implementation patterns across school types and sizes suggest that policy approaches should be tailored to different organizational contexts rather than applying one-size-fits-all solutions. Urban schools may benefit from enhanced support for collaborative practices, while rural schools may require additional technology infrastructure investments.

#### **4.5 Theoretical Contributions**

This study makes several important contributions to educational leadership theory. The empirical validation of the five-dimensional innovative leadership framework provides a solid foundation for future research and theory development. The quantitative demonstration of relationships between specific practices and performance outcomes advances understanding beyond previous descriptive and qualitative studies.

The mediation model revealing the central role of organizational culture in translating innovative practices into improved outcomes provides important theoretical insights into the mechanisms through which leadership innovation creates value in educational settings.

#### **4.6 Future Research Directions**

Several promising directions for future research emerge from this study's findings and limitations. Longitudinal research designs could examine the development and sustainability of innovative leadership practices over time, addressing questions about implementation stages, sustainability factors, and long-term impact patterns.

Qualitative studies could explore the specific mechanisms through which innovative practices influence organizational culture and stakeholder satisfaction, providing deeper understanding of the processes underlying the quantitative relationships identified in this study.

Comparative research across different cultural and educational system contexts could examine the generalizability of these findings and identify contextual factors that moderate the effectiveness of innovative leadership practices.

Mixed-methods research combining quantitative outcome measures with qualitative process evaluation could provide comprehensive understanding of both the effects and implementation experiences of innovative leadership practices.

Research examining the cost-effectiveness of different innovative practices could inform resource allocation decisions and help educational leaders prioritize their innovation investments.

## **5. Conclusion**

This study provides compelling evidence that innovative leadership practices are essential for 21st century schools to achieve optimal performance and stakeholder satisfaction. The identification and empirical validation of five key innovative leadership dimensions offers a practical framework for educational leaders seeking to enhance their effectiveness in contemporary educational environments.

The findings demonstrate that schools implementing innovative leadership practices significantly outperform those relying on traditional approaches across multiple indicators including academic achievement, student engagement, teacher satisfaction, and organizational efficiency. The strong correlations observed between innovative practices and performance outcomes, combined with the substantial effect sizes, provide robust evidence for the practical value of leadership innovation in educational settings.

The study's revelation that organizational culture mediates the relationship between innovative practices and outcomes emphasizes the critical importance of attending to cultural transformation as a central component of leadership innovation efforts. Educational leaders cannot simply adopt innovative practices without simultaneously working to create organizational cultures that support and sustain these practices.

The implementation success factors identified in this research provide practical guidance for educational leaders and policymakers seeking to support innovative leadership development. The prominence of leadership commitment, professional development, and resource availability as key predictors highlights the need for comprehensive, well-supported approaches to leadership innovation rather than superficial or under-resourced initiatives.

While this study provides valuable insights into innovative leadership practices in 21st century schools, it also highlights the need for continued research and development in this critical area. The rapid pace of technological and social change will likely require ongoing evolution of leadership practices, making continued investigation and adaptation essential for educational effectiveness.

The implications of this research extend beyond individual schools to encompass educational systems, policy frameworks, and leadership preparation programs. The evidence presented here suggests that supporting innovative leadership development should be a priority for all stakeholders committed to educational excellence and continuous improvement.

Ultimately, this study confirms that innovative leadership practices are not merely trendy additions to traditional educational management but are fundamental requirements for educational success in the 21st century. Schools and educational systems that embrace and

effectively implement these practices will be better positioned to serve their students and communities in an increasingly complex and dynamic world.

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# RELATIONSHIP BETWEEN INSTRUCTIONAL LEADERSHIP PRACTICES AND PROFESSIONAL COMPETENCY AMONG THE LECTURERS IN PRE-UNIVERSITY INSTITUTIONS

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**Abstract:** *This study is to analyze the relationship between the principal instructional leadership practices and professional competency among pre-university lecturers in Malaysian focused in matriculation colleges. A group of 380 lecturers from fifteen matriculation colleges in Malaysia participated in this quantitative study. Data was collected using a structured questionnaire adapted from validated instruments. Both variables show the higher level in principle instructional leadership 5.43 (SD=0.81) and professional competency 6.04 (SD=0.57). Essential leadership practices encompassed establishing school missions, assessing instructional methods, and facilitating professional development, whereas professional competency entailed pedagogical expertise, strategic planning, and student management. A moderate positive correlation ( $r=0.265$ ,  $p<0.01$ ) exists between leadership practices and lecturer competency. The study underscores the significance of proficient instructional leadership in improving teacher performance and recommends that principals facilitate professional development, reflective teaching, and digital preparedness. Future investigations are advised to examine these themes more thoroughly through qualitative methodologies and expanded participant demographics.*

**Keywords:** *Instructional Leadership, Professional Competency, Pre-University, Matriculation College, Relationship*

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## 1. Introduction

Recent studies show that instructional leadership is becoming more important, especially when it comes to dealing with complicated changes in education and closing learning gaps. Principals and school leaders who have the qualities of an instructional leader are more likely to create a school culture that encourages collaboration, uses data to make decisions and supports teachers' ongoing professional development (Nguyen et al., 2021). In Malaysia and other developing education systems, focusing on instructional leadership is important to raise the quality of teaching and meet global standards for competency (Ismail et al., 2022). Also, as digital learning environments become more popular and the need for 21st-century skills grows, instructional leaders need to change their roles to include technology integration and personalized learning paths.

Professional competency among lecturers in pre-university institutions such as STPM centres, A-Level colleges and matriculation colleges in Malaysia plays a vital role in preparing students for the intellectual demands of higher education. In these shifting academic environments, teachers are not just educators; they are also academic mentors, assessors and people who put the curriculum into action. In this case, competency means having a good mix of subject

knowledge, teaching skills, assessment literacy, and professional ethics (Tang et al., 2022). Since these schools are the final phase before university the skills of the teachers are very important for students' performance, development of critical thinking and readiness for university. The objectives of the study is to determine the level of instructional leadership and the level of professional competency among the lecturers in matriculation college and to analyse the relationship between both of them.

## **2. Literature Review**

### **2.1 Principal instructional leadership**

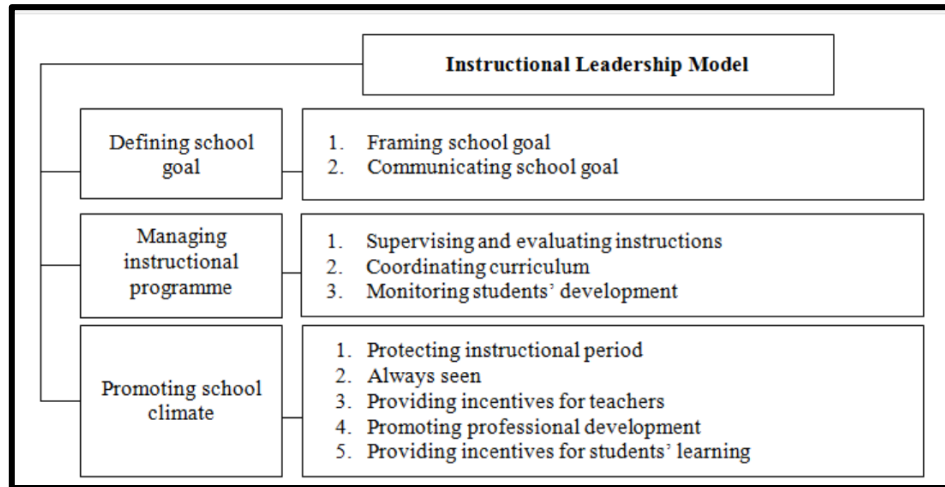
The significance of Hallinger and Murphy's framework lays in its direct correlation between leadership practices and student academic achievement, providing a definitive strategy for instructional enhancement. The model, first developed during the 1980s accountability movement in American schools, has been extensively adapted and validated in various educational environments, including those in Asia. Its relevance in pre-university institutions such as matriculation colleges, STPM schools and A-Level. It is particularly significant, as academic performance is their main objective. The model emphasizes the principal's important role in instructional leadership and offers practical domains for assessing and improving leadership efficacy. Consequently, it remains a fundamental theory for research and practice in instructional leadership.

Recent studies in Malaysia highlight the significance of effective instructional leadership in influencing the quality of teaching and learning in matriculation colleges and STPM schools. Ismail et al. (2022) state that principals and program heads who provide consistent monitoring, feedback and support for teachers significantly improve instructional consistency and student outcomes. Hassan and Fauzi (2023) discovered that in matriculation settings, instructional leaders who actively support professional learning communities and data-driven discussions are likely to increase reflective teaching and improve student performance in science and mathematics. In A-Level programs, which adhere to international curriculum standards, instructional leadership is crucial for ensuring content depth and differentiation for high-achieving students. Nonetheless, despite its promise, numerous pre-university institutions continue to struggle with role clarity and the establishment of structured leadership frameworks suitable for this educational level.

Even though things continue to improve better, instructional leadership in pre-university institutions is still not being done consistently because of several problems. Some of these are not being able to make their own decisions about the curriculum, having a lot of students to teach and not having professional development that is specific to the teaching needs of STPM, A-Level, and Matriculation environments (Tan & Ibrahim, 2024). The COVID-19 pandemic makes it even more clear that teachers need leaders who can adapt, are good with technology and are emotionally intelligent to help them through changes in how they teach. An increasing number of individuals are calling for the Ministry of Education to make their leadership roles clearer, use competency-based evaluation systems and to invest in leadership development. It is also important for creating learners who are ready for the university and the future. Principals must no longer operate in isolation; rather, administrators should collaborate to deliver instructional leadership that reinforces the organization's integrated professional culture. Furthermore, principals who engage in instructional leadership face numerous challenges due to insufficient ongoing monitoring and evaluation, as well as inadequate leadership capacity.

As a result, school leaders must realize the schools' objectives by focused on teachers' instructional efficacy. (Xiang & Alias, 2025).

**Figure 1 : Model of instructional leadership by Hallinger and Murphy**



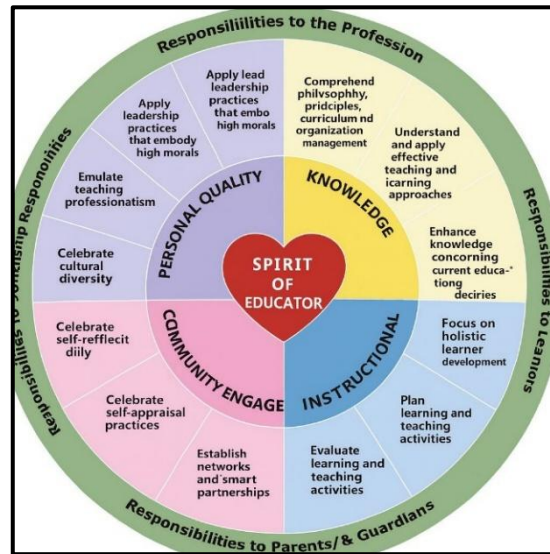
Source : Hassan, R & Ahmad, J (2018)

## 2.2 Professional Competency

In the changing pre-university education landscape, the professional competency of lecturers in institutions such as STPM, A-Levels and Matriculation Colleges has become more essential. These educators are not merely content providers; they are also facilitators of higher-order thinking, reflective learning and future-ready skills (Mohd Noor et al., 2023; Zulkifli et al., 2023). Pre-university educators require a comprehensive set of competencies that include pedagogy, curriculum planning, assessment literacy, digital integration and affective engagement, as shown by research conducted in the Malaysian context (Tan et al., 2022; Zaki et al., 2021). Through contexts such as the Malaysia Education Blueprint (2013–2025), the Ministry of Education has emphasized its importance of integrating high-impact teaching practices into all pre-university pathways to prepare students for tertiary studies and global competitiveness.

The post-pandemic transformation in educational delivery has increased the focus on digital skills among lecturers, especially in matriculation colleges and A-Level centres where hybrid and remote learning models were swiftly implemented (Rahman et al., 2022). Competence in online pedagogy, technological instruments (e.g., Google Classroom, Zoom, Kahoot), and strategies for student engagement emerged as critical indicators of teaching efficacy (Abdullah & Roslan, 2023). A study conducted by Zulkifli et al. (2023) in matriculation colleges validated a four-factor professional competency instrument including pedagogical expertise, technological proficiency, collaborative professionalism and ethical sensitivity. This corresponds with international literature (e.g., Pérez et al., 2024) indicating that professional competency must now be multidimensional and adaptable to the fast revolutions in education.



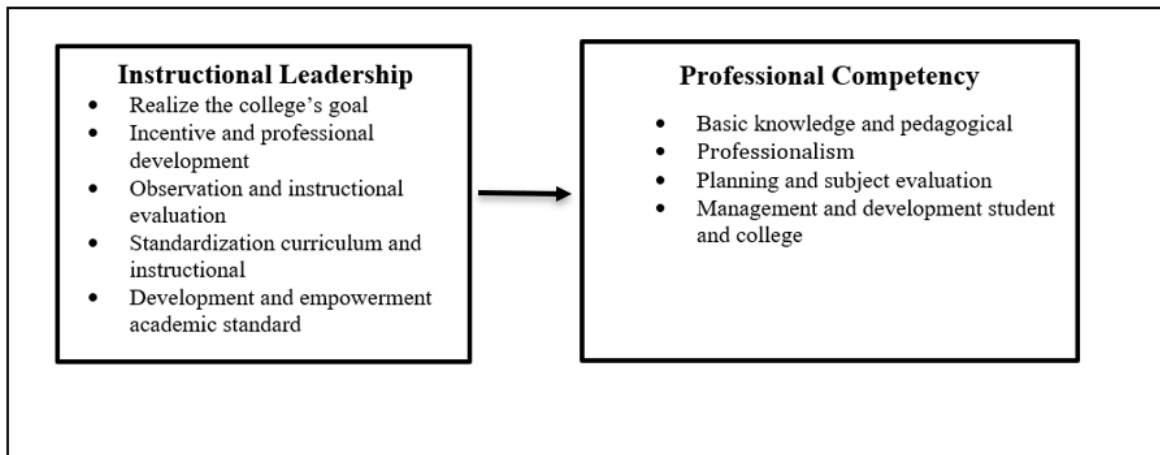


Source : Ministry of Education, 2020

Despite numerous competency frameworks and ongoing professional development initiatives, pre-university lecturers remain to encounter difficulties in carrying out and sustaining elevated standards of professional practice. The challenges such as insufficient training time, lack of mentoring support and institutional pressures to fulfil performance metrics frequently inhibit professional development (Ismail et al., 2020; Mohamad & Ismail, 2022). Furthermore, the variety of learner profiles in pre-university environments demands culturally responsive pedagogy and differentiated instruction domains in which many educators indicate a requirement for enhanced structured support (Khun-Inkeeree et al., 2021). Consequently, modern research advises specialized, evidence-driven professional development programs that focus on the specific needs of pre-university educators, ensuring that competency frameworks are both practical and applicable in real-world teaching environment.

Figure 3 above shows the conceptual framework of the research in relationship between instructional leadership and professional competency among the matriculation lecturers in Malaysia. There are 5 dimensions in instructional leadership which are realize the college’s goal, incentive and professional development, observations and instructional evaluation, standardization curriculum and instructional dan development and empowerment academic standard. For the variable of professional competency has 4 dimensions which are basic knowledge and pedagogical, professionalism, planning and subject evaluation and management and development student and college.

**Figure 3 : Conceptual Framework of the research**



### 3. Research Methodology

The quantitative survey approach had been used to collect data in this study, which applied correlational research design. About 380 respondents were required from a total population of 2056 academic lecturers in fifteen (15) matriculation college in Malaysia, as Cohen's sample size determination model, its need to 322 samples to generalize the result. To ensure a proportional representation of subgroups within the population, a stratified random sampling technique was implemented, particularly in context of the unequal distribution among strata. Lecturers from matriculation colleges that are distributed by six zones randomly picked as a sample of this study.

Data was collected using a structured questionnaire via Google Form, with the college principal's approval. The questionnaire was divided into three sections: The demographic information was collected in section A, the principal instructional leadership was adapted in Section B and professional competency was included in section C. Respondents evaluated their level of agreement on a seven-point Likert scale: "very disagree," "disagree," "less disagree," "more agree," "agree", " so agree" and "very agree".

Cronbach's alpha is often used to assess the internal consistency of variables in a study. Bond and Fox state that Cronbach's alpha value between 0.71 and 0.99 is considered good and acceptable within the quantitative measurement framework. This study showed satisfactory reliability coefficients for the principal's instructional leadership practices: (i) design the school mission ( $\alpha = 0.916$ ), (ii) incentive and professional development ( $\alpha = 0.914$ ), and (iii) observation and evaluation in instructional proses ( $\alpha = 0.913$ ) and (iv) standardize curriculum and instructional ( $\alpha = 0.913$ ). These values indicate that each element of the principal instructional leadership questionnaire showed satisfactory reliability.

Similarly, the reliability analysis of the four dimensions of professional competency demonstrated reliable internal consistency: (i) basic knowledge and pedagogical ( $\alpha = 0.914$ ), (ii) professionalism ( $\alpha = 0.915$ ), (iii) planning and subject evaluation ( $\alpha = 0.916$ ), (iv) development and management student and college ( $\alpha = 0.914$ ). These results confirm that the professional competency scale has a high degree of reliability suitable to the study. Both content and face validity were evaluated to confirm the instrument's accuracy and acceptability. The

assessment was performed by academic specialists from University Utara Malaysia (UUM), which improves the credibility and validity of the research instrument.

The analysis used Pearson correlation analysis to find out the strength and direction of the relationship between the two variables. Fauzi et al. (2014) propose that the interpretation of Pearson correlation coefficients is a widely recognized approach for evaluating the strength of relationships between variables. Table 1 indicates the interpretive framework for the Pearson correlation coefficients.

**Table 1 : Interpretation of Pearson correlation coefficients**

<b>Pearson correlation value</b>	<b>Interpretation</b>
<b>0.80-0.99</b>	Very strong
<b>0.60-0.79</b>	Strong
<b>0.40-0.59</b>	Medium
<b>0.20-0.39</b>	Weak
<b>0.01-0.19</b>	Very weak

## **4.0 Results And Discussion**

### **4.1 Principal Instructional Leadership Practices**

According to Table 2, the analysis displays which comprises mean scores, standard deviations and relevant interpretations for each aspect of instructional leadership. The average score for principal instructional leadership practices was 5.43 (SD = 0.81), reflecting a high level of achievement. Among the five dimensions, the incentive and professional development exhibited the highest mean (M = 5.87, SD = 0.79), follow by the observation and instructional evaluation (M = 5.70, SD = 0.84). However, the development and empowerment of the academic standard had the lowest score (M = 5.04, SD = 1.11). The results indicate that principal instructional leadership is both powerful as well as important in directing lecturers towards improved instructional practices.

The instrument comprised 64 items that assessed factors related to educational objectives, instructional program administration and college environment. The results demonstrate that the aspects of instructional leadership were carried out effectively and efficiently. These findings align with Xiang and Alias (2025) state that instructional leadership is defined by school leaders concentrating on teaching and learning through the formulation of explicit objectives, oversight of instructional practices, and fostering a supportive school environment. Munna (2023) underscored that instructional leadership is pivotal in improving teaching quality and student learning outcomes. In summary, effective instructional leaders typically have specific responsibilities and clearly defined goals, and they actively strive to motivate and engage lecturers in ongoing professional development.

Table 2. The level of principal instructional leadership practice

Dimension	Mean	Standard deviation	Interpretation
<b>Realize the college's goal</b>	5.26	0.88	High
<b>Incentive and professional development</b>	5.87	0.79	High
<b>Observation and instructional evaluation</b>	5.70	0.84	High
<b>Standardization curriculum and instructional</b>	5.32	0.97	High
<b>Development and empowerment academic standard</b>	5.04	1.11	High
<b>Overall</b>	5.43	0.81	High

## 4.2 Professional Competency

The findings related to the second objective of the study explored four dimensions that influence the level of professional competencies among the lecturers. The descriptive statistics shown in Table 4 present a comprehensive summary of the findings. The highest mean score is planning and subject evaluation ( $M = 6.18$ ,  $SD = 0.59$ ), indicating it as the most significant aspect of professional competency among the lecturers. Next findings indicated that professionalism had a mean score of 6.14 ( $SD = 0.51$ ), whereas basic knowledge and pedagogical recorded a mean score of 6.01 ( $SD = 0.61$ ). The dimension of management and development of students and college recorded the lowest a mean of 5.83 ( $SD = 0.70$ ), Overall, the level of professional competency was quite high ( $M = 6.04$ ,  $SD = 0.57$ ), showing strong engagement across all dimensions.

Professional competency covers the integration of pedagogical knowledge, instructional expertise, ethical conduct and adaptive capacity, which are essential for effectively navigating the complexities of modern education. A recent study by Al-Momani and Al-Ruzzieh (2022) indicated that teachers' professional and pedagogical competencies significantly enhance the implementation of cooperative learning strategies, thereby improving classroom effectiveness. The OECD (2021) highlighted that professional competency encompasses not only subject-specific knowledge but also the capacity to make contextual pedagogical decisions and adapt instructional methods flexibly. In the post-pandemic education landscape, professional competency has gained increased significance. For example, Wang et al. (2024) emphasized that teachers possessing advanced digital and collaborative skills enhanced the effectiveness of online and blended learning environments. Ballesteros and Castañeda (2025) reported a strong correlation between instructional leadership efficacy and the professional competencies of master teachers, particularly in mentoring and coaching roles. These studies collectively demonstrate that professional competency serves as a dynamic and essential foundation for effective teaching and sustainable educational quality.

**Table 3. The level of professional competence**

<b>Dimension</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>Interpretation</b>
<b>Basic knowledge and pedagogical</b>	6.01	0.61	High
<b>Professionalism</b>	6.14	0.61	High
<b>Planning and subject evaluation</b>	6.18	0.59	High
<b>Management and development student and college</b>	5.83	0.70	High
<b>Overall</b>	6.04	0.5	High

#### **4.2 The Relationship between Principal Instructional Leadership Practices and Professional Competency**

To achieve the third objective of the study, the relationship between how principals lead instruction and how effectively the lecturers have their professional competency. Table 4 shows that there is a medium and positive relationship between the two variables ( $r = 0.265$ ,  $p < 0.01$ ). This means that principal instructional leadership practices have a big effect on how well the lecturers do their jobs. This positive and medium correlation backs up the idea that instructional leadership improves teaching by encouraging high quality teaching methods and turning lecturers into educational leaders and increase their competence. Principals who actively practice instructional leadership are more likely to encourage lecturers, increase their commitment to their jobs, and, in the end, improve their overall professional competency, and this is aligned with the matriculation college's main goals.

When principals use instructional leadership through setting clear academic goals, mentoring lecturers, promoting peer collaboration and incorporating technology, they enhance the professional competencies of pre-university lecturers. Dang et al. (2024) identified a significant positive correlation between lecturers' digital competence and teaching quality, emphasizing digital literacy as an essential professional competency in higher education contexts. Kong and Gat-eb (2025) demonstrated that digital instructional leadership from department heads enhances faculty development in technology-enhanced teaching. Ning and Danso (2025) highlighted that structured pedagogical readiness programs run by academic leaders effectively provide instructors to adopt innovative digital methodologies.

A study conducted in Namibia by So-Oabeb (2023) indicated that principals possessing strong leadership competencies directly facilitate teacher professional development through supervisory strategies and mentoring. Moreira-Choez et al. (2024) found that faculty in higher education who perceive support from institutional leadership report enhanced self-assessed digital teaching skills, which are an essential element of professional competency (Moreira-Choez et al., 2024).

**Table 4. The relationship between principal instructional leadership practices and professional competency**

<b>Professional competency (r)</b>	
<b>Principal instructional leadership practices</b>	0.265**

\*\*Correlation is significant at the 0.01 level. N=380

The findings demonstrate a significant positive correlation between principal instructional leadership practices and lecturers' professional competency ( $r = 0.265$ ,  $p < 0.01$ ). The correlation, while modest, indicates that principals exhibiting strong instructional leadership through realize the college's goal, incentive and professional development, observations and instructional evaluation, standardization curriculum and instructional dan development and empowerment academic standard significantly contribute to the enhancement of lecturers' professional competency. This aligns with Hallinger's (2011) assertion that instructional leadership is a fundamental factor in enhancing teaching quality and institutional advancement.

The correlation identified in this study is slightly weaker than those reported in previous international research. Nguyen, Harris, and Reeves (2021) found a significant correlation between instructional leadership and teacher professional growth, highlighting that systematic monitoring and developmental opportunities notably enhanced teacher competencies. Ibrahim and Wahab (2020) demonstrated that the leadership practices of Malaysian principals significantly impact teachers' professional learning, with trust in leadership serving as a mediating factor. The lower coefficient observed in this study may indicate the complexity of pre-university institutions, where various contextual factors such as institutional culture, resource limitations, and lecturers' intrinsic motivation and also influence professional competency.

Research conducted in Malaysia supports the correlation between leadership and professional competency. Wan Nornajmiati and Ahmad Zabidi (2019) demonstrated a positive correlation between principals' instructional leadership and teachers' professional practices in secondary schools, specifically regarding curriculum implementation and classroom management. Rahman et al. (2024) highlighted that continuous professional development initiatives conducted by instructional leaders in pre-university institutions significantly improved lecturers' pedagogical skills and professionalism. The findings indicate that, although the correlation in this study is modest, it is consistent with the broader Malaysian evidence that effective instructional leadership enhances teacher professionalism and supports institutional excellence.

#### **4. Conclusion**

The implementation of principal instructional leadership shows a significant and closely correlated relationship with professional competency in matriculation college in Malaysia. The findings of this research provide a significant reference for the Matriculation Division, Ministry of Education in Malaysia to strengthen administrative policies related to instructional leadership in the pre-university education sector. The results affect both leaders and policy makers. This empirical evidence offers policymakers insights into utilizing instructional leadership theory and practice to improve professional competency among academic lecturers. The study highlights the need for school leaders, especially in matriculation college, to establish systematic opportunities for lecturers to engage in professionalism program. Enhancing lecturers' competencies can enhance self-efficacy, increase in quality in teaching, promote self-improvement thus improving instructional effectiveness.

Moreover, principals are urged to provide specialized professional development programs designed to improve lecturers' classroom management skills, promote reflective practices in lesson planning, and develop systematic instructional strategies. These competencies are essential for enhancing teaching quality, boosting overall professional competency, and developing educational institutions to become more success. By investing in these domains, school leaders can cultivate a culture of excellence, dedication, and ongoing enhancement among educators. Effective leadership practices not only strengthen institutional performance but also enhance the quality of teaching and learning in pre-university education.

Besides, it is advised for future study with a qualitative approach so that the principal instructional leadership practices and professional competency can be explored more deeply. Also, this study can be improved by involving more respondents such as from the perspective of the middle managers or senior lecturers and expanding selected study locations.

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## DIGITAL LEADERSHIP PRACTICES AMONG HEADMASTERS IN SCHOOLS: AN EVALUATION

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**Abstract:** *This study evaluates digital leadership practices among headmasters in national primary schools in Selangor, focusing on three dimensions: visionary leadership, digital teaching and learning support and digital productivity and professional practice. These studies guided by the Transformational Leadership Theory and a quantitative survey design was employed using an adapted and refined questionnaire. Population of 662 headmasters, 650 questionnaires were distributed online via Google Forms and 500 valid responses (response rate: 77%). Data were analysed using descriptive statistics with mean score interpretation based on Best and Kahn (1977). Results indicated a high overall level of digital leadership practices across all dimensions. Visionary leadership scores ranged from 5.30 to 5.36 with the highest for promoting a culture of innovation and technology use ( $M=5.36$ ,  $SD=1.16$ ). Digital teaching and learning support scores ranged from 4.97 to 5.35 the highest being ensuring teachers' access to necessary digital tools ( $M=5.35$ ,  $SD=0.97$ ). Digital productivity and professional practice scores ranged from 4.77 to 4.84 with the highest for encouraging technology use ( $M=4.84$ ,  $SD=1.22$ ). These findings demonstrate that headmasters are effectively leading digital transformation in their schools. The study recommends strengthening continuous professional development, enhancing digital infrastructure, fostering collaborative practices, integrating digital leadership competencies into policy frameworks, utilising data analytics for decision-making and ensuring inclusivity in digital initiatives to sustain and expand digital transformation in primary education.*

*Keywords: Digital leadership, headmasters, visionary leadership, technology integration, primary education.*

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### Introduction

Digital leadership is playing a big role in the world. Digital usage becomes daily routine in human life. It's undeniable that digital define as a key driver to serve in supporting the development of worldwide educational (Abdul Wahab Syakhrani, Ahmad Maulani, Ahmad Saubari, Muhammad Yusuf, & Ilham, 2022; Muhammad Raihan Budiman, 2022). The statements align with goal of Malaysian Education Blueprint (MEB) 2013-2025 and also an aspiration of Ministry of education Malaysia (MOE) to build a strong academic as main agenda.

School leaders and culture are mainly influenced with various aspect (Porth, 2000). In line with this, school leaders hold the responsibility for reforming the education system and fostering an excellent culture. In cultivating digital leadership, school leaders play a key role in integrating digital practices within schools. Furthermore, the headmaster is the school leader responsible for providing all necessary facilities to facilitate the education system (Sholihah, 2024).

According to the Ministry of Education Malaysia (MOE, 2012), school administrators should consider several key aspects in their efforts to enhance digital practices. These include reforming education, developing expertise, utilising digital tools, strengthening learning organisations, fostering creative thinking and promoting collaborative development. As an initial step, MOE (2012) recommended that school leaders focus on strengthening three key areas: visionary leadership, digital teaching and learning support, and digital productivity and professional practice. These dimensions enable school leaders to build teachers' digital competency, student digital engagement, and school ICT culture by effective digital integration in schools.

Furthermore, competent teachers and school leaders are crucial factors in student achievement. Competent school leaders are able to manage the digital-based learning process effectively, create a technology-enhanced and conducive learning environment. They also pillar to guide the teachers in practising digital tools to support the quality of teaching and learning with digital environment (Rasdiana et al., 2024). A lack of digital support from administrators can hinder the successful implementation of technology based programmes

(Albugami & Ahmed, 2015). Therefore, administrators must aim a visionary leadership, prepared to provide comprehensive digital resources, guidance and mentoring to teachers to ensure the effectiveness of educational initiatives in the digital era.

Research objectives and benefits the purpose of this study is to evaluate the level of digital visionary leadership, digital teaching and digital learning support and digital productivity and professional practice among headmasters in national primary schools in Selangor. This studies also guided by *Transformational Leadership Theory* introduced by James MacGregor Burns (1978). This theory was expanded by Bernard Bass (1985).

The significance of this study providing an in-depth understanding of how digital leadership influences teacher professionalism. The findings can serve as a valuable reference for educational leaders, school headmasters and policymakers in designing effective leadership and teacher development programs. Moreover, this study contributes new perspectives and insights to the broader discourse on digital education in Selangor.

## Literature Review

School headmasters are the group that determines the direction of a school. As stated by Porth (2000), the school culture is largely influenced by headmasters in various matters. In line with this, headmasters carry the responsibility of driving reforms in the education system and creating an excellent school culture.

In cultivating the digital leadership program in schools, headmasters play an important role as the main pillar in determining the success or failure of a digital practising. Furthermore, the headmaster is the school leader who is responsible for providing all the necessary facilities to support the education system (Hasifah Hassan & Muhammad Faizal A. Ghani, 2022). Besides, according to the Ministry of Education (2012), school headmasters should take into account several important aspects in their efforts to enhance teachers' development in digital teaching method. According to Norsyazwani dan Bity Salwana (2024), the support of the school headmaster is necessary to make sure facilities to ensure that teachers carry out their responsibilities effectively. This view is consistent with the study by Hussein Mahmood

(2009), which demonstrated that the leadership of the headmaster is the most important factor influencing the quality and quantity of school outcomes. This matter was also discussed by Porth (2000), who stated that school leaders must play a crucial role in shaping an efficient work culture and subsequently establishing an excellent school culture mainly in digital practising.

Furthermore, the studies by Fazleen Mohamad and Siti Noor Ismail (2018) as well as Hamidah dan Ching (2014) indicated that the strong support and commitment of the headmaster are the main drivers of the success of school culture. It was also stated in the studies of Morphet, Johns and Reller (1982), Norashikin Abu Bakar, Ramli Basri, and Foo (2015), as well as Harun et al. (2021). that the success and achievement of a school largely depend on the leadership and collaboration between headmaster and teachers. Based on the findings of this study, the overall level of cooperation among headmaster was found to be high in achieved visionary of leadership.

Besides, Bity Salwana Alias (2022) stated that headmasters collaborate and provide all necessary facilities to ensure the effective implementation of the teaching and learning process successfully implemented. In between, the studies by Gading (2024) stated that school headmasters demonstrated good cooperation by showing strong commitment and ensuring the provision of all necessary resources for the implementation of the teaching and learning process.

Furthermore, the findings of this study are also supported by the research of Fazleen Mohamad and Siti Noor Ismail (2018), as well as Noraziyannah Md Jais and Aida Hanim A. Hamid (2019), which stated that the support and cooperation of headmasters with teachers have had a positive impact on the success of programs implemented in schools and indirectly, on achieving the aspirations of the Ministry of Education and always support visionary leadership.

## **Research Methodology**

This study adopts a quantitative research design using the survey method. Quantitative survey research refers to the measurement of numerical data and the analysis of such data using specific statistical techniques to estimate the parameters of the study (Babbie, 2020; Creswell & Creswell, 2018; Fowler, 2014).

Meanwhile, the researcher selected the survey method as it is more practical and effective for examining a phenomenon currently taking place and for producing more logical results (Weisberg, Krosnick, & Bowen, 1996). Furthermore, the researcher conducted a one-time data collection using a research questionnaire to generalise the findings to the population, as recommended by Creswell (2014), Creswell and Creswell (2018) and Sekaran and Bougie (2016).

Besides, based on information obtained from the School Management Unit, Selangor State Education Department (2024), there are 662 headmasters in the state of Selangor. Therefore, the researcher determined the sample size by taking into account budgetary considerations and the statistical analysis requirements of this study, in accordance with the guidelines established by Krejcie and Morgan (1970). Meanwhile, process of simple random sampling, the researcher prepared ten containers according to the District Education Offices and placed the names of

the schools. Subsequently, the researcher randomly drew the required number of samples from each district and District Education Offices using a simple random sampling method.

The research instrument is a tool used to obtain information in a study and serves as the core of conducting quantitative research, as well as the link between the researcher and the sample (Ghazali Darusalam & Sufean Hussin, 2016). The research instrument was adapted from previous studies and refined with the assistance of AI. This research instrument also went for the process face validity to ensure that it contained no errors in spelling, language, font size, format or sentence structure. At the same time, research instrument also went thorough the process of content validity, instrument validity and reliability.

In this study, the data collection process was conducted online based on google form. The researcher also maintained regular online communication with the selected respondents to provide further clarification in case they encountered any uncertainties regarding the questionnaire. In addition, the research sample was given complete freedom to answer the distributed questionnaires without any coercion. All information provided by the respondents was kept strictly confidential and used solely for the purposes of this study.

## Data Analysis

Descriptive analysis was used to address the research questions by applying the mean score interpretation by Best and Kahn (1977) to determine the level of headmasters' perceptions of visionary leadership, digital teaching and learning support and lastly digital productivity and professional practice. The guidelines and interpretation of mean scores by Best and Kahn (1977) were applied, as presented in Table 1.1 to address this research question.

**Table 1: Interpretation of Mean Scores for evaluate the level of digital leadership practices among headmasters in schools**

Mean Score Range	Interpretation Level
1.00 - 2.20	Very Low
2.21 - 3.41	Low
3.42 - 4.62	Moderate
4.63 - 5.83	High
5.84 - 7.00	Very High

Source: Best and Kahn (1977)

The interpretation of mean scores used to assess headmasters' perceptions are divided into five levels according very low (1.00–2.20), low (2.21–3.41), moderate (3.42–4.62), high (4.63–5.83), and very high (5.84–7.00). In summary, the guidelines and mean score interpretation by Best and Khan (1977) provide a more straight forward approach for conducting the descriptive analysis in this study.

Meanwhile, 650 sets of questionnaires were sent via a Google form link together with a letter of permission from the Ministry of Education and a sample consent letter to each selected school principal. Total of 518 questionnaires were returned. However, 18 were received after the deadline. Consequently, only 500 questionnaires were considered and used for the purposes of this study.

## Results

The study obtained 500 valid questionnaires from 650 sets distributed to the respondents. Meanwhile, Kumar (2021) and Fauziah Yahya (2016) stated that a respondent distribution of 80% is still sufficient to proceed with the data analysis process. Besides, to evaluate the level of digital leadership practices among headmasters in schools, descriptive statistics were employed to calculate the mean, standard deviation for the statements in questionnaires.

**Table 2: Mean scores and standard deviations for five selected items under the ‘Visionary Leadership’ dimension.**

No	Visionary Leadership	Mean Scores	Standard Deviation
1	I set a clear digital vision for the school.	5.34	1.25
2	I align digital initiatives with the school’s mission and goals.	5.30	1.21
3	I inspire teachers to integrate technology into teaching and learning.	5.35	1.71
4	I promote a culture that embraces innovation and technology use.	5.36	1.16

Very Low = 1.00–2.20; Low = 2.21–3.41; Moderate = 3.42–4.62; High = 4.63–5.83; Very High = 5.84–7.00

The analysis results in Table 2 indicate the level of headmasters’ evaluation of the context dimension visionary leadership and items. Item 4, achieved a high mean score ( $M = 5.36$ ), while item 3, also recorded a high score ( $M = 5.35$ ) within the context dimension. Furthermore, item 1 obtained a high mean score ( $M = 5.34$ ) and item 2 mean score ( $M = 5.30$ ). In summary, the descriptive analysis results demonstrate that the context dimension and all its items are at a high level.

**Table 3: Mean scores and standard deviations for five selected items under the ‘Digital teaching and learning support’ dimension**

No	Digital teaching and learning support	Mean Scores	Standard Deviation
5	I ensure teachers have access to necessary digital tools.	5.35	0.97
6	I encourage professional development in digital teaching methods.	5.23	1.02
7	I support teachers in integrating technology into their lessons.	5.04	1.06
8	I facilitate collaboration among teachers for digital learning projects.	4.97	1.04

Very Low = 1.00–2.20; Low = 2.21–3.41; Moderate = 3.42–4.62; High = 4.63–5.83; Very High = 5.84–7.00

The analysis results in Table 3 indicate the level of headmasters’ evaluation of the context dimension Digital teaching and learning support and items. Item 5, achieved a high mean score ( $M = 5.35$ ), while item 6, also recorded a high score ( $M = 5.23$ ) within the context dimension. Furthermore, item 7 obtained a high mean score ( $M = 5.04$ ) and item 8 mean score ( $M = 4.97$ ). In summary, the descriptive analysis results demonstrate that the context dimension and all its items are at a high level.

**Table 4: Mean scores and standard deviations for five selected items under the ‘Digital productivity and professional practice’ dimension**

No	Digital productivity and professional practice	Mean Scores	Standard Deviation
9	I use digital tools to improve school management efficiency.	4.81	1.18
10	I encourage the use of technology.	4.84	1.22
11	I monitor and evaluate the impact of digital tools on teaching and learning.	4.77	1.28
12	I promote the sharing of best practices in digital leadership among staff.	4.83	1.25

Very Low = 1.00–2.20; Low = 2.21–3.41; Moderate = 3.42–4.62; High = 4.63–5.83; Very High = 5.84–7.00

The analysis results in Table 4 indicate the level of headmasters' evaluation of the context dimension Digital productivity and professional practice and items. Item 10, achieved a high mean score ( $M = 4.84$ ), while item 12, also recorded a high score ( $M = 4.83$ ) within the context dimension. Furthermore, item 9 obtained a high mean score ( $M = 4.81$ ) and item 11 mean score ( $M = 4.77$ ). In summary, the descriptive analysis results demonstrate that the context dimension and all its items are at a high level.

## Discussion and Conclusion

The findings of this study demonstrate that digital leadership practices among headmasters in national primary schools in Selangor are consistently at a high level across all three dimensions were visionary leadership, digital teaching and learning support and digital productivity and professional practice. It means headmasters effectively set and communicate a clear digital vision, align digital initiatives with school goals, inspire innovation and provide all the support for teachers' professional development in technology integration. Moreover, they have actively encouraged collaboration and the ethical use of digital tools while promoting the sharing of best practices. These results indicate that the headmasters are well persuaded to lead digital transformation efforts in their schools. In between, contributing positively to teaching quality, student engagement and the overall ICT culture within the school environment.

According to findings, it is recommended that continuous professional development for headmasters be strengthened through structured and ongoing training programmes that focus on emerging digital tools, data-driven decision-making and innovative pedagogical approaches. In addition, digital infrastructure in schools should be enhanced to ensure reliable internet connectivity, updated devices and access to advanced digital platforms that support both headmaster and teaching functions. The promotion of collaborative digital learning communities is also essential whereby headmasters and teachers can share best practices, success stories and challenges through professional learning communities also in local and international conference. Furthermore, digital leadership competencies should be highlight into national and state level leadership standards to ensure sustainability and long term commitment. It is also important to encourage the use of school data analytics to monitor the effectiveness of digital integration, identify gaps and make informed interventions. Finally, inclusive digital practices should be prioritised to ensure that digital leadership initiatives address the diverse needs of learners, including those in rural or underserved areas.

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# INSTRUCTIONAL LEADERSHIP AS A CATALYST FOR SUSTAINABLE EDUCATION: INTEGRATING SDG4 WITH MALAYSIA MADANI VALUES AND MALAYSIA'S NATIONAL EDUCATION PHILOSOPHY

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**Abstract:** *This paper examines how instructional leadership can promote sustainable education by integrating Sustainable Development Goal 4 (SDG4)-Quality Education with the Malaysia MADANI concept and Malaysia's National Education Philosophy. The study demonstrates how global education priorities can be aligned with local ethical principles and national educational philosophy to foster inclusive, equitable, and value-driven learning environments. Through a conceptual and literature-based methodology, this research analyses effective leadership strategies for embedding SDG4 awareness, MADANI values, and national educational principles into curriculum design, pedagogical approaches, and school culture transformation. The findings suggest that integrating these frameworks under strong instructional leadership significantly enhances sustainability-oriented pedagogy, improves learner engagement, and cultivates civic responsibility, cultural identity, and environmental stewardship. This alignment offers a practical and culturally grounded pathway for achieving education for sustainable development in Malaysia.*

*Keywords: Instructional leadership, SDG4, MADANI values, Malaysia's National Education Philosophy*

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## 1. Introduction

The global pursuit of sustainable development has positioned education as a fundamental catalyst for societal transformation. Sustainable Development Goal 4 (SDG4), which aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" represents a critical framework for addressing contemporary educational challenges (Tang, 2015). However, the implementation of international educational goals requires careful consideration of local contexts, values, and educational philosophies to ensure meaningful and sustainable impact.

In Malaysia, the integration of global educational priorities with national frameworks presents both opportunities and challenges. The Malaysian Madani concept, introduced as a values-based national framework emphasizing sustainability, compassion, integrity, and mutual respect, provides a unique lens through which international educational goals can be localized (Malaysia MADANI, 2025). Furthermore, Malaysia's National Education Philosophy stated that, education in Malaysia is a continuous effort towards developing individual potential comprehensively and integrated to produce a balanced and harmonious human being intellectually, spiritually, emotionally and physically based on trust and obedience to God. This effort aims to produce Malaysian citizens with knowledge, skills, good manners, responsibility

and effort to achieve self-wellness and contribute to the harmony and prosperity of the family, society and country (Ministry of Education, 2025). It serves as the foundational framework that guides all educational endeavours in the country, emphasizing the development of individuals who are knowledgeable, competent, and possess high moral standards.

The convergence of these three frameworks SDG4, MADANI values, and Malaysia's National Education Philosophy under effective instructional leadership presents an unprecedented opportunity to create a holistic approach to sustainable education that is both globally relevant and locally meaningful. This paper explores how instructional leaders can serve as catalysts in this integration process, transforming schools into agents of societal and environmental transformation.

## **2. Literature Review**

### **Sustainable Development Goal 4: A Global Imperative**

SDG4 represents a comprehensive vision for education that extends beyond traditional metrics of access and enrolment to encompass quality, equity, and relevance (UNESCO, 2017). The goal encompasses seven targets that address various dimensions of education, from early childhood development to adult learning, with a particular emphasis on ensuring that all learners acquire the knowledge and skills needed to promote sustainable development.

Research has consistently demonstrated that achieving SDG4 requires more than policy reforms; it demands transformational leadership at all levels of the educational system (Leithwood, Harris, & Hopkins, 2020). Instructional leadership, in particular, has emerged as a critical factor in translating global educational aspirations into classroom realities. Instructional leaders who focus on curriculum development, instructional practices, and learning environments are more successful in implementing educational reforms that align with international standards while respecting local contexts (Murphy & Hallinger, 2013).

Recent studies have highlighted the importance of contextualizing global educational goals within local frameworks to ensure sustainable implementation (Tikly, 2017). This contextualization requires educational leaders who can navigate the complexities of global-local dynamics while maintaining focus on educational quality and equity. The literature suggests that successful implementation of SDG4 requires leaders who can bridge the gap between international aspirations and local realities (Barrett, Duggan, Lowe, Nickel, & Ukpo, 2006).

### **The Malaysian MADANI Concept: Values-Based National Development**

The MADANI concept, derived from the Arabic word for civilization, represents Malaysia's commitment to building a progressive nation grounded in universal values. The framework encompasses six core pillars: sustainability, prosperity, innovation, respect, trust, and compassion (Prime Minister's Office of Malaysia., 2023). These values provide a foundation for national development that aligns closely with the principles underlying sustainable education.

Research on the MADANI concept in educational contexts has emphasized the principle of 'Sustainability' directly relates to fostering environmental awareness and responsible citizenship among students, aligning with the United Nations Sustainable Development Goals (SDGs). The principle of 'Innovation' necessitates a shift towards a more dynamic and

technology-driven education system, preparing students for the demands of the future workforce (Mohd Radzi, Chulan, & Abdul Rahman, 2025). Thus, its potential for creating holistic educational experiences that address both academic and character development. However, scholars have noted that systematic integration of these values requires intentional leadership efforts and comprehensive professional development programs (Mansor, Mat Norwani, Bahrom, & Nordin Yunus, 2015).

The implementation of the concept of Malaysia MADANI which also touches on the need to explore aspects of education is an effort to increase the dignity of the people and the country. The element of education is given attention to ensure that knowledge is a priority thus giving birth to a high Malaysian society with a culture of knowledge (Bih Ni, 2023).

### **Malaysia's National Education Philosophy: Malaysia's Educational Foundation**

Malaysia's National Education Philosophy, established in 1988, articulates the country's vision for education as a continuous effort to develop individuals holistically and integrally in all aspects including spiritual, emotional, intellectual, physical, and social based on belief and obedience to God (Ministry of Education Malaysia, 1988). The philosophy emphasizes the development of individuals who are knowledgeable, competent, possess high moral standards, and are responsible and capable of contributing to the well-being of the family, society, and nation.

Extensive research has documented the influence of National Education Philosophy on Malaysian educational practices. It's been proved that schools with strong alignment to the National Education Philosophy demonstrated better outcomes in holistic student development (Mustaffa & Abdullah, 2004).

The philosophy's emphasis on holistic development has been particularly relevant to discussions of sustainable education. Researchers have noted that the comprehensive nature of National Education Philosophy which addresses spiritual, emotional, intellectual, physical, and social development, aligns well with the multidimensional requirements of education for sustainable development (M.N. Naidu & Rajanthiran, 2021) This alignment provides a strong foundation for integrating international sustainability goals with local educational values and practices.

### **Instructional Leadership: The Bridge Between Vision and Practice**

Instructional leadership has been defined as the set of practices that leaders employ to improve teaching and learning within educational institutions. The concept encompasses three dimensions: defining the school's mission, managing the instructional program, and promoting a positive school learning climate (Murphy & Hallinger, 2013). Research has consistently shown that effective instructional leadership is associated with improved student outcomes, enhanced teacher professional development, and positive school culture transformation.

Studies have shown that instructional leaders who can effectively coordinate different educational priorities while maintaining focus on teaching and learning are more successful in creating sustainable educational improvements (Robinson, Viviane, & A. Llyod, 2008).

The integration of values-based approaches with instructional leadership has received increasing attention in the literature. Studies have shown that leaders who explicitly incorporate values and ethical considerations into their instructional leadership practices are more effective

in creating meaningful learning experiences and developing student character (Fullan, 2011). This research provides important insights for understanding how instructional leaders can effectively integrate multiple frameworks such as SDG4, MADANI values, and Malaysia's National Education Philosophy.

### **3. Method**

This study employed a conceptual and literature-based methodology designed to develop a comprehensive understanding of how instructional leadership can integrate SDG4, MADANI values, and Malaysia's National Education Philosophy in Malaysian educational contexts. The methodology was selected to enable a thorough exploration of theoretical foundations while identifying practical implications for educational practice.

#### **Literature Search and Selection**

A systematic literature search was conducted using multiple databases including ERIC, JSTOR, Google Scholar, and Malaysian educational databases. Search terms included combinations of "instructional leadership," "sustainable development goal 4," "SDG4," "MADANI values," "Malaysia's National Education Philosophy" "sustainable education," and "Malaysia education." The search covered publications from 2000 to 2025, with particular emphasis on recent literature addressing values-based education and sustainable development.

Selection criteria for literature inclusion were: (a) relevance to one or more of the key frameworks, (b) focus on educational leadership or sustainable education, (c) empirical or theoretical contributions to understanding integration approaches, and (d) quality of scholarship as determined by peer review status and citation patterns. A total of 127 sources were initially identified, with 85 sources meeting the inclusion criteria for detailed analysis.

#### **Policy Document Analysis**

Relevant policy documents from Malaysian educational authorities, United Nations agencies, and other international organizations were analysed to understand the official frameworks and expectations for each component. Key documents included the Malaysian Education Blueprint 2013-2025, UNESCO publications on Education for Sustainable Development, official MADANI concept documents, and historical materials related to Malaysia's National Education Philosophy.

#### **Conceptual Framework Development**

Through iterative analysis and synthesis, a conceptual framework was developed to illustrate the relationships between the three key components and the role of instructional leadership in their integration. This framework was refined through multiple iterations based on literature insights and logical consistency analysis.

#### **Case Example Identification**

Malaysian educational initiatives and programs that demonstrated elements of the proposed integration were identified and analysed. These cases provided practical insights into implementation challenges and successes, contributing to the development of practical recommendations.

## Theoretical Framework

### The Triadic Integration Model

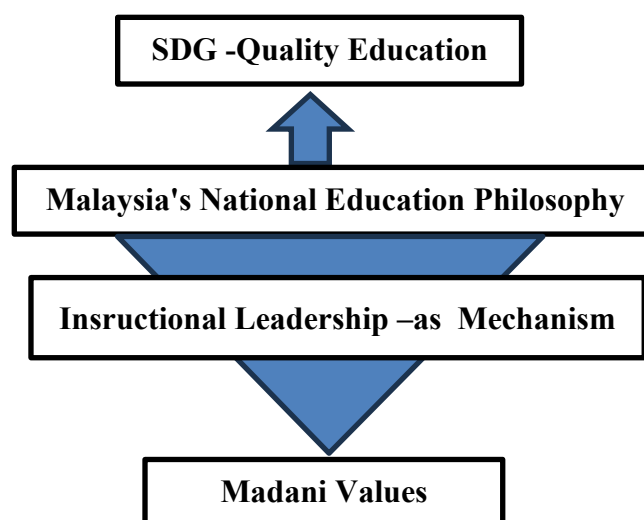
The integration of SDG4, Madani values, and Malaysia's National Education Philosophy can be conceptualized through a triadic model where instructional leadership serves as the central coordinating force. This model recognizes that effective integration requires active leadership that can navigate the complexities of multiple frameworks while maintaining focus on educational outcomes.

The model is grounded in systems theory, which emphasizes the interconnected nature of organizational components and the importance of coordination mechanisms (Senge, 2006). Applied to this context, systems theory suggests that the successful integration of multiple educational frameworks requires leadership that can understand and manage the relationships between different components while maintaining system coherence and effectiveness.

The triadic integration model identifies four key components:

1. **SDG4** provides the global context and targets for educational quality and inclusivity, establishing international benchmarks and expectations for educational outcomes.
2. **Madani values** offer the ethical and moral framework for implementation, providing guidance for how educational practices should embody values of sustainability, compassion, integrity, and mutual respect.
3. **Malaysia's National Education Philosophy** establishes the national educational philosophy and holistic development goals, ensuring that educational practices align with Malaysian cultural values and national aspirations.
4. **Instructional Leadership** serves as the integrative mechanism that translates these frameworks into educational practice, coordinating their implementation while maintaining focus on teaching and learning.

**Figure: 1 Triadic Integration Model for Sustainable Education**



**Integration Principles.** The successful integration of these frameworks rests on several core principles derived from the literature on educational change and values-based education:

**Holistic Development.** All three frameworks emphasize the importance of developing individuals comprehensively, addressing not only cognitive abilities but also emotional, social, spiritual, and ethical dimensions. This principle is explicitly stated in, implicit in the Malaysia's National Education Philosophy comprehensive nature of SDG4, and embodied in the values-based approach of the MADANI concept.

**Values-Based Education.** The emphasis on character development, moral values, and ethical behaviour is central to all three frameworks, providing a strong foundation for sustainable education. This alignment creates opportunities for reinforcing consistent messages about the importance of values in education and life.

**Cultural Responsiveness.** The integration respects local cultural contexts while embracing global perspectives, ensuring that education is both internationally relevant and culturally meaningful. This principle addresses one of the major challenges in implementing international educational goals in local contexts.

**Sustainability Orientation.** All frameworks recognize the importance of preparing individuals who can contribute to sustainable development and environmental stewardship. This shared emphasis provides a common foundation for integration efforts.

#### 4. Results and Discussion

The integration of SDG4, MADANI values, and Malaysia's National Education Philosophy under effective instructional leadership demonstrates significant potential for enhancing educational quality and inclusivity. Analysis of the literature and conceptual framework reveals that this integration addresses multiple dimensions of educational quality in ways that individual frameworks might not achieve independently.

The emphasis on knowledge acquisition and intellectual development in Malaysia's National Education Philosophy, combined with SDG4's focus on learning outcomes, creates a framework for academic excellence that is both rigorous and meaningful. The integration ensures that academic achievement is pursued within a context of values and purpose, potentially enhancing student motivation and engagement.

Moreover, the values emphasis in both MADANI and Malaysia's National Education Philosophy ensures that educational quality encompasses moral and ethical development alongside academic achievement. This dual focus addresses growing concerns about the need for education to develop not only competent individuals but also ethical citizens.

The integration ensures that education is culturally responsive and locally relevant while maintaining global perspectives and standards. This balance addresses one of the persistent challenges in educational development on how to benefit from international best practices while maintaining cultural authenticity and relevance.

The SDG4's explicit focus on inclusivity and equity is reinforced by the MADANI values of respect and compassion and the Malaysia's National Education Philosophy emphasis on developing individuals who can contribute to societal well-being. This multi-layered approach to inclusivity provides stronger foundations for addressing educational disparities.

Apart from that, the values-based approach inherent in this integration model has demonstrated potential for positive impacts on student engagement and motivation. Literature analysis reveals several mechanisms through which this integration can enhance student experiences. The integration helps students understand the broader purpose and relevance of their education, connecting classroom learning to global challenges, national values, and personal development.

Besides that, the emphasis on cultural identity and national values in Malaysia's National Education Philosophy combined with global citizenship development through SDG4, helps students develop a complex and sophisticated understanding of their identities as both local and global citizens. This identity development can provide strong motivation for learning and achievement. When educational practices explicitly embody values that students can understand and embrace, the potential for intrinsic motivation increases. The MADANI values of respect, trust, and compassion provide clear behavioural expectations while the sustainability focusses address issues that many young people find compelling.

The implementation of this integrated framework has significant implications for teacher professional development and effectiveness. Analysis reveals several ways in which the integration can enhance professional practice. Teachers develop a stronger sense of professional purpose when their work is clearly connected to meaningful values and societal goals. The integration provides a comprehensive framework that helps teachers understand the broader significance of their professional contributions. The combination of global educational goals, values-based approaches, and national educational philosophy creates opportunities for pedagogical innovation that addresses multiple dimensions of student development. This can enhance teacher creativity and professional satisfaction. The shared framework provides a foundation for building stronger professional learning communities among teachers, as they work together to implement integrated approaches that address complex educational goals.

Based on the analysis, several key implementation strategies emerge for instructional leaders seeking to integrate these frameworks. Instructional leaders must ensure that curriculum design explicitly incorporates elements from all three frameworks. This requires moving beyond superficial additions to achieve meaningful integration that enhances rather than fragments the educational experience. Comprehensive professional development programs are essential for helping teachers understand and implement integrated approaches. Such programs must address both theoretical understanding and practical skills for implementation. Apart from that, assessment practices must be aligned with the comprehensive goals of the integrated framework, measuring not only academic achievement but also character development, values internalization, and sustainability competencies. The integration requires strong partnerships with families and communities to reinforce values and provide authentic contexts for learning about sustainability and citizenship.

## **5. Challenges and Considerations**

The analysis also reveals significant challenges that must be addressed for successful implementation. The integration of three comprehensive frameworks creates significant complexity that must be carefully managed to avoid fragmentation or superficial implementation. Instructional leaders need sophisticated understanding of all frameworks and skilled change management capabilities. Successful implementation requires substantial investments in professional development, curriculum development, assessment system modification, and ongoing support systems. Many educational systems may face resource constraints that limit implementation scope or quality.



While the frameworks generally align well, there may be tensions or contradictions that require careful navigation. Instructional leaders must be sensitive to these potential conflicts and skilled in finding appropriate resolutions. Traditional assessment systems may not adequately capture the full range of outcomes associated with integrated approaches. Developing appropriate assessment methods that honour all three frameworks while providing meaningful information about student progress presents significant challenges. Ensuring that integrated approaches are sustainable over time requires attention to leadership succession, ongoing resource availability, and continued stakeholder support. Many educational innovations fail to achieve lasting impact due to insufficient attention to sustainability factors.

## **6. Implications for Practice**

Educational leaders seeking to implement this integrated approach should consider several key recommendations. Implementation should begin with comprehensive strategic planning that explicitly addresses how the three frameworks will be integrated across all aspects of school operations. This planning should involve all stakeholders and address potential challenges proactively. Substantial investments in capacity building are essential, including not only teacher professional development but also leadership development and community engagement initiatives. The complexity of the integration requires sophisticated understanding and skills from all participants.

Given the complexity of the integration, gradual implementation approaches may be more successful than comprehensive immediate changes. This allows for learning and adjustment while building capability and confidence. Regular monitoring and evaluation systems should be established to track progress and identify needed adjustments. These systems should capture both quantitative outcomes and qualitative indicators of successful integration.

Furthermore, policymakers can support this integration through several mechanisms. Educational policies should be reviewed and revised to ensure coherence with the integrated approach. Contradictory policies or misaligned incentive systems can undermine integration efforts. Adequate resources must be provided for implementation, including funding for professional development, curriculum development, assessment system modifications, and ongoing support systems. Accountability systems should be modified to recognize and reward the comprehensive outcomes associated with integrated approaches, rather than focusing solely on narrow academic measures. Policymakers should support research efforts to better understand effective implementation strategies and outcomes associated with integrated approaches.

Teacher education programs have important roles in preparing educators for integrated approaches. Teacher education curricula should be revised to address the knowledge and skills needed for implementing integrated approaches to sustainable education. Student teachers should have opportunities to observe and practice integrated approaches in authentic educational settings. Teacher education institutions should provide ongoing support for graduates implementing integrated approaches, recognizing that such complex innovations require sustained professional development.

## **7. Limitations and Future Research**

This study has several limitations that should be acknowledged. The conceptual and literature-based methodology, while appropriate for theory development, does not provide empirical

evidence of implementation outcomes. The focus on Malaysian contexts may limit the generalizability of findings to other cultural and educational settings. Additionally, the rapidly evolving nature of the MADANI concept means that some aspects of the analysis may become outdated as the concept continues to develop.

Several areas warrant future research attention will be longitudinal empirical studies examining the actual impacts of integrated approaches on student outcomes, teacher effectiveness, and community development would provide crucial evidence for practitioners and policymakers. Research examining how the integration model might be adapted for different cultural contexts within Malaysia and internationally would enhance its applicability and relevance. Studies focusing on the processes and factors that support successful implementation would provide valuable guidance for practitioners seeking to implement integrated approaches. Research focused on developing appropriate assessment tools and methods for evaluating the outcomes of integrated, values-based approaches to sustainable education is critically needed. Studies examining how instructional leaders can be prepared and supported for implementing integrated approaches would contribute to professional development program design.

## **8. Conclusion**

This analysis has examined how instructional leadership can serve as a catalyst for sustainable education through the integration of SDG4, Malaysian MADANI values, and Malaysia's National Education Philosophy. The findings reveal that this integration offers a powerful framework for creating educational experiences that are simultaneously globally relevant and locally meaningful. The triadic integration model demonstrates that effective instructional leadership can successfully bridge international educational goals with national values and educational philosophy. This integration has the potential to enhance educational quality and inclusivity while fostering the development of individuals who are knowledgeable, competent, and committed to sustainable development.

The implementation of this integrated approach requires systematic attention to curriculum design, pedagogical innovation, teacher capacity building, and school culture transformation. While significant challenges exist, including complexity management, resource requirements, and assessment difficulties, the potential benefits for students, educators, and society justify the investment required for successful implementation.

Instructional leadership emerges as the critical factor that transforms theoretical frameworks into educational practice. Through effective leadership, schools can become agents of transformation that prepare students for the challenges and opportunities of the 21st century while maintaining strong connections to their cultural heritage and national identity.

The alignment of SDG4, MADANI values, and Malaysia's National Education Philosophy offers Malaysia a unique opportunity to lead in the development of sustainable, values-based education that serves as a model for other nations seeking to balance global aspirations with local contexts and values. This approach not only contributes to the achievement of international educational goals but also strengthens national unity, cultural identity, and sustainable development capacity. As Malaysia continues to evolve as a nation committed to sustainable development and progressive values, the education sector must play a central role in this transformation. The integration model presented in this paper provides a roadmap for achieving this vision through effective instructional leadership that honours the past, addresses present challenges, and prepares for future opportunities.

The path forward requires continued commitment from all stakeholders, policymakers, educational leaders, teachers, students, and communities to work collaboratively in implementing this integrated approach. Through such collective effort, Malaysia can achieve its vision of becoming a developed nation that is not only economically prosperous but also socially cohesive, environmentally sustainable, and culturally vibrant.

Future research should focus on empirical studies of implementation processes and outcomes, development of appropriate assessment methods, and examination of leadership development needs. Such research will contribute to refining the integration model and supporting its effective implementation across diverse educational contexts.

The integration of global educational goals with local values and national educational philosophy represents a promising approach to achieving sustainable education that is both internationally relevant and culturally meaningful. Through effective instructional leadership, this integration can transform educational practices and contribute to the development of citizens who are prepared to address the complex challenges of the 21st century while maintaining strong connections to their cultural heritage and national identity.

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## 360 DEGREE INSPIRATIONAL LEADERSHIP

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**Abstract:** *Principal leadership practices have a significant relationship in developing teacher competencies, enhancing instructional effectiveness, and improving school management efficiency. The main objective of this study is to identify the extent of the principal's 360° inspirational leadership practices and their impact on developing quality teachers, student excellence, and overall school effectiveness. The research instrument adapts the Leadership Practices Inventory (LPI) developed by Kouzes and Posner (2002), which assesses leadership behaviours based on five core dimensions, such as modelling the way, inspiring a shared vision, challenging the process, enabling others to act, and encouraging the heart. This study employs a case study approach supported by both quantitative and qualitative data. A total of 59 teachers from Malaysian Art School of Johor in 2025 were involved as respondents. The findings indicate that the overall level of the principal's leadership practices, based on both self-assessment and teacher (observer) evaluations, is high, with average scores exceeding 88.3%. The self-assessment scores ranged from 88.3% to 93.33%, while teacher evaluations ranged from 87% to 91.4%. The highest-rated dimension was "encouraging the heart" (91.4%), and the lowest was "enabling others to act" (87%). The implementation of 360° inspirational leadership has had a positive impact on school achievements, including an excellent in SPM 2024 with GPS score 1.49, a PAJSK score of 1.22, an SK@S 2024 Excellent School Rating of 86.09%, and the successful development of seven Excellent Teachers and four candidates between 2022 and 2025. The study recommends strengthening transformational leadership practices based on the Kouzes and Posner model to further enhance school leadership quality.*

*Keywords: Leadership, Inspiration, Quality Teachers, Student Achievement, Effective Schools.*

### 1. Introduction

The principal's leadership plays a crucial role in developing teachers, enhancing the quality of teaching and learning, and ensuring effective school management. An effective principal focuses on a clear educational vision and mission, continuous professional development, and building a strong culture of synergy and collaboration among school members (Leithwood et al., 2004). As an inspirational and transformational leader, the principal motivates teachers and creates a supportive working environment that encourages innovation in teaching and learning. Principals leadership that emphasizes curriculum and professional support has a significant impact on student achievement (Robinson et al., 2008). According to Hallinger & Heck (1998), instructional leadership by the principal can indirectly influence student outcomes through the development of teacher capacity. Therefore, the principal acts as a strategic change agent, working in partnership with teachers to holistically improve the quality of education.

The Ministry of Education has set a clear direction in cultivating competent and charismatic educational leaders through various strategic initiatives. One such initiative is the implementation of the *National Professional Qualification for Educational Leaders (NPQEL)*,

a mandatory professional training program for aspiring principals or headteachers, conducted by the Aminuddin Baki Institute (IAB). The *NPQEL* program emphasizes strategic thinking, instructional leadership, change management, and professional development. In addition, the leadership capacity of school principals continues to be strengthened through the *School Educational Leadership Compass Module 2.0* (KOMPAS 2.0). This serves as a guide for the holistic and continuous development of leadership competencies, encompassing six main domains.

The *Malaysian School Principals Leadership Standard* has been developed as a benchmark for principal competency in the areas of strategic leadership, curriculum and instruction, as well as effective resource management (MoE, 2020). This initiative reflects the Ministry of Education's commitment to ensuring that every school leader is equipped with the necessary leadership and management skills grounded in strong values, in line with the goals of the National Education Philosophy. According to the 2023 circular issued by the Inspectorate of Schools, Ministry of Education, regarding the implementation of self-assessment for the Malaysia Education Quality Standard Quality@School, known as "SK@S", principals are expected to act as the lead drivers of their schools. They are responsible for planning the school's vision and managing it based on three core domains: *Our Strengths, Our Management, and Our Achievements*. The SK@S framework is used to assess school quality based on five main standards. For the purpose of this study, the focus is on Standard 1: Leadership. Within this domain, principals must serve as leaders, mentors, and motivators in cultivating a high-performance work culture aimed at positioning the school as an inspirational institution.

The key issue lies in whether school leaders have a direct impact on the progress of a school or not. This matter can be discussed and examined through the perspective of New York Times writer Fred M. Hechinger (1989), who stated, "*There is no excellent school led by a weak leader, and no weak school led by an excellent leader. A weak school can become excellent under the leadership of an outstanding principal.*" Therefore, educational leadership plays a crucial role in the success or failure of a school. The leadership of a principal is vital in determining the direction and success of a school, often directly. Effective leadership has a significant impact on student achievement through its indirect influence on school culture, teacher instruction, and the learning environment (Hallinger & Heck, 1998). Meanwhile, Bass & Avolio (1994) assert that principals who practice transformational leadership styles are able to enhance teacher motivation and foster a collaborative culture that is conducive to student development.

Many scholars and researchers agree that the leadership behaviours of principals have a significant impact on teachers' motivation, inspiration, and confidence in delivering effective teaching and learning. Principals who demonstrate empathy, fairness, firmness, and provide professional support are able to create a positive and conducive working environment. Leithwood & Jantzi (2000) stated that transformational leadership through practices of inspiration, influence, and intellectual stimulation can enhance teacher commitment and job satisfaction. Principals who embody moral leadership and professional role modelling cultivate respect and trust among teachers towards school leadership, thereby instilling a greater sense of dedication in fulfilling their responsibilities (Sergiovanni, 2001). When teachers feel valued and their voices are heard, they are more likely to be innovative and proactive in their teaching practices. Open and supportive leadership behaviours that foster a positive culture, encourage professional development, and recognise teacher achievements contribute to enhancing teachers' intrinsic motivation (Fullan, 2001). Therefore, the inspirational leadership behaviours of a principal can serve as a key catalyst for student success and overall school excellence.

**360° Inspirational Leadership** refers to a holistic leadership approach by the principal that influences all members of the school community from all directions in an integrated manner, both internally and externally, simultaneously. This approach emphasizes inspiration, motivation, empathy, and positive influence in building a progressive school culture. Bass & Riggio (2006) stated that transformational leaders inspire through a clear vision, belief in teachers' potential, and by serving as role models to the school community. Leaders who practise the principles of trust, motivation, inspiration, and appreciation are able to create a positive environment and empower teachers to grow both individually and professionally. Fullan (1992) asserted that inspirational leadership contributes to a school climate that supports meaningful and collaborative learning. As a result, the school becomes more effective when everyone feels valued and is mobilized collectively. Consequently, more committed and excellent teachers will emerge within the school.

360° Inspirational Leadership not only nurtures dedicated teachers but also drives comprehensive transformation towards a high-quality education system. Among the key characteristics of 360° inspirational leadership are the ability to listen actively, provide professional guidance, offer recognition and appreciation, and foster a positive and collaborative working environment. The principal acts as a change agent by granting autonomy to teachers, encouraging pedagogical innovation, and providing opportunities for professional development training. The leadership practice theory by Kouzes & Posner (2002) serves as a guide for leaders to achieve their vision or accomplish extraordinary outcomes. These leadership traits align with the qualities reflected in the *Leadership Practices Inventory (LPI)* developed by Kouzes and Posner (2002). The LPI outlines five core dimensions: *Model the Way*, *Inspire a Shared Vision*, *Challenge the Process*, *Enable Others to Act*, and *Encourage the Heart*. Leaders who consistently and faithfully practise these five behaviours are capable of building a supportive, inspiring, and achievement-oriented ecosystem. The direct impact of such leadership can be seen in the improved quality of teaching among educators (Kouzes & Posner, 2002).

The main objective of this study is to identify the extent to which principals' 360° inspirational leadership practices impact the development of quality teachers, student outcomes, and effective schools. Therefore, the *Leadership Practices Inventory (LPI)* serves as an objective diagnostic and assessment tool to enable educational leaders to engage in deep self-reflection and to develop competencies and character that align with those of their teachers.

Beyond the leadership of the principal, we must also consider the motivation and character of the teachers in the school. There are five factors that influence an individual's motivation to work: achievement, recognition, work environment, personal growth, and responsibility (Herzberg, 1966). These factors are known as intrinsic factors or motivators related to job satisfaction itself. When these aspects are fulfilled, they can enhance a person's motivation and job satisfaction; otherwise, the opposite may occur. Teacher self-efficacy refers to a teacher's confidence in their ability to successfully carry out teaching and learning tasks. It is the teacher's belief in facing challenges and problems in the classroom and achieving the desired learning outcomes for their students. Therefore, this study focuses on examining the leadership behaviour of principals and its impact on instructional effectiveness, student outcomes, and management competency.

## 2. Literature Review

School achievement is closely related to the leadership and management of the principal. According to Mansor & Hamzah (2015), high-performing leaders possess the ability and competence to create an organizational climate geared towards excellence by leveraging their influence over the school community. A review of studies shows that one of the key factors determining the success and effectiveness of a school depends on its leader (Che Mohd Syaharuddin et al., 2017). This view is supported by Johansson et al. (2014), who state that good leadership influences followers to achieve the organization's goals.

High-performing principals must always be aware of the current situation, possess the skills to stimulate the intellectual thinking of their teachers, act as agents of change, foster a healthy work culture, continuously monitor and evaluate the effectiveness of school practices, and their impact on student learning (Waters et al., 2003). This view is supported by Megat & Abd Halim (2017), who state that principal leadership is important to ensure that every action positively influences more consistent ethical behaviour among teachers in the school.

**Figure 1: The Relationship Between Principals' 360° Inspirational Leadership and Its Impact on Teachers in the Context of Teaching and Learning Quality.**

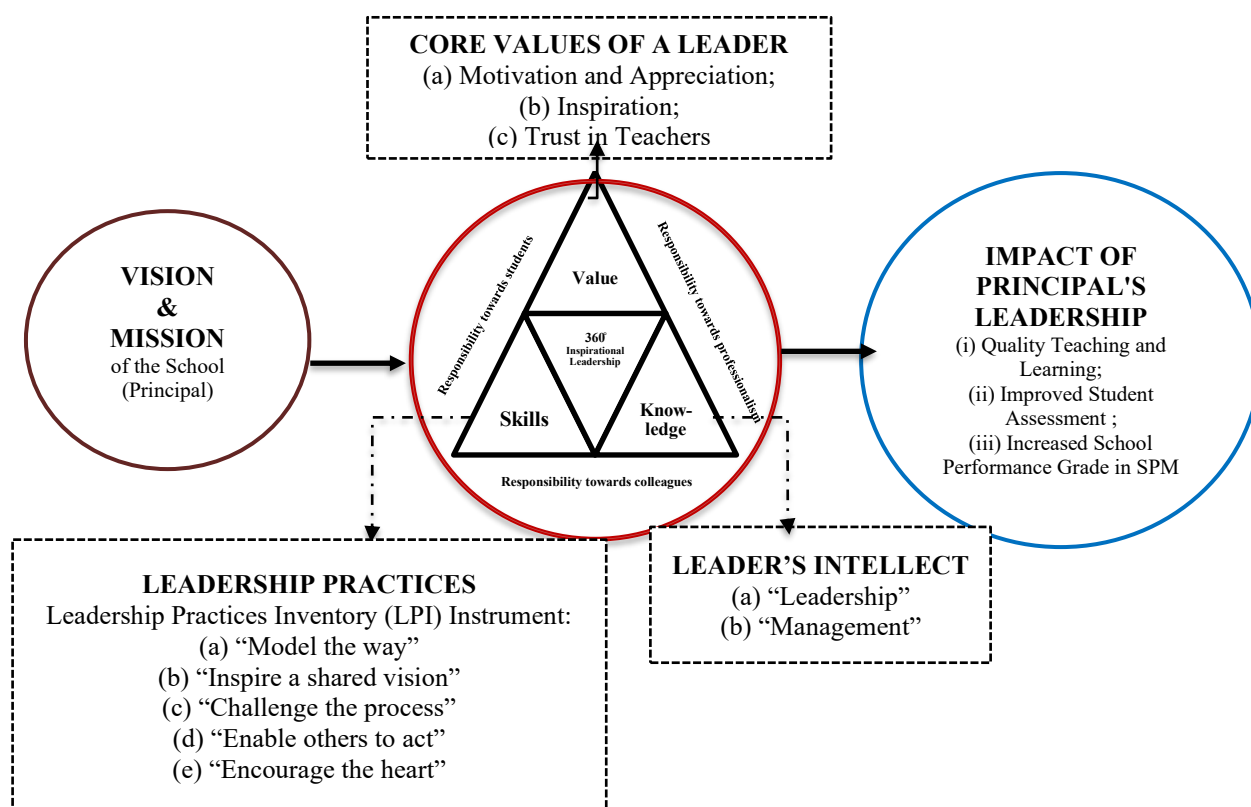


Figure 1 illustrates the relationship between principals' 360° inspirational leadership and its impact on teachers in enhancing the quality of teaching and learning. An inspirational principal plays a vital role in shaping a positive school culture through the practice of humanistic values, empowerment in leadership and management knowledge, as well as the strengthening of professional skills and competencies. This aligns with the establishment of the school's vision and mission aimed at achieving the ultimate goal of ensuring quality education, strong mastery of student assessment, and excellent school performance as reflected in the cumulative grade



point average in national examinations such as the Malaysian Certificate of Education (SPM). In the process of achieving these success goals, the core values upheld and leadership practices become important and critical. Such leadership encourages teachers to be more innovative, collaborative, and passionate in carrying out **teaching and learning**, thereby contributing to student development and overall school success. The *Leadership Practices Inventory* instrument adapted in this study covers five main dimensions, such as *model the way, inspire a shared vision, challenge the process, enable others to act, and encourage the heart* (Kouzes & Posner, 2002).

School principals need to adopt a new pedagogical mindset and narrative that align with the demands of dynamic globalization and advanced technological developments. Principals must be skilled in planning and guiding effective instructional practices while considering the personalities and professional styles of their teachers. In essence, principals need to understand their teachers well so that quality teaching and learning can take place and positively impact student learning.

A study by Yahya et al. (2016) on factors influencing high-performing leadership in schools found that excellent principals should have their own distinctive leadership styles in administering and leading schools. Fullan (2015) stated that principals play a crucial role in schools because their leadership styles influence change and innovation within the school. Abd Wahab Muda et al. (2018) noted that the characteristics of high-performing leaders include mastery of policies and directions, instructional development, managing change and innovation, resources and operations, human relations, and self-efficacy. High-performing leaders possess traits such as competence and effectiveness in carrying out tasks, strong personal integrity, and extensive knowledge (Mansor & Hamzah, 2015). Besides that, Abdullah & Ismail (2018) similarly emphasized that a leader's ability to achieve the vision and mission is an indicator of the strength and quality of their leadership.

The principal is an education service officer who holds specific authority, responsibilities, and accountability. Their leadership style will impact the school's ecosystem and culture. This situation influences the effectiveness of teaching and learning processes and innovations. Therefore, the principal's behaviour affects teachers and indirectly impacts academic achievement (Beach & Reinhartz, 2002). This view is supported by Haris & Bennett (2001), who state that leadership is a key factor in determining the success and effectiveness of an organization. In summary, leaders influence their followers to achieve the organization's goals and vision, both directly and indirectly.

### 3. Research Methodology

This study employs a case study approach supported by both quantitative and qualitative data. A total of 59 teachers from Malaysian School Art of Johor in 2025 participated as respondents. The study uses a survey approach to examine the relationship between the influence of principals' leadership practices (independent variable) and teacher motivation (mediating variable) on student achievement. The study adapts the Leadership Practices Inventory (LPI) instrument by Kouzes and Posner (2002) to assess principals' leadership behaviours based on five main dimensions: modelling the way, inspiring a shared vision, challenging the process, enabling others to act, and encouraging the heart.

#### 4. Results

The focus of this study is on the extent to which principals' 360° inspirational leadership practices impact the development of quality teachers, student outcomes, and effective schools. The findings indicate a significant and positive mediating relationship between principals' leadership practices, teacher motivation, and student achievement.

**Figure 2: Summary of Principals' Self-Assessment Scores on Leadership Practices in Schools.**

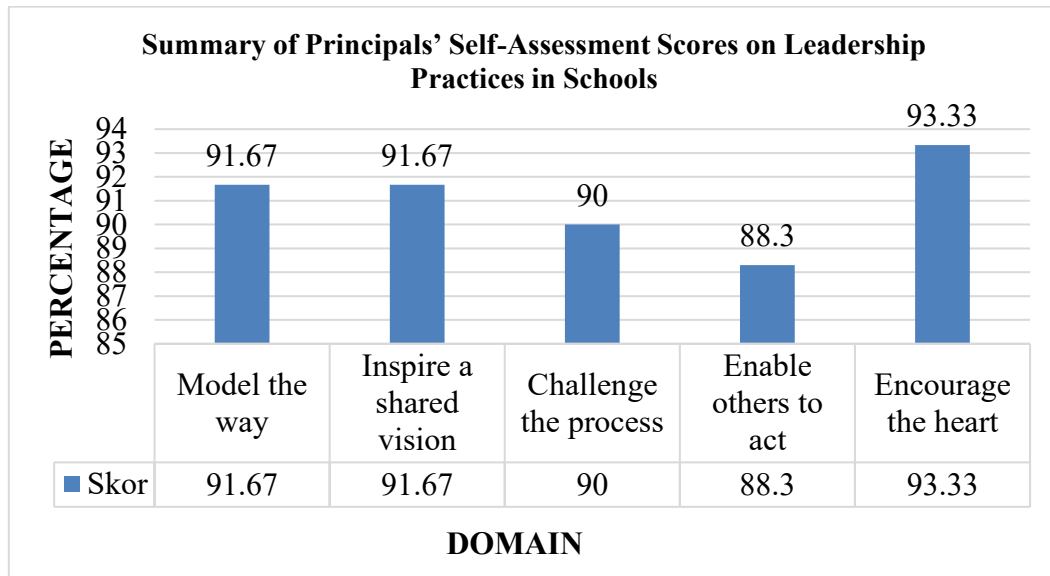


Figure 2 above shows the principals' self-assessment of their leadership practices. The highest scoring domain is encouraging the heart (93.33%), followed by modelling the way and inspiring a shared vision (91.67%). The lowest score is in enabling others to act (88.3%), indicating that while principals recognize their strengths in motivation, the aspect of building cooperation and collaboration within the institution needs improvement. Leithwood & Jantzi (2006) suggest that there are both direct and indirect effects of inspirational and transformational leadership practices on teachers' practices, which in turn have direct and indirect effects on student achievement.

**Figure 3: Summary of Teachers' Assessment Scores (Observers) on the Principals' Leadership Practices in Schools.**

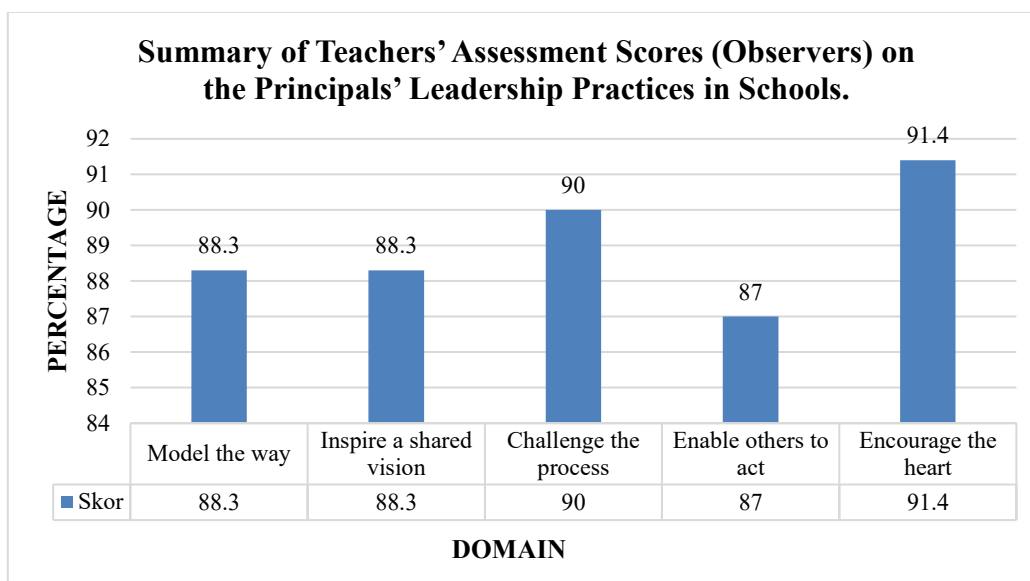


Figure 3 above presents the summary data of teachers' assessment scores (observers) on the principals' leadership practices in schools. The findings show that the highest scoring domain is encouraging the heart (91.4%), followed by challenging the process (90%). The lowest scoring domain is enabling others to act (87%). This indicates that principals consistently motivate and inspire teachers by giving appreciation and recognition; however, they need to strengthen collaboration and synergy among teachers.

A close relationship between the principal and teachers to ensure the smooth implementation of the teaching and learning process is a primary task that must be carried out in schools. Each leadership practice dimension in the Leadership Practices Inventory (LPI) instrument by Kouzes and Posner (2002) can influence teachers in delivering quality instruction. Principals' leadership can affect student achievement through the intermediary of professional teachers. This is supported by the fact that motivated teachers with high self-efficacy are more likely to implement classroom innovations. Such teachers tend to use effective classroom management approaches, apply effective teaching and learning methods, and promote student autonomy in learning (Muijs & Reynolds, 2002).

**Figure 4: Relationship Between Principals' Self-Assessment Scores and Teachers' (Observers') Assessment Scores in the Context of Principals' Leadership Practices in Schools.**

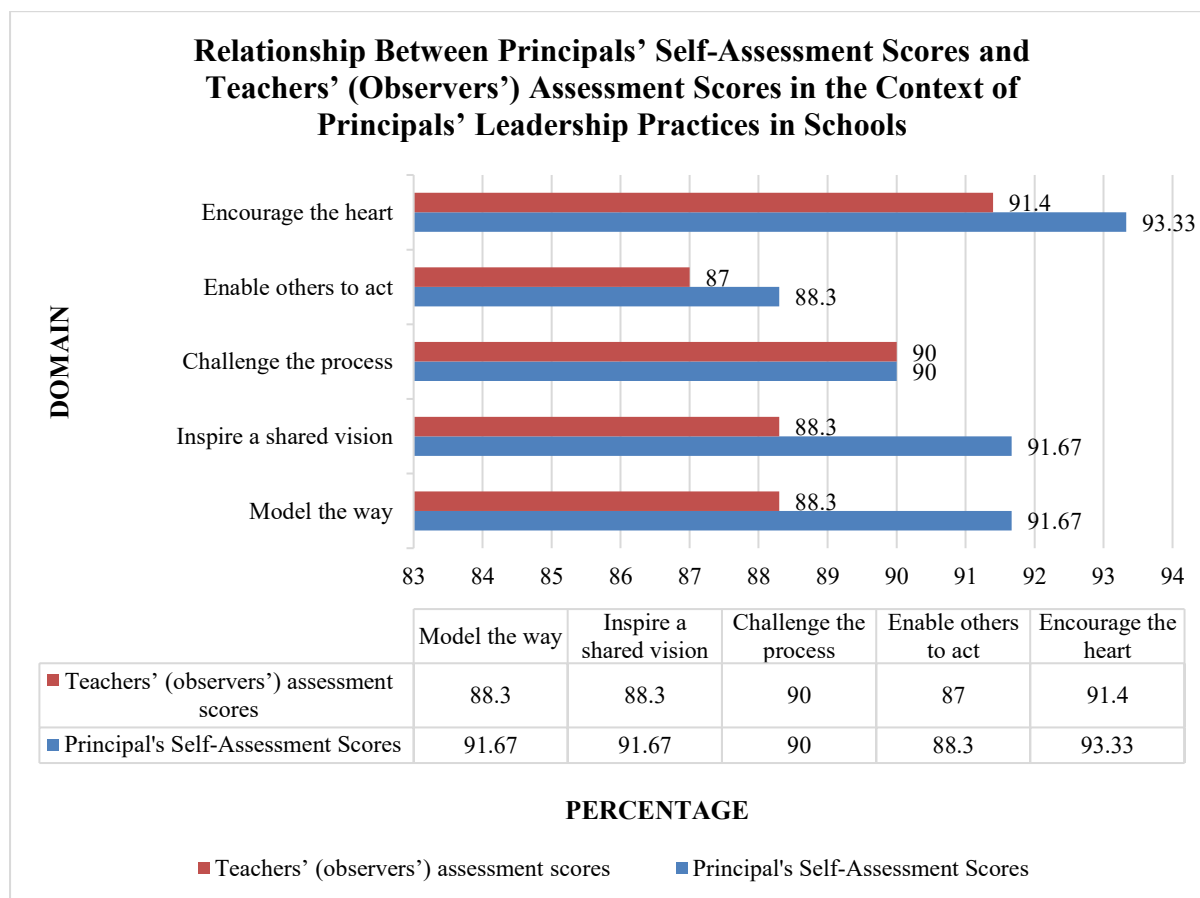


Figure 4 above illustrates the relationship between principals' self-assessment scores and teachers' (observers') assessment scores regarding principals' leadership practices in schools. There are significant differences in the domains of modelling the way and inspiring a shared vision, with principals rating themselves higher (91.67%) compared to teachers (88.3%). Data alignment only occurs in the domain of challenging the process (90%). The average scores exceeding 88.3% for both respondent groups reflect teachers' positive views toward the implementation of principals' leadership practices. This indicates the credibility and consistency of principals in carrying out their leadership roles at school.

Qualitative findings and teachers' reflections also reveal that the majority of teachers have positive perceptions of principals' leadership practices across these five domains. Overall, all teachers were very satisfied with the principal's role model, especially in supporting and motivating teachers by giving a certificate of appreciation at the weekly school assembly. This is important because, according to Leithwood et al. (2004), consistent perceptions of leadership indicate alignment between the leader's vision and the practices experienced by teachers in their daily work. Kouzes and Posner (2002) argue that leaders who practice these dimensions tend to inspire positive energy within the organization by recognizing individual and group achievements. This enhances intrinsic motivation and teachers' work enthusiasm.

This support aligns with Sergiovanni (1990) findings that moral and emotional recognition from leaders fosters a deeper sense of commitment among teachers than material rewards. Continuous recognition not only builds harmonious professional relationships but also creates a supportive work climate that values each individual's contributions within the school ecosystem. Kouzes and Posner (2002) emphasize that effective leaders not only give directions but also create opportunities for others to actively participate in decision-making and implementation.

## 5. Discussion and Conclusion

Overall, the findings of the study indicate a high level of principal leadership practice based on Kouzes and Posner's (2002) *Leadership Practices Inventory* (LPI). The results demonstrate that effective principal leadership plays a crucial role in shaping a competitive, inspiring, and supportive school ecosystem. By strengthening collaboration through empowerment and trust in the school community, leaders can maximize the potential of all members toward achieving excellent student outcomes.

The 360° Inspirational Leadership practice has had a significant positive impact on the overall school performance. This is evidenced by the outstanding GPS in Malaysian Certificate of Education (SPM) 2024 achievement (1.49), PAJSK 2024 score (1.22), and the self-rating status of the Excellent School SK@S 2024 with an achievement score of 86.09%, surpassing the 85% benchmark. Noraida Mohd Nor (2005) study found that teachers exhibit high and positive motivation toward principals who encourage and inspire them to improve excellence in the curriculum. This view is supported by Hughes et al. (2006), who assert that schools striving for excellence heavily depend on leaders with high competency levels, especially in curriculum management and teaching and learning processes. This is because school leadership is the second most important factor after classroom teaching in determining students' academic success (Leithwood et al., 2004). Principals who inspire and support teacher development directly enhance teaching quality, which in turn positively influences student performance in the long term.

Furthermore, the school principal has successfully built the professional capacity of teachers by producing seven Excellent Teachers and four Excellent Teacher candidates between 2022 and 2025, which serves as evidence and reflects high-impact leadership. Burns (1978), in his theory of transformational leadership, emphasized that effective leaders are able to awaken high potential in their followers, provide encouragement, and open pathways for career development. Principals who offer space, guidance, appreciation, and recognition to teachers not only empower them professionally but also enhance teaching effectiveness. The personal qualities demonstrated by the principal have increased teachers' motivation and readiness to implement changes in teaching and learning activities to improve academic achievement and overall school excellence (Jaafar et al., 2022).

The 360° inspirational leadership practiced by the principal has shown a significant impact on the school's achievements across all aspects comprehensively. This leadership approach emphasizes two-way relationships between the principal and all levels of the school community in an environment of synergy, collaboration, networking, and ongoing strategic cooperation. The findings prove that the principal's leadership practices have had a direct and integrated effect on the school's success in academics, co-curriculum, institutional ratings, and the professional development of educators. This approach highlights the effectiveness of the

principal's leadership as the key driver of a supportive, competitive, and sustainable school ecosystem. Excellent teachers at the school are able to educate students better and more effectively.

Hoy and Miskel (2001) stated that there is a significant relationship between a leader's behavior and the behaviour of group members in managing the curriculum, as well as a significant relationship between leaders who prioritize directive behaviours and teacher job satisfaction. Consistency is the key to inspirational leadership that transforms the ordinary into excellence. Educational leaders do not become great naturally; rather, it is about consistently holding firm to daily efforts, especially the principles of motivation, inspiration, and placing trust in their teachers. Drucker (1985) expressed the view that there is a significant relationship between a principal's leadership practices and the effectiveness of organizational management because the principal serves as a key driving force in the school. This view is supported by the study of Zaidatol Akmaliah & Foo (2007), which states that the principal's ability to motivate, plan, and collaborate in implementing programs in the school leads to outstanding success aligned with the school's goals.

In the context of suggestions and improvements regarding the principal's leadership practices, respondents believe that the principal should possess an open mind and a positive attitude. This is beneficial for being receptive to all suggestions and opinions from the school community with an open heart, willing to listen to the voices of teachers, students, and parents alike. A good balance across all five dimensions demonstrates that the principal has a comprehensive and responsive leadership style to teachers' needs. Leithwood et al. (2006) emphasized that schools led with an inspirational approach exhibit better student achievement as well as a healthier and more supportive school ecosystem. However, given the slightly lower score in the aspect of building cooperation, respondents suggested the need for specific strategies to strengthen dialogue, professional collaboration, and more comprehensive empowerment. Professional development programs based on Professional Learning Communities (PLC) could serve as a medium to enhance this dimension.

Today's education is increasingly complex, dynamic, and rapidly changing. The researcher hopes that the leadership practices of school principals will continue to be strengthened. This is because every behaviour of the school principal is constantly observed by the school community, parents, the wider community, and stakeholders. Schools require principals who are authoritative and possess high resilience to lead the school toward excellence. It should be remembered that the success of a school does not rest solely on the shoulders of any one principal; rather, it requires the support of all parties. Without support, trust, and cooperation, it is difficult for a leader to make progress and successfully implement every initiative. Moral support from stakeholders is crucial. It is recommended that the transformational leadership approach based on the Kouzes and Posner Model continues to be practiced in order to further enhance the quality of impactful school leadership. In Short, it turns out that the five dimensions of leadership practices in the Kouzes and Posner model can describe 360 inspirational leadership well and comprehensively, as experienced by the researcher himself.

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# COACHING WITH PURPOSE: BRIDGING THEORY AND PRACTICE IN DEVELOPING MIDDLE LEADERS IN MATHEMATICS EDUCATION

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**Abstract:** *This action research examines how theory-informed coaching can enhance the instructional leadership capacity of middle leaders in mathematics education. While coaching is often rooted in practical experience, this study argues that integrating educational theory, namely Adult Learning Theory and Instructional Leadership can ensure a more intentional, reflective, and values-driven practice. The research was implemented in two cycles. In the first cycle, coaching relied primarily on established practices and experiential knowledge. In the second cycle, Newman Error Analysis (NEA) was introduced as a structured, research-based diagnostic tool to help middle leaders identify and interpret students' mathematical errors. This integration enabled middle leaders to engage in deeper professional dialogue, provide more targeted support to teachers, and formulate precise strategies to improve student outcomes. The findings indicate that theory-based coaching, coupled with a practical diagnostic framework such as NEA, enhances middle leaders' capacity to guide teaching and learning, promotes professional reflection, and fosters a values-oriented approach to leadership. The study contributes to educational leadership discourse by demonstrating that coaching grounded in theory can transform leadership practice while addressing the diverse learning needs of students.*

*Keywords: Coaching, Instructional Leadership, Middle Leaders, Newman Error Analysis, Mathematics Education*

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## 1. Introduction

One of the main strategies in the Public Service Reform Agenda (ARPA) is to enhance knowledge, skills, and capabilities in the public services through coaching and mentoring, to develop efficient, competitive, and strategically-minded human capital to adapt to current and future challenges (Implementation Coordination Unit, Prime Minister's Department, 2024). As in Ministry of Education, this effort is carried out by School Improvement Specialist Coaches (SISC+) as outlined in the Malaysian Education Blueprint 2013-2025. Since 2019, SISC+ guidance has focused on middle leaders in schools. Middle leaders, consisting of senior teachers and subject committee heads, needs to act as role models and implement instructional leadership to improve teaching and learning outcomes (Beram, Awang, & Ismail, 2020). However, a study by Din (2021) found that middle leaders play less of a role in improving teacher quality in improving student achievement. Initial observations also indicated that most middle leaders relied primarily on personal teaching experiences and did not use theoretical frameworks in their coaching.

Coaching has emerged as a key strategy for enhancing instructional leadership and teacher professional development. Yet, research suggests that middle leaders often depend on experience rather than structured theoretical approaches. In Malaysia, Rahman, Abdullah,

Kenayathulla and Gurusamy (2023) reported that instructional coaching among middle leaders was moderately effective, while Musa, Ahmad and Abdullah (2024) highlighted the need for structured strategies to sustain their impact. International studies further indicate that leaders who integrate research-informed frameworks achieve greater impact on teaching and student outcomes than those relying solely on experience (Sexton & Lamb, 2019; Phillips, McElwain & Clemmer, 2016). These findings suggest a critical gap in bridging theory and practice in middle leaders' coaching especially Senior Science and Mathematics Teacher (GKSM) in secondary schools.

Mathematics is widely recognized as a foundation of 21st-century learning especially to equip students with problem solving, systematic, and critical thinking skills. However, misconceptions among students continue to hinder achievement. Addressing these challenges requires not only effective classroom teaching but also strong instructional leadership that can guide teachers in their practices. GKSM as heads of department plays a crucial role in this process, serving as a bridge between school leadership and classroom practice. In mathematics education, this gap is particularly significant, as student misconceptions are complex and require more than general teaching advice to resolve. Newman's Error Analysis (NEA) provides a systematic framework for diagnosing errors at various stages of problem solving, offering both theoretical grounding and practical application. While NEA has been widely used by teachers to understand student errors, little research has examined its potential as a coaching tool for middle leaders. Using NEA in coaching could therefore create a shared framework for professional dialogue, bridging the gap between theory and practice in coaching mathematics teachers.

Thus, this study aims to examine how bridging theory and practice in coaching can strengthen the instructional leadership among GKSM. It explores (i) How GKSM integrate personal teaching experience with theoretical frameworks? (ii) How coaching enhances their leadership capacity? and (iii) How NEA can serve as a practical tool to bridge theory and practice in coaching mathematics teachers?

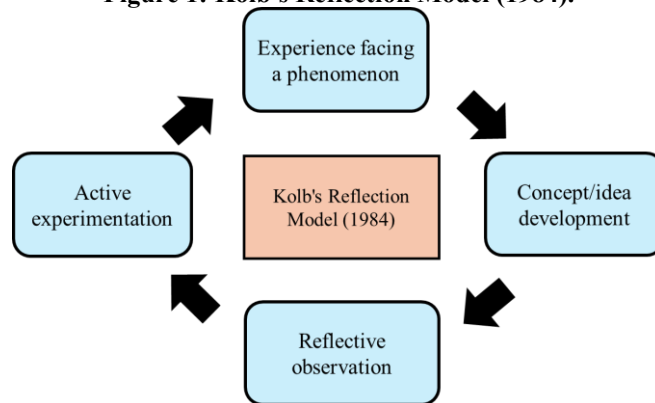
## **2. Literature Review**

### ***Theoretical Underpinnings of Coaching***

Coaching as a professional learning strategy is most effective when based on sound educational theory to explain how adults learn and how leadership influences teaching and learning. According to Clawson (1997), adult learning theorist such as Kolb (1984) and Knowle (1980) suggested that adult learning acquire knowledge, emphasizing experience, reflection, and self-direction as central to effective learning. Adult learning is problem-centered, internally motivated, and shaped by prior experiences and coaches must design learning environments that respect autonomy, encourage critical thinking, and connect theory with practice, thereby enhancing both personal growth and workplace performance (Clawson, 1997). Two central frameworks that underpin this study are Kolb's Reflection Model (1984) and Instructional Leadership Theory. Together, they provide a theoretical basis for understanding how middle leaders can engage in purposeful and reflective coaching practices.

Kolb's Reflection Model (1984) serves as the reference conceptual framework in this study where action is using the process of seeing, thinking and acting. Kolb's Reflection Model (1984) is an experiential learning model. This model includes four main steps, namely experience facing a phenomenon, reflective observation, concept or idea development, and active experimentation. Figure 1 shows the four steps of Kolb's Reflection Model (1984).

**Figure 1: Kolb's Reflection Model (1984).**



The other framework that underpins this study is instructional leadership that explained by Hallinger and Murphy (1985) which emphasizes middle leaders' role in coaching teaching and learning through professional collaboration to ensure high-quality instruction. According to Murphy, Hallinger & Mitman (1983), there are two dimensions of instructional leadership: (i) functions that include setting school goals, supervising instruction, coordinating curriculum, monitoring student progress, promoting teacher development, protecting instructional time, and fostering incentives, (ii) processes, that involve communication, decision-making, conflict management, group dynamics, change facilitation, and environmental interaction. From this perspective, middle leaders are positioned not only as administrators but also as key instructional leaders who support teachers in refining pedagogy. Coaching, when informed by this theory, becomes a mechanism for leaders to influence classroom practice systematically. In mathematics education, this role is critical, as middle leaders are expected to help teachers address misconceptions and improve learning outcomes.

Adult learning emphasises the need for coaching to be intentional, reflective, and values driven. Coaching that merely replicates experience-based practices may lack depth, while coaching that integrates theory provides structured opportunities for critical reflection and instructional improvement (Barkley, 2024; Houchens, Stewart, & Jennings, 2017). This theoretical grounding provides the foundation for introducing Newman's Error Analysis as a practical tool that operationalises the link between theory and practice in mathematics education.

### ***Newman's Error Analysis (NEA) as a Diagnostic Tool***

Understanding students' misconceptions is central to improving mathematics teaching and learning. One widely recognised framework for diagnosing student errors is Newman's Error Analysis (NEA), first introduced by Newman (1977). NEA identifies five stages where students may encounter difficulties when solving mathematical problems namely reading, comprehension, transformation, process skills, and encoding. By systematically analysing errors at each stage, teachers and leaders are able to pinpoint not only what mistakes students make but also why these mistakes occur. In mathematics classrooms, errors are often treated as isolated mistakes rather than as windows into students' thinking. White (2010) suggests that educators should move beyond surface-level correction by uncovering the cognitive processes behind errors. For example, a student's failure to solve a problem may not stem from weak process skills but from misinterpreting the question at the comprehension stage. This allows teachers to plan for interventions and differentiated support. In this way, NEA contributes to more meaningful teaching and learning by treating errors as opportunities for growth rather than shortfalls.

In leadership contexts, NEA has been shown to strengthen coaching conversations between middle leaders and teachers. By framing discussions around a structured tool, leaders can shift from offering general advice to facilitating evidence-based professional dialogue (Lou et al., 2023). This fosters reflective practice, as teachers are encouraged to reexamine their assumptions about student learning. Moreover, NEA equips middle leaders with a shared language for discussing student misconceptions, thereby enhancing their instructional leadership capacity. When applied in coaching, NEA thus serves as a powerful mechanism for bridging theory and practice, supporting both teacher growth and improved student outcomes.

### ***Related Studies***

Studies on coaching in education demonstrate its potential to enhance teacher practice and build reflective school cultures (Barkley, 2024; Houchens, Stewart, & Jennings, 2017). However, many findings also reveal that coaching often relies heavily on personal teaching experience and lacks explicit integration of educational theory (Lou et al., 2023). This reliance may limit the depth and sustainability of instructional improvement. Research on middle leadership further shows that middle leaders hold significant influence over professional learning through mentoring, collaborative planning, and modelling of instructional strategies (Tang, Bryant, & Walker, 2023). Yet, these studies also report challenges in balancing administrative duties with pedagogical leadership and a lack of structured frameworks to guide their coaching. Similarly, studies on adult learning provides a strong theoretical basis for intentional, reflective, and values-driven coaching, but fewer studies explicitly examine how these theories are applied in the daily practices of middle leaders in mathematics education.

Newman's Error Analysis (NEA) provides a systematic framework to classify errors, from reading and understanding questions to applying processes and presenting answers (White, 2010). Clement and Ellerton (1996) identified two main causes: weaknesses in language fluency and concept understanding, and problems in mathematical processing. Students often repeat the same mistakes in mathematics examinations, yet these errors are rarely analyzed in terms of where and why they occur (Abdullah & Zainal Abidin, 2015). Study by Abdul Rahman and Abd Hamid Effendy (2019) confirmed that NEA's usefulness in identifying errors such as transformation and process skill mistakes. Applying NEA helps teachers enhance teaching effectiveness and reduce student misconceptions. While NEA has been applied in mathematics education to support teachers' understanding of student learning difficulties, little research has explored how it can be leveraged by middle leaders as part of coaching to enhance instructional leadership capacity.

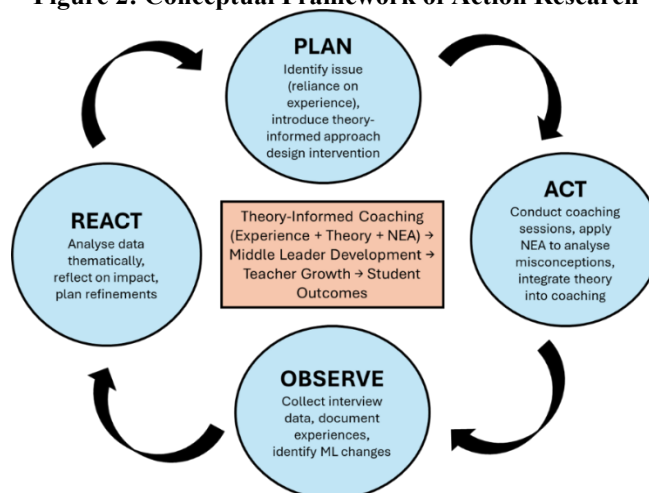
In summary, while the literature affirms the value of coaching, middle leadership, and theory-informed approaches, a significant gap remains in understanding how middle leaders can operationalise theory-based frameworks such as NEA to strengthen their instructional leadership in mathematics education. This study addresses that gap by investigating how theory-informed coaching, specifically through the integration of NEA, can transform the coaching practices of middle leaders, foster professional reflection, and ultimately improve teaching and learning outcomes.

### **3. Research Methodology**

This study employed an action research design, guided by the cyclical framework of plan, act, observe, and reflect as proposed by Kemmis and McTaggart (1988). Action research was selected because it allows practitioners to systematically improve their own practices while

generating insights relevant to their professional context. The primary aim of the study was to enhance the instructional leadership practices of middle leaders in mathematics education through theory-informed coaching. The intervention emphasized the use of Newman's Error Analysis (NEA) as a pedagogical framework to bridge theoretical understanding with practical coaching strategies.

**Figure 2: Conceptual Framework of Action Research**



The research was conducted in six secondary school in Kota Setar District chosen purposively due to strengthen the instructional leadership of middle leaders or GKSM. GKSM are responsible for supporting mathematics teachers, yet their coaching practices were found to rely primarily on personal teaching experience rather than theoretical frameworks. This context provided a suitable environment for introducing theory-informed coaching and evaluating its impact on professional practice. Six middle leaders in mathematics were chosen based on two criteria, (i) they were actively involved in coaching mathematics teachers, and (ii) had prior experience conducting instructional coaching sessions. This selection ensured that participants could provide meaningful insights into the integration of theory within their coaching practices. Data were collected primarily through semi-structured interviews, which allowed participants to elaborate freely on their experiences and perceptions. The interview questions explored the role of theory and experience in coaching, the applicability of NEA in understanding students' mathematical errors, challenges in integrating theoretical frameworks with school practices, and the types of support needed to strengthen theory-informed coaching.

The research was conducted in four phases, consistent with the action research cycle. In the planning phase, the issue of reliance on personal experience over theory was identified, and a theory-informed coaching intervention was designed. During the acting phase, coaching sessions were conducted where participants engaged with theoretical insights, case discussions, and the application of NEA to analyze students' errors. In the observing phase, semi-structured interviews were conducted to capture participants' perceptions, reflections, and challenges. Finally, in the reflecting phase, the interview data were analyzed to assess the effectiveness of the intervention and to inform strategies for future practice.

Data analysis followed thematic analysis as outlined by Braun and Clarke (2006). Interviews were audio-recorded and transcribed verbatim. Initial codes were generated to capture significant ideas, which were then organized into themes aligned with the study objectives. The analysis process produced qualitative narratives that highlighted participants' experiences and reflections in integrating theory-informed coaching into their professional practices. Overall,

the thematic analysis provided insights into the effectiveness of the intervention and informed recommendations for enhancing middle leaders' instructional leadership in mathematics education.

#### **4. Result**

From the analysis, there are three main findings based on three questions as mentioned above:

- (i) How GKSM integrate personal teaching experience with theoretical frameworks?
- (ii) How coaching enhances their leadership capacity? and
- (iii) How NEA can serve as a practical tool to bridge theory and practice in coaching mathematics teachers?

##### ***Integration of Personal Teaching Experience with Theoretical Frameworks***

The analysis revealed that middle leaders tend to rely on their personal teaching experience as the main reference point when guiding teachers. However, most participants acknowledged that theory-based coaching offered new perspectives that complemented their experience. For example, one respondent noted, *"I often use my experience, but theoretical guidance gives me clearer steps to explain to teachers."* This indicates that the integration of experience and theory is seen as mutually reinforcing, where theory provides structure while experience offers contextual depth. Respondents reported that the coaching sessions prompted them to think critically about their own leadership approaches, often leading to greater awareness of personal strengths and areas for development. Many indicated that they engaged in professional reflection more frequently after the coaching, and several were motivated to share reflective practices with their peers. This indicates that theory-informed coaching not only shaped their instructional decision-making but also instilled a culture of continuous self-evaluation and collective learning within their leadership teams.

##### ***Coaching Enhances Leadership Capacity***

Participants generally agreed that theory-informed coaching enhanced their instructional leadership. They reported that the use of theory, such as Newman's Error Analysis (NEA), gave them practical strategies that could be immediately implemented in the classroom, which in turn helped them support teachers more effectively. Moreover, theory-based coaching was seen as a catalyst for developing new perspectives, broadening their understanding of teaching and learning, and equipping them with alternative lenses through which to evaluate and guide instructional practices. Importantly, many middle leaders indicate that this form of coaching increased their confidence in carrying out their responsibilities, reinforcing the idea that theory is not an abstract concept but a practical tool for professional growth. One participant expressed, *"After these sessions, I feel more confident in leading my colleagues and making instructional decisions."* Another added, *"Theory-based coaching gave me practical guidance that I could immediately apply in the classroom."* This demonstrates that coaching does not only build professional competence but also strengthens leadership identity among middle leaders.

##### ***NEA as a Tool to Bridge Theory and Practice***

Participants viewed Newman's Error Analysis (NEA) as a practical framework to connect theory with classroom practice. Findings of this study show positive reception of Newman's Error Analysis as a framework for understanding students' misconceptions in mathematics. While some highlighted challenges, such as teacher readiness and time constraints, many valued NEA for its clarity in identifying students' misconceptions. Respondents agreed that most of the error started from the basic that is reading, and most of the time ignored by the

teachers. Reading errors occurred when students could not recognise certain words or symbols, which prevented them from proceeding to the next step. Respondents were given interview excerpt between researcher and one student as shown in Table 1. A respondent reflected, “*NEA helps me to guide teachers in understanding where students go wrong and how to correct them systematically even at the very basic, that is reading.*”

**Table 1: Example of Interview Excerpt**

<p>Item 1a. Lakarkan graf bagi <math>y =  3 \sin 2x </math> bagi <math>0 \leq x \leq 2\pi</math>. <i>Sketch the graph of <math>y =  3 \sin 2x </math> as <math>0 \leq x \leq 2\pi</math></i></p> <p>Interview Excerpt (In = Interviewer, R11 = Respondent 11): In: Let’s look at question 1a. Can you read the question aloud? R11: Sketch the graph of y equals... how do I say this, teacher? (points to the modulus sign) In: Okay... that’s fine. Do you not know or you can’t remember how to read it? R11: I don’t know, teacher... (smiles) In: Do you want to try? R11: (shakes head) In: Have you ever seen a symbol like this before? R11: I think so... but I can’t remember, teacher. Even though R11 was given a chance to read the trigonometric function, the student could not read the modulus symbol. According to Newman’s Error Analysis, this is classified as a reading error.</p>
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In sum, the findings reveal that theory-informed coaching has the potential to empower middle leaders by enhancing their instructional leadership, fostering reflective practices, and equipping them with tools like Newman’s Error Analysis to address student learning needs. At the same time, the results highlight the challenges of contextual adaptation, time limitations, and teacher readiness, which must be addressed to fully realize the benefits of coaching. By balancing theory and experience, and by ensuring continuous support and training, coaching can serve as a powerful bridge between research and classroom practice in the development of mathematics middle leaders.

## 5. Discussion and Conclusion

This study is to explore how theory-informed coaching strengthens middle leaders’ instructional leadership in mathematics education. The findings revealed three important insights: (i) middle leaders integrate personal teaching experiences with theoretical frameworks to refine their leadership practice; (ii) coaching serves as a catalyst for enhancing their leadership capacity through reflection, collaboration, and goal setting; and (iii) the use of the NEA framework emerges as a practical tool to bridge theory and practice in guiding mathematics teachers. These findings confirm the importance of connecting theory with practical, extend current understandings of coaching as a developmental process for middle leaders, and challenge traditional views that often separate leadership from classroom instruction.

### ***Finding 1: Integration of Personal Teaching Experience with Theoretical Frameworks***

This study found that middle leaders relied mainly on their personal teaching experience when coaching, which gave them credibility and practical insights that teachers could easily connect with. At the same time, they also recognized that experience alone was not enough and that

theory could strengthen their coaching by providing structure, depth, and consistency. This supports Rahman et al. (2023), who noted that instructional coaching among Malaysian middle leaders was only moderately effective because it leaned too much on experience without theory. Sexton (2019) similarly found that Australian middle leaders who relied only on teaching backgrounds struggled to make lasting changes, while those who used research-based frameworks had greater impact on teachers' growth and student learning. The present study extends these insights by showing that middle leaders are starting to see theory not as a replacement for experience but as a necessary complement, helping them balance practical wisdom with more reflective, sustainable coaching practices.

From a theoretical perspective, this result connects well with Kolb's Reflection Model (1984), which explains how people learn by moving between experience and reflection. Middle leaders started with their concrete experiences as classroom teachers, which gave them confidence and practical experience. But when they recognized the importance of theory, they began moving into reflection and abstract thinking, where they could connect their experience to clearer frameworks. This shows an important shift, middle leaders are not relying only on their instincts anymore, but are starting to use theory to guide their coaching in a more thoughtful and effective way.

The value of this finding is that middle leaders are open to changing the way they coach by combining their classroom experience with theory. Past research in Malaysia showed that coaching often relied too much on personal experience (Rahman et al., 2023), while Lou et al. (2023) also found that teacher-coaches mostly drew on practice and struggled to apply theory. This study adds a new perspective by showing that middle leaders are not only aware of this limitation but also ready to improve. They recognize that theory gives structure and depth, and some are already beginning to use it in their coaching conversations. Viewed through Kolb's Reflection Model, this shift shows how middle leaders move from relying on concrete experience toward reflection and abstract thinking, where practice and theory come together. This blending strengthens their coaching, making it both practical and reflective, and paves the way for more purposeful and sustainable instructional leadership in mathematics education.

***Finding 2: Theory-informed coaching enhances Leadership Capacity***

The second key finding shows that middle leaders viewed theory-informed coaching as a way to strengthen their instructional leadership. By using theoretical frameworks, they were able to move beyond surface-level mentoring and engage teachers in more reflective and purposeful conversations. This gave them greater confidence in their leadership role and helped them guide teachers toward better classroom practices. The finding supports Musa et al. (2024), who showed that middle leaders in Malaysian schools contribute strongly to building professional learning organizations when their practices are structured and collaborative, but also noted that many lacked clear frameworks to sustain this influence. International research echoes this point such as, Phillips et al. (2016) found that professional development grounded in theory, especially reflective approaches, was more effective in creating lasting improvements in teaching and student outcomes than practice-only models. Taken together, these studies reinforce the present finding that when coaching bridges personal experience with theory, middle leaders can exercise stronger, more confident, and more sustainable instructional leadership.

Theoretically, this result connects closely to Instructional Leadership Theory (Hallinger & Murphy, 1985), which positions leaders as catalysts for improving teaching and learning through structured, intentional actions. By applying theory in coaching, middle leaders shift



from being informal mentors to becoming strategic instructional leaders, guiding teacher practice with evidence-based approaches. This theoretical grounding gives coaching greater legitimacy and coherence, while also reinforcing the leaders' role as agents of instructional improvement within their schools.

Middle leaders often began coaching by drawing on their own classroom experience, offering practical guidance that teachers could easily relate to. This approach reflects Barkley's (2024) view that effective coaching should make practice easy to apply while also grounding it in theory to ensure long-term impact. The contribution of this finding is that it goes beyond earlier studies: while past research showed that theory-informed coaching benefits teachers, this study shows that it also develops middle leaders themselves. By bringing theory into their coaching, participants not only supported teachers better but also strengthened their own reflective capacity and leadership identity. This suggests that coaching should be seen not only as a tool for teacher growth but also as a way to build lasting instructional leadership among middle leaders, especially in mathematics education where theory is important for solving complex learning challenges.

***Finding 3: Newman's Error Analysis (NEA) as a Tool to Bridge Theory and Practice in Coaching Framework***

The third finding shows that middle leaders responded positively to Newman's Error Analysis (NEA) as a useful framework for understanding students' misconceptions in mathematics. They explained that NEA provided a clear step-by-step process for identifying errors across five stages namely reading, comprehension, transformation, process skills, and encoding. Middle leaders valued NEA not only as a classroom tool for diagnosing mistakes but also as a framework for coaching conversations, giving them a shared language for professional dialogue with teachers. This suggests they saw NEA as more than a teaching strategy, but as a practical way to connect theory with practice in their leadership role. While past research, such as White (2010) and Lou et al. (2023), has shown the effectiveness of NEA in helping teachers design targeted interventions, most studies have focused only on classroom application. In contrast, little attention has been given to NEA from a leadership perspective. In Malaysia, although research has highlighted the importance of middle leaders in professional learning (Rahman et al., 2023; Musa et al., 2024), the use of structured frameworks like NEA in coaching has been overlooked. The positive response in this study therefore points to new potential: reframing NEA not just as a teaching tool but also as a leadership tool that strengthens both instructional practice and professional growth.

Carrone and LeBoeuf (2025) high light that real learning happens when people actively engage, reflect, and solve real-world problems, moving through experience, reflection, conceptualization, and experimentation with feedback and collaboration. This aligns with the findings of this study, where middle leaders reported that theory-informed coaching, particularly through Newman's Error Analysis (NEA) helped them reflect more deeply, build confidence, and make better instructional decisions. The innovation of this study lies in showing that NEA, usually seen only as a classroom tool, can also be used as a leadership tool. Middle leaders applied NEA as a shared framework in coaching to guide discussions, support reflection, and strengthen leadership capacity. This demonstrates that theory-informed tools can shift coaching from informal advice-giving to a structured, evidence-based process that improves both teacher practice and student outcomes.

This study shows that middle leaders can strengthen both instructional practice and their own leadership identity by integrating experiential knowledge with theory through tools like NEA.

It underscores the need for structured, evidence-based coaching approaches in schools and suggests embedding theory-informed coaching into professional development programs to build stronger leadership capacity in mathematics and STEM education. Next cycle of this action research could broaden the scope across schools or districts, include classroom observations and teacher outcomes to triangulate findings, explore the use of other tools like NEA, and examine the long-term effects of theory-informed coaching on teacher growth and student achievement.

In conclusion, this study shows that purposeful, theory-informed coaching can transform middle leadership in mathematics education by bridging the gap between practical experience and educational theory. Tools such as Newman's Error Analysis not only strengthen instructional leadership but also help build a culture of professional learning in schools. At the same time, real challenges such as time pressures, contextual constraints, and varied teacher receptiveness can hinder the limit of full application of theory in practice. To address these, middle leaders need sustained training, ongoing support, and flexible strategies that balance theory with practical realities. By doing so, coaching can move beyond surface-level mentoring to become a powerful driver of teacher growth, stronger leadership, and improved student learning outcomes, contributing both to Malaysian priorities and international efforts to strengthen educational leadership.

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# TRANSFORMING TRADITIONAL CLASSROOMS WITH MINECRAFT EDUCATION IN OVERCOMING BARRIERS THROUGH GAME-BASED LEARNING: A CASE STUDY

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**Abstract:** *This case study investigates the educational potential of Minecraft Education Edition (M:EE) by examining two student-led projects implemented in a Malaysian pre-university context: An Odyssey Through History and St Basil's Cathedral. Both cases illustrate how game-based learning can overcome barriers commonly associated with traditional classrooms, including limited engagement, restricted collaboration, and constrained creativity. In An Odyssey Through History, the team recreated prominent Melaka heritage landmarks such as Dutch Square, Jonker Street, A Famosa, and the Straits Mosque. Through this process, students demonstrated cultural appreciation, resilience, and negotiation skills as they worked collaboratively to address design challenges and adapt Minecraft's block-based system to represent complex architectural details. The project fostered a strong sense of pride in local heritage while simultaneously developing teamwork and communication competencies. The second case, St Basil's Cathedral, emphasized design thinking and gamification. Students employed graph-paper planning, iterative prototyping, and problem-solving strategies to construct the cathedral's intricate onion domes and colorful exterior. To enhance interactivity, they integrated playful elements such as bells, snowball machines, and archery targets, which boosted motivation and sustained engagement. Despite challenges in scaling and time management, the students highlighted the importance of trust, collaboration, and creative resilience in completing the project. Across both cases, teacher reflections confirmed the pedagogical value of Minecraft Education in fostering inclusivity, differentiated learning, and 21st-century competencies. These findings suggest that integrating Minecraft Education into mainstream curricula could inform future pedagogical reforms by promoting inclusivity, sustainability, and student-centered learning approaches.*

*Keywords: Game-Based Learning, Minecraft Education, Student Engagement, Collaborative Learning, Digital Pedagogy*

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## 1. Introduction

Traditional classrooms around the world continue to face persistent challenges that hinder meaningful learning. Teacher-centered approaches, rote memorization, and examination-driven practices often result in disengagement, limit opportunities for collaboration, and restrict creativity. In Malaysia, these issues are reflected in policy documents such as the Malaysia Education Blueprint 2013–2025, which emphasizes the need to cultivate higher-order thinking, creativity, and global competencies. Similar concerns are echoed globally by UNESCO, which identifies inclusivity, equity, and innovation as essential core values for transforming education in the 21st century. By aligning with both national aspirations and international frameworks, this study highlights how classroom-level innovation with Minecraft can inform broader educational reform and 21st-century teaching strategies.

One promising pathway is the integration of game-based learning (GBL), where digital platforms are used to engage learners in playful yet purposeful ways. Among such tools, Minecraft Education Edition (M:EE) has emerged as a versatile medium for fostering creativity, collaboration, and problem-solving. As a sandbox environment, Minecraft allows students to design, build, and explore, thereby shifting the classroom dynamic from passive reception to active construction of knowledge. Scholars such as Prensky (2001) argue that such approaches resonate with digital-native learners who expect interactivity and relevance in their learning experiences. Moreover, research on Minecraft highlights its potential to enhance cultural understanding, design thinking, and resilience (Nebel, Schneider, & Rey, 2016; Checa-Romero, 2018).

This study situates Minecraft Education within the broader global agenda of sustainable development. UNESCO's Sustainable Development Goal 4 (SDG 4) calls for inclusive and equitable quality education and lifelong learning for all, while SDG 11 emphasizes the need to make cities and communities inclusive, safe, resilient, and sustainable. These goals intersect directly with the projects examined in this paper. Team SS18's *An Odyssey Through History* recreated Melaka's heritage landmarks, thereby contributing to cultural preservation and awareness of local identity. Meanwhile, Team Christmas Buddies' *St Basil's Cathedral* project engaged students with global architecture, highlighting the challenges of design and the importance of sustainable communities. Both cases illustrate how Minecraft Education can serve not only as a classroom tool but also as a platform for engaging students with issues of cultural heritage, global citizenship, and sustainability. These goals directly link to educational reform, suggesting that classroom innovation with tools like Minecraft can ripple outward to support national and global policy priorities.

The research adopts a comparative case study approach to explore these themes. Case studies provide a powerful method for examining complex educational practices in authentic contexts (Yin, 2018). The two cases selected offer contrasting yet complementary insights. *An Odyssey Through History* focused on local heritage, illustrating how game-based learning can deepen cultural pride and connect students with their national history. *St Basil's Cathedral*, on the other hand, emphasized global architecture and gamification, showing how learners can engage with international perspectives while exercising creativity and design thinking. By aligning with national aspirations such as the Malaysia Education Blueprint 2013–2025 and international frameworks like UNESCO's SDGs, this study demonstrates how classroom-level innovation with Minecraft can inform broader educational reform and 21st-century teaching strategies. By examining both cases together, this paper demonstrates how Minecraft Education addresses barriers common in traditional classrooms while simultaneously advancing the broader aims of UNESCO and the SDGs.

## **2. Literature Review**

Game-Based Learning (GBL) has emerged as a promising educational approach in the digital age. It capitalizes on the motivational, immersive, and interactive qualities of games to enhance student engagement and learning outcomes (Prensky, 2001; Qian & Clark, 2016). Unlike traditional teaching, where learning is often passive and instructor-centered, GBL positions learners as active participants who problem-solve, experiment, and reflect in authentic contexts. Research has consistently shown that digital games can foster persistence, resilience, and higher-order thinking (Gee, 2008; Annetta, 2010). GBL is particularly relevant for developing the 21st-century skills emphasized in global policy frameworks. These include the

“4Cs”: communication, collaboration, creativity, and critical thinking (Partnership for 21st Century Skills, 2019). Digital games provide opportunities to practice these competencies in safe, simulated environments. For example, collaborative multiplayer games encourage teamwork and negotiation, while sandbox-style games stimulate innovation and design thinking. The theoretical underpinnings of this study rest on constructivist and social constructivist perspectives. Piaget’s (1970) constructivism emphasizes active knowledge construction, while Vygotsky (1978) stresses peer collaboration and the Zone of Proximal Development. These theories provide a lens for understanding how Minecraft enables learners to build knowledge socially and iteratively.

Minecraft Education exemplifies these theories by offering immersive environments where students can build, collaborate, and test hypotheses in real time. Since its release, Minecraft Education Edition has been adopted worldwide in diverse educational contexts. In the United States, teachers have used Minecraft to teach history by having students recreate ancient civilizations (Short, 2012; Pang, 2021; Lai et al., 2024). In Europe, Minecraft has been integrated into STEM lessons, such as modeling DNA structures and simulating environmental systems (Nebel, Schneider, & Rey, 2016; Slattery, 2025). Pilot projects, such as the Heritage Immortalised Minecraft Championship 2021-2023, demonstrated how Minecraft can be leveraged for both STEM literacy and cultural preservation. [Added] Together, these global cases illustrate a broader trend of mainstreaming game-based learning in national curricula.

### **3. Methodology**

This study adopted a qualitative case study design to explore the educational impact of Minecraft Education Edition (M:EE) on student learning. A case study approach was considered appropriate because it enables an in-depth examination of complex phenomena within authentic contexts (Yin, 2018). Case studies are particularly useful for educational research because they foreground “particularization” over generalization—enabling researchers to highlight meaningful examples that can inspire broader pedagogical reflection. In this paper, two cases were selected for detailed examination: An Odyssey Through History (Team SS18) and St Basil’s Cathedral (Team Christmas Buddies). The comparative design allowed for contrasts between a local heritage-focused project and an international cultural monument project, providing insights into how Minecraft supports different dimensions of cultural and cognitive learning.

#### **3.1 Participants and Context**

The cases were chosen from the project submission in Heritage Immortalised Minecraft Championship 2022. The students volunteered to take part in the competition, a nation-wide initiative designed to integrate game-based learning into classroom practice while promoting cultural awareness.

##### **Case 1: Team SS18 – An Odyssey Through History**

This team consisted of five students who collaborated to reconstruct Melaka’s iconic landmarks, including Dutch Square, Jonker Street, A Famosa, and the Straits Mosque. Their goal was to showcase Malaysia’s cultural heritage through Minecraft while practicing teamwork and problem-solving.

##### **Case 2: Team Christmas Buddies – St Basil’s Cathedral**

Also composed of five students, this team selected St Basil’s Cathedral in Moscow, Russia. Their project was distinctive for its emphasis on design thinking, careful planning, and

gamification. Students incorporated interactive features such as snowball machines, bells, and archery targets to enhance engagement. Both teams worked over a six-week period, balancing project demands with their academic timetable. Teachers acted as facilitators, guiding the process but allowing students autonomy in design and execution.

### **3.2 Case Selection Rationale**

These two cases were chosen through purposeful sampling (Patton, 2002). Team SS18 was selected because their project directly connected with the Malaysian history curriculum and reflected local cultural identity, making it highly relevant for national education goals such as the Malaysia Education Blueprint 2013–2025, which emphasizes appreciation of heritage and higher-order thinking. Team Christmas Buddies, on the other hand, was selected because their project represented a global perspective, demonstrating how students could engage with international cultural icons while applying design thinking. Their inclusion provided contrast, showing how M:EE can support both local and global dimensions of learning. Together, these cases offered a balanced view of Minecraft's educational potential. Both teams present the projects aligned with the theme to preserve the UNESCO world heritage sites.

### **3.3 Data Collection**

To capture the richness of the cases, multiple sources of data were collected. This ensured methodological triangulation (Denzin, 1978), strengthening validity by providing multiple perspectives on the same phenomenon. At the end of the six-week project, students completed surveys designed to measure their perceptions of engagement, collaboration, motivation, and problem-solving confidence. A five-point Likert scale was used, enabling descriptive comparisons of self-reported learning outcomes. Student outputs were systematically examined, including Minecraft builds, graph-paper sketches, and project notes and videos. These artifacts provided tangible evidence of learning processes, creativity, and the application of problem-solving strategies. For example, Team SS18's landmark recreations were assessed for cultural accuracy, while Team Christmas Buddies' plans illustrated systematic design thinking. Semi-structured focus group discussions were conducted with each team. Students reflected on their experiences, described challenges, and articulated learning outcomes in their own words. Open-ended questions encouraged narrative responses, revealing insights that could not be captured by surveys alone.

### **3.4 Data Analysis**

Post-survey responses were tabulated and summarized using descriptive statistics. Means and percentage distributions were calculated for each construct (engagement, collaboration, motivation, problem-solving confidence). These results provided an overview of students' self-perceived learning gains. While for document analysis, student artifacts were analyzed for evidence of design thinking, creativity, and accuracy. For example, the fidelity of landmark recreations, the use of block improvisation, and the incorporation of gamified features were examined. Notes and sketches were reviewed to trace iterative design processes. Focus group and individual student interview transcripts were analyzed using Braun and Clarke's (2006) six-phase framework: familiarization, coding, generating themes, reviewing themes, defining/naming themes, and producing the report. Codes were generated inductively, meaning they emerged from the data rather than being imposed a priori. For instance, recurring references to "fun," "pride," and "teamwork" became codes that were later grouped under broader themes such as Engagement, Cultural Awareness, and Collaboration. Findings from surveys, artifacts, and interviews were cross-checked to identify convergence or divergence. For example, survey results showing high collaboration scores were compared with student

narratives about teamwork and with evidence from the builds themselves. This triangulation increased confidence in the interpretations.

## 4. Results and Findings

This section presents the outcomes of the study by integrating quantitative evidence from the post-surveys with qualitative insights drawn from student artifacts, focus groups, and interviews. The combination of both strands provides a holistic understanding of how Minecraft Education Edition (M:EE) shaped student engagement, collaboration, creativity, and cultural awareness.

### 4.1 Post Survey Results

To measure students' overall perceptions of learning with Minecraft Education, a post-survey was administered at the end of the six-week intervention. The instrument consisted of twelve items distributed across four constructs: Engagement, Collaboration, Motivation, and Problem-Solving Confidence. Each item was rated on a five-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). The aggregated results are presented in Table 1.

**Table 1: Post-Survey Results of Student Perceptions (n = 10)**

Construct	Mean Score (1–5)	% Agree/Strongly Agree	Interpretation
Engagement	4.5	91%	Students found Minecraft lessons enjoyable and motivating.
Collaboration	4.6	94%	Students reported high levels of teamwork and peer support.
Motivation	4.4	89%	Students felt encouraged to learn actively and persist.
Problem-Solving Confidence	4.3	87%	Students gained confidence in applying strategies.

The survey findings indicate overwhelmingly positive perceptions across all four constructs. Engagement scored a mean of 4.5, with 91% of students agreeing that Minecraft made learning more enjoyable. This resonates with Prensky's (2001) notion of digital natives, who are more engaged by interactive and playful environments than by traditional lectures. Collaboration achieved the highest score (M = 4.6, 94%), suggesting that the group-based design of Minecraft activities effectively cultivated teamwork. This finding reflects Vygotsky's (1978) social constructivist principle that peer interaction and dialogue enhance learning. Motivation also showed strong results (M = 4.4, 89%). Students reported being motivated to persist through challenges, echoing Qian and Clark's (2016) observation that game-based learning environments sustain effort by making tasks both enjoyable and purposeful. Problem-Solving Confidence scored slightly lower (M = 4.3, 87%) but remained highly positive. Students indicated that the project enhanced their confidence in tackling complex problems. This aligns with research by Nebel, Schneider, and Rey (2016), who found that Minecraft supports inquiry-based learning and problem-solving through iterative experimentation.

Overall, the survey data confirm that Minecraft Education Edition was perceived as a highly engaging, collaborative, and motivating learning tool, with notable contributions to students' confidence as problem-solvers.



## 4.2 Thematic Analysis

While the survey provided a broad overview of perceptions, qualitative analysis of student interviews, focus groups, and artifacts offered richer insights into the learning process. Thematic analysis was conducted following Braun and Clarke's (2006) six-phase framework, resulting in five overarching themes: Engagement and Motivation, Collaboration and Teamwork, Creativity and Critical Thinking, Cultural Awareness, and Challenges and Problem-Solving. The progression from raw codes to categories and final themes is presented in Table 2.

**Table 2: Coding Framework for Thematic Analysis**

Codes	Categories	Themes	Example Quotes
"It was fun to play while learning"	Enjoyment & intrinsic interest	Engagement & Motivation	"I never thought history could be this fun—I was actually excited to research details so we could build it accurately." (Team SS18)
"We looked forward to every session"	Anticipation & excitement	Engagement & Motivation	"I felt excited to come to class because we knew we would be building something new in Minecraft." (Team Christmas Buddies)
"We had to divide roles"	Role distribution	Collaboration & Teamwork	"No one could finish a project this big alone—we had to depend on each other." (Team Christmas Buddies)
"We argued but then combined ideas"	Negotiation & compromise	Collaboration & Teamwork	"At first we disagreed on how to build A Famosa, but we merged our ideas and it looked even better." (Team SS18)
"We found creative ways with limited blocks"	Improvisation & adaptation	Creativity & Critical Thinking	"Even though the blocks were limited, we discovered new techniques to represent the domes." (Team Christmas Buddies)
"We used graph paper to plan"	Systematic design planning	Creativity & Critical Thinking	"Before building the cathedral, we sketched on graph paper to calculate the right proportions." (Team Christmas Buddies)
"I felt proud to rebuild Jonker Street"	Sense of ownership & identity	Cultural Awareness	"By recreating Melaka's landmarks, I felt proud of our heritage and understood why we must preserve it." (Team SS18)
"We added snowball machines and bells"	Gamification & innovation	Engagement & Motivation	"The mini-games made it more interactive—we were learning but also having fun." (Team Christmas Buddies)
"Server crashed and we lost progress"	Technical barriers	Challenges & Problem-Solving	"We were frustrated at first, but then we restarted and found faster ways to rebuild." (Team SS18)
"Time was running out"	Time management	Challenges & Problem-Solving	"We had to speed up and trust each other to finish the cathedral before the deadline." (Team Christmas Buddies)

### Engagement and Motivation

Students consistently described Minecraft lessons as enjoyable and exciting. For Team SS18, the heritage focus made history come alive: "I never thought history could be this fun—I was actually excited to research details so we could build it accurately." For Team Christmas Buddies, the anticipation of building and experimenting with interactive features sustained their interest: "I felt excited to come to class because we knew we would be building something new in Minecraft." These findings reinforce Prensky's (2001) argument that game-based learning environments align with the expectations of digital-native learners, making lessons more engaging.

### **Collaboration and Teamwork**

Collaboration emerged as a central theme across both cases. Students highlighted the necessity of dividing roles, negotiating disagreements, and trusting one another to complete the project. As one member of Team Christmas Buddies observed: “No one could finish a project this big alone—we had to depend on each other.” Similarly, a student from Team SS18 reflected on how conflict was resolved productively: “At first we disagreed on how to build A Famosa, but we merged our ideas and it looked even better.” These narratives align with Vygotsky’s (1978) emphasis on the social nature of learning and support findings by Karsenti and Bugmann (2017), who reported enhanced teamwork in Minecraft classrooms.

### **Creativity and Critical Thinking**

Creativity was particularly evident in students’ ability to adapt within the constraints of Minecraft’s block-based environment. Team Christmas Buddies showcased systematic design thinking by planning their cathedral on graph paper before construction: “Before building the cathedral, we sketched on graph paper to calculate the right proportions.” Both teams demonstrated critical thinking when improvising with limited resources or solving scaling challenges. This reflects Checa-Romero’s (2018) observation that Minecraft fosters creative problem-solving through cycles of prototyping, testing, and revising.

### **Cultural Awareness**

For Team SS18, cultural pride was a strong motivator. Students reported a heightened sense of identity while reconstructing Melaka’s heritage sites: “By recreating Melaka’s landmarks, I felt proud of our heritage and understood why we must preserve it.” The project deepened their appreciation of history and strengthened their connection to local culture, echoing findings from heritage-based Minecraft initiatives in Southeast Asia. Team Christmas Buddies, though focused on an international monument, engaged with global cultural identity and architectural symbolism, broadening their worldview. Together, these cases illustrate Minecraft’s dual potential for fostering both local and global cultural awareness.

### **Challenges and Problem-Solving**

Despite positive outcomes, students also faced challenges. Technical issues such as server crashes caused frustration: “We were frustrated at first, but then we restarted and found faster ways to rebuild.” Time management was another difficulty, particularly for Team Christmas Buddies: “We had to speed up and trust each other to finish the cathedral before the deadline.” These accounts reveal that problem-solving extended beyond the virtual environment into project management and interpersonal skills. This finding supports Nebel et al.’s (2016) review, which noted that Minecraft cultivates resilience by framing obstacles as opportunities to iterate and improve.

## **4.3 Document Analysis**

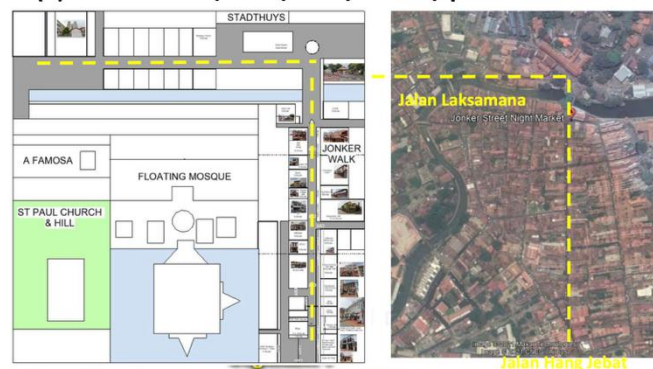
The document analysis focused on student-created artifacts, including in-game Minecraft builds, planning sketches, and project notes and presentation videos. These outputs provided tangible evidence of how students applied creativity, design thinking, and problem-solving strategies during the project. Three main findings emerged:

### **4.3.1 Evidence of Design Thinking**

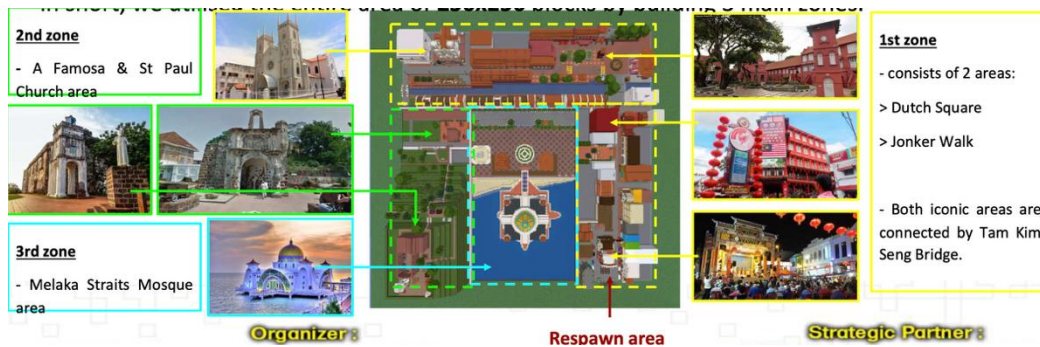
Artifacts revealed that students engaged in systematic design processes. Team Christmas Buddies, for example, produced detailed graph-paper sketches of St Basil’s Cathedral before construction. These plans showed scaled measurements and marked roles for each team member, demonstrating planning, prototyping, and iteration consistent with engineering design

cycles (Checa-Romero, 2018). The final build closely reflected the original sketches, highlighting students' ability to transfer abstract planning into digital execution.

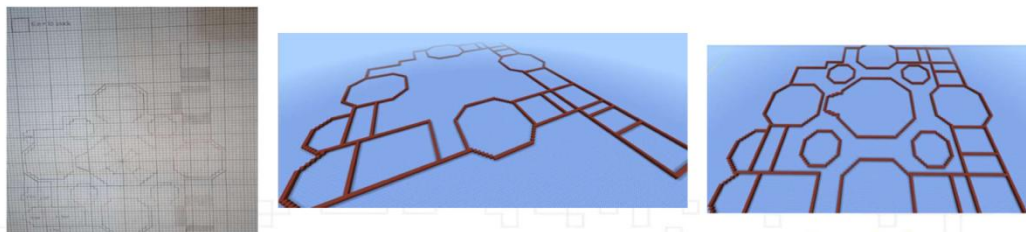
**Figure 1: Sketch of the building area (SS18)**



**Figure 2: Site planning in Minecraft (Team SS18)**



**Figure 3: Sketch of the building area (Team Christmas Buddies)**



#### 4.3.2 Creativity within Constraints

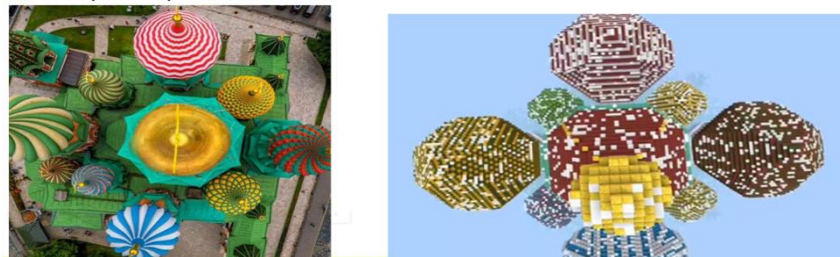
Student artifacts also illustrated how teams adapted creatively within Minecraft's block-based limitations. For instance, Team SS18 improvised decorative features of Jonker Street by combining unconventional block types to replicate shopfront textures and lanterns. Their project notes revealed multiple trials to approximate architectural details that could not be replicated exactly. This adaptive problem-solving reflects Nebel, Schneider, and Rey's (2016) findings that Minecraft supports innovation under constraint, requiring students to think flexibly. For Team Christmas Buddies (St Basil's Cathedral), their creativity within constraints

looked a bit different. They struggled with the onion domes, which cannot be perfectly recreated in Minecraft because of its block-based geometry. Instead of abandoning the detail, they experimented with multiple block combinations (colored concrete, glass, and wool) and adjusted proportions until the domes resembled the cathedral’s distinctive silhouette. They also compensated for Minecraft’s lack of curved structures by layering stepped blocks to simulate roundness — a classic example of adapting design under constraint.

**Figure 4: Jonker Street in real world and in Minecraft (Team SS18)**



**Figure 5: St Basil’s Cathedral Onion’s Dome (Team Christmas Buddies)**



### 4.3.3 Gamification and Interactivity

In the Dutch Square and Stadhuys builds, SS18 inserted NPCs (non-player characters) that provided historical information about the landmarks. They designed a guided walking route through their Minecraft world, allowing visitors to “tour” the landmarks interactively, similar to a virtual heritage trail. Artifacts from Team Christmas Buddies contained not only architectural builds but also interactive components, such as redstone-powered snowball machines, bells, and archery targets. These elements transformed the build from a static structure into a playful learning environment, reinforcing motivation and engagement. Their design documents explained how these features were intended to encourage peer interaction, aligning with Karsenti and Bugmann’s (2017) observation that Minecraft fosters collaborative play as part of learning.

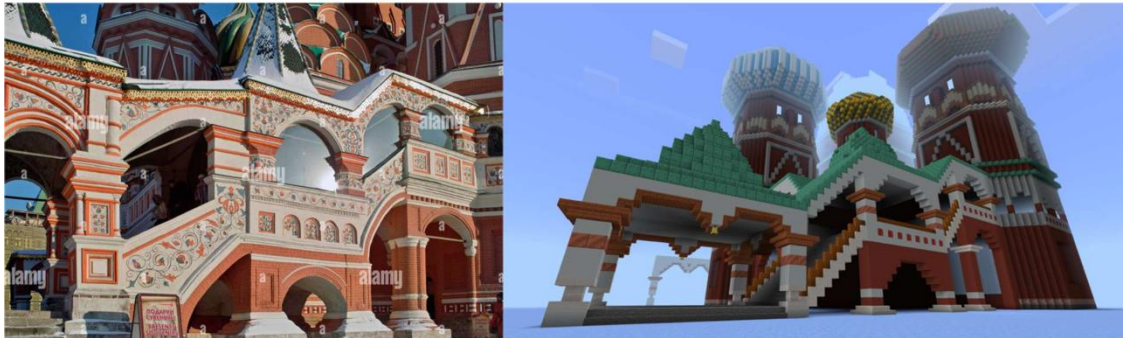
**Figure 6: Comparison of Stadhuys in real world and in Minecraft**



**Figure 6: Comparison of Melaka Straits Mosque in real world and in Minecraft**



**Figure 7: Comparison of St Basil's Cathedral in real world and in Minecraft**



The integration of post-survey results and thematic analysis provides a comprehensive picture of the impact of Minecraft Education. The survey confirmed high levels of engagement, collaboration, motivation, and problem-solving confidence, while the qualitative findings contextualized these perceptions with rich examples and student voices.

## 5. Discussion and Conclusion

This paper explored how Minecraft Education Edition (M:EE) can transform traditional classrooms by addressing long-standing barriers such as disengagement, limited collaboration, constrained creativity, and the passive absorption of cultural knowledge. Drawing on two contrasting case studies—An Odyssey Through History (Team SS18) and St Basil's Cathedral (Team Christmas Buddies)—the findings demonstrate that game-based learning is not merely a digital novelty but a transformative pedagogy. Beyond individual classroom projects, these findings underscore Minecraft Education's potential to influence systemic educational transformation. By fostering resilience, creativity, and collaboration, Minecraft can complement Malaysia's national education goals and contribute to international efforts to prepare learners for innovation-driven economies. Its integration could inform curriculum design, teacher professional development, and national digital literacy initiatives. By analyzing survey results, thematic coding of student reflections, and artifacts generated during the projects, the study shows that M:EE fosters active engagement, collaboration, creativity, cultural awareness, and resilience, all of which are critical competencies for 21st-century education (Pang, 2021; Lai et.al.,2024; Slattery, 2025).

In traditional classrooms, disengagement remains a pervasive issue as students often perceive learning to be monotonous and exam-driven. The present study found that Minecraft Education helped to overcome this barrier by making lessons both interactive and meaningful. Students repeatedly described their experiences as “fun” and “exciting,” while survey results confirmed high levels of engagement and motivation. The interactivity of the platform, which allows learners to immerse themselves in designing and exploring virtual worlds, shifted the classroom

dynamic from passive reception of knowledge to active participation. This transition resonates with the arguments which emphasized that digital natives are more responsive to game-based environments than to conventional lectures.

In addition, the findings resonate with UNESCO's core values of inclusivity, equity, and innovation in education. By enabling students of diverse abilities to contribute meaningfully—whether through building, researching, coding, or storytelling—Minecraft Education supports the principle of learning that leaves no one behind. This directly aligns with Sustainable Development Goal 4 (SDG 4): Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (UNESCO, 2020). At the same time, the projects illustrated how digital game-based learning can raise awareness of heritage preservation and global architecture, connecting strongly to Sustainable Development Goal 11 (SDG 11): Make cities and human settlements inclusive, safe, resilient, and sustainable.

The findings also revealed that challenges such as technical issues and time constraints became opportunities for resilience. Instead of seeing mistakes as failures, students treated setbacks as part of the learning process. When server crashes erased progress, or when deadlines loomed, students reported adapting strategies, redistributing roles, and working more efficiently. This supports Nebel, Schneider, and Rey's (2016) observation that game environments normalize trial and error, allowing learners to view failure as an integral step toward success. Such experiences are vital for preparing students to navigate uncertainty and problem-solving in real-world contexts.

The broader implication of these findings is that Minecraft Education transforms classroom practice in ways that directly confront the weaknesses of traditional schooling. It shifts the focus from passive to active learning, from individual to collaborative tasks, from rigid instruction to creative exploration, from abstract facts to contextualized cultural experiences, and from punitive treatment of mistakes to resilience-building. These transformations underscore the potential of game-based learning to not only supplement but also redefine pedagogy in line with 21st-century demands.

Ultimately, the cases of *An Odyssey Through History* and *St Basil's Cathedral* confirm that Minecraft Education Edition is capable of transforming traditional classrooms by overcoming barriers that have long constrained learning. Through engagement, collaboration, creativity, cultural awareness, and resilience, M:EE provides an inclusive and dynamic approach to education that aligns with national aspirations and global goals. The lesson is clear: when teachers embrace game-based learning as an ally rather than a distraction, they unlock opportunities for students to not only learn more effectively but also to enjoy the process of learning itself. In this sense, Minecraft Education does not merely add a technological layer to conventional schooling; it redefines it as a space where knowledge, culture, and creativity converge to prepare learners for an innovation-driven future.

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# LINGUA-TECH PERAK 2025: ADVANCING LANGUAGE EDUCATION THROUGH VISION, ACTION, AND INNOVATION

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**Abstract:** *Lingua-Tech Perak 2025: Advancing Language Education Through Vision, Action, and Innovation integrates vision-driven goals, action-oriented pedagogy, and technological innovation through Project-Based Learning (PBL). This action research aimed to enhance proficiency in Bahasa Melayu and English while fostering creativity, communication, and social awareness. It also sought to strengthen the pedagogical capacity of language teachers from 25 secondary schools in Perak, equipping them to deliver engaging, technology-enriched lessons. The project was implemented in three structured stages: (1) preparatory workshops to build teacher capacity in digital tools and PBL strategies; (2) classroom cycles involving idea generation, storyboard development, and documentary production; and (3) evaluation, reflection, and student presentations. Each stage was intentionally designed as a pedagogical enhancement process, with skills and strategies progressively refined through repeated cycles of application and reflection. This stage-by-stage implementation sustained teacher and student engagement, encouraged real-time lesson adaptation, and embedded technology in authentic language tasks. Teachers reported greater confidence in adopting innovative approaches, while students demonstrated notable improvements in language proficiency, creative expression, and collaborative problem-solving. Findings highlight that the transformative impact arose from the deliberate execution of each stage rather than a single intervention. The initiative illustrates that educational innovation thrives in a continuous cycle of planning, action, observation, and refinement. The presentation will outline each stage, showcase workshop activities, and present excerpts from student-produced documentaries as replicable resources for technology-integrated language education.*

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**Keywords:** *(Lingua-Tech, Project Based-Learning, Education Innovation, Technology Integration)*

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## Introduction

Language education plays a central role in equipping students with the communication, critical thinking, and collaborative skills essential for success in the 21st century. In Malaysia, national education policy documents such as the *Pelan Pembangunan Pendidikan Malaysia 2013–2025* (KPM, 2013) and the *Dokumen Standard Kurikulum dan Pentaksiran* (DSKP) (KPM, 2019) emphasize student-centered pedagogies, digital integration, and authentic, inquiry-based learning experiences. More recently, the *Dasar Pendidikan Digital KPM* (2021) reinforces the national agenda by promoting technology-enabled teaching and learning, enhancing digital competency among educators and students, and fostering innovative, future-ready educational global competencies.



In alignment with these national priorities, the *Lingua-Tech Perak 2025* initiative integrates language learning with project-based learning (PBL) and digital tools to create meaningful, real-world tasks that promote both language proficiency and 21st-century skills. This study explores how such an approach can elevate the teaching and learning of Bahasa Melayu and English while simultaneously developing the digital pedagogical capacity of language teachers.

Lingua-Tech Perak aims to strengthen the pedagogical capacity of language teachers from 25 secondary schools across Perak, enabling them to design and deliver engaging, technology-enriched lessons. The project was carried out in three structured stages: Preparatory workshops to build teacher capacity in digital tools and project-based learning (PBL) strategies; Classroom implementation cycles, including idea generation, storyboard development, and documentary production; Evaluation and reflection, culminating in student presentations to showcase their learning outcomes.

### Objectives

1. To explore the extent to which preparatory workshops enhance teachers' pedagogical capacity in integrating digital tools and Project-Based Learning (PBL) strategies into language teaching.
2. To analyze how structured classroom cycles—comprising idea generation, storyboard development, and documentary production—contribute to the development of students' language proficiency, creativity, and collaborative skills.
3. To evaluate the effectiveness of technology-integrated PBL through systematic reflection, assessment, and the analysis of student presentations as evidence of learning outcomes.

### Literature Review

The Lingua-Tech Perak 2025 initiative was designed to integrate vision-driven goals, action-oriented pedagogy, and technological innovation through PBL. This study focuses on evaluating its impact on both teachers and students, with particular attention to enhancing language proficiency and 21st-century skills.

In parallel, the integration of digital tools into PBL has emerged as a powerful pedagogical shift. The study by Afzal & Tumpa (2025) investigates the use of project-based learning (PBL) in a postgraduate project management program through an action research approach. Over iterative cycles of design, implementation, and reflection, PBL was embedded into coursework to strengthen both technical and soft skills. Findings from 137 students revealed that PBL significantly enhanced teamwork, communication, critical thinking, adaptability, and real-time decision-making.

The study by Afzal and Tumpa (2025) is directly relevant to my research, as it shows how project-based learning (PBL) and digital tools can be combined to make learning more engaging and practical. The study points out challenges teachers may face, such as the extra preparation time and the need for clear guidance when shifting from traditional teaching to PBL.

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Xu, Zhang, and Wang (2024) investigate how interaction features in online learning platforms influence students' continuous use, particularly from a metaverse perspective. Using a large dataset of over 5,500 K12 students across 227 classes, the study analyzes the effects of multiple interaction dimensions:

- Teacher–student interaction (in-class and after-class).
- Student–student interaction.
- Teacher–parent interaction.
- Immersion of interactive technology (e.g., VR/AR, digital avatars).
- Timeliness of feedback.
- Fun in interaction (gamification).

Taken together, the studies by Afzal and Tumpa (2025), Lagrutta et al. (2025), and Xu, Zhang, and Wang (2024) provide a comprehensive foundation for implementing project-based learning (PBL) supported by digital tools in secondary education. Afzal and Tumpa demonstrate how PBL strengthens critical thinking, teamwork, and adaptability when coupled with digital scaffolds, while also identifying the challenges teachers face in transitioning to a facilitative role. Lagrutta et al. expand this perspective by conceptualizing technology-enhanced learning spaces (TELS) as ecosystems where pedagogy, culture, and digital solutions interact to foster innovation and lifelong learning—an approach secondary teachers can adapt in redesigning their classrooms. Complementing these findings, Xu et al. highlight the centrality of interaction, showing that teacher–student and peer collaboration are vital drivers of sustained engagement, while immersive technologies and timely feedback enhance learning effectiveness. Together, these studies underscore that effective digital-PBL requires more than technology adoption; it demands thoughtful pedagogical design, inclusive practices, and teacher readiness to create dynamic, collaborative, and future-oriented learning environments that prepare students for the competencies of Society 5.0.

These lessons are useful for secondary teachers, as they highlight both the opportunities and the support needed to successfully integrate PBL with digital resources in the classroom. These findings provide a strong theoretical rationale for implementing **Lingua-Tech Perak 2025**, an action research initiative that positions PBL within a digital innovation framework.

Beyond project-based learning, the principles of the **S.P.A.R.K Teaching Model** (Stimulate Curiosity, Personalize Learning, Activate Collaboration, Reflect and Reframe, Kindle Mastery) also provide a relevant pedagogical perspective. Although not formally applied in this study, S.P.A.R.K resonates with the objectives of PBL and digital integration, particularly in fostering curiosity, personalization, collaboration, reflection, and mastery. This connection highlights that the pedagogical direction of Lingua-Tech Perak is consistent with broader learner-centered approaches in contemporary language education.

**Figure 1: Overall Positive Reflections on PBL Implementation (N = 40)**



### Participants

A total of 40 language teachers (English and Bahasa Melayu) from 25 secondary schools in Perak participated. Each teacher implemented PBL projects with their respective student groups.

**Table 1: Teachers' Reflections on PBL Implementation (N = 40)**

PBL PHASE	KEY FOCUS	POSITIVE RESPONSE (%)	COMMON THEMES FROM TEACHERS' REFLECTIONS
<b>Phase 1: Project Launch</b>	Student engagement & role clarity	38/40 (95.0%)	Students excited, related to daily life, asked questions; some were passive or unclear about roles.
<b>Phase 2: Investigation &amp; Knowledge Building</b>	Inquiry & collaboration	39/40 (97.5%)	Students used all 4 language skills in inquiry; teacher guided with prompts/resources; some still relied on teacher support
<b>Phase 3: Product Creation</b>	Creativity & technology use	40/40 (100%)	Students applied video editing, scripting, narration; videos creative and real-world relevant; teacher guided script and technical issues.
<b>Phase 4: Project Presentation</b>	Presentation & reflection	39/40 (97.5%)	Students confident in presenting; feedback praised creativity and language use; technical issues (audio/length) noted.
<b>Overall Reflection</b>	Impact on teaching & learning	40/40 (100%)	Improved motivation, language skills, confidence, creativity, collaboration; suggested more flexible time, early technical training, extra support for weaker students.

This section presents the findings derived from teachers' reflections on the implementation of Project-Based Learning (PBL) within the Lingua Tech Perak initiative. The analysis is structured around the three core objectives of the study.

### **1. Enhancement of Pedagogical Capacity through Preparatory Workshops**

The data indicate that preparatory workshops significantly contributed to teachers' ability to integrate digital tools and PBL strategies into language instruction. Across all phases of implementation, positive responses ranged from 95% to 100%, reflecting a high level of teacher confidence and preparedness. In the initial phase (Project Launch), 95% of teachers reported strong student engagement and relevance to daily life, although some noted challenges in clarifying student roles. Teachers consistently highlighted that PBL fostered high levels of student participation and enjoyment. Reflections noted that "*students were more interested to participate in activities when technology-based learning methods were applied in the classroom*" and that "*the implementation of PBL can make teaching and learning very interesting.*" Several teachers emphasized the positive atmosphere: "*very enjoyable,*" "*an interesting experience,*" and "*fun because we could use digital technology that attracts students' interest in learning.*" This suggests that while workshops effectively equipped

teachers with foundational strategies, further emphasis on role definition may enhance classroom execution.

During the Product Creation phase, all teachers (100%) observed successful integration of digital tools such as video editing, scripting, and narration. These outcomes demonstrate the workshops' effectiveness in fostering technological fluency among educators and enabling them to guide students in producing authentic, media-rich content.

## **2. Contribution of Structured Classroom Cycles to Student Development**

Structured classroom cycles comprising idea generation, investigation, and product development were found to be instrumental in promoting students' language proficiency, creativity, and collaborative skills. In the Investigation & Knowledge Building phase, 97.5% of teachers reported that students actively engaged all four language skills (listening, speaking, reading, and writing) during inquiry-based tasks. Teachers also noted that guided prompts and resources supported student autonomy, although some learners continued to rely on teacher facilitation.

The Product Creation phase revealed substantial gains in creativity and real-world application. Teachers unanimously observed that students produced innovative video content that reflected critical thinking and contextual relevance. Furthermore, collaborative efforts were evident throughout the process, with students working in teams to script, narrate, and edit their projects highlighting the efficacy of structured cycles in cultivating teamwork and interpersonal communication.

## **3. Evaluation of Technology-Integrated PBL through Reflection and Student Output**

Teachers' reflections and student presentations provided compelling evidence of the effectiveness of technology-integrated PBL. In the Project Presentation phase, 97.5% of teachers reported that students demonstrated confidence and competence in delivering their work. Feedback from peers and educators emphasized the creative use of language and digital media, although minor technical issues such as audio clarity and video length were noted. Teachers frequently described authentic uses of digital applications in their classrooms. For example: *"I managed to implement PBL-based teaching and learning using technology such as Canva and Padlet. Students produced short videos on the theme 'Sports' using Canva or CapCut and presented their findings through edited videos arranged according to scripts and storyboards."* Others highlighted the benefit of digital exposure: *"It was a very new experience that helped me learn about digital technology that can be utilized in teaching and learning. The learning process was interesting and at the same time uncovered hidden talents among students."* Such accounts illustrate how digital tools enhanced collaboration, creativity, and presentation skills.

Critical thinking was prominently featured in student reflections, particularly during the creation and presentation stages. Teachers identified increased motivation, improved language skills, and enhanced collaboration as key outcomes of the PBL approach.

A strong theme in teachers' reflections was the development of students' creativity and higher-order thinking. One teacher observed: *"Throughout the implementation of this project, I observed that students provided creative ideas and were actively involved in producing videos."* *This approach improved students' critical thinking, communication, and creativity."* Such reflections reinforce the quantitative finding that 100% of teachers observed creativity and technology use in the Product Creation phase.

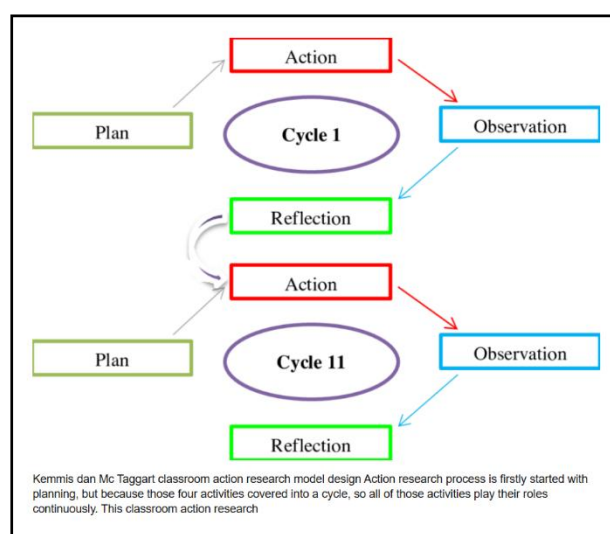
Additionally, recommendations for future iterations included the need for more flexible timelines, earlier technical training, and targeted support for students requiring additional guidance.

## Methodology

### Research Design

This study employed an action research approach, following the cyclical model developed by Kemmis and McTaggart (1988), which consists of four interconnected phases: planning, action, observation, and reflection.

**Figure 2 Source :** [https://www.researchgate.net/figure/Kemmis-dan-Mc-Taggart-classroom-action-research-model-design-Action-research-process-is-fig1\\_337062035](https://www.researchgate.net/figure/Kemmis-dan-Mc-Taggart-classroom-action-research-model-design-Action-research-process-is-fig1_337062035)



This framework was selected to support iterative development and continuous improvement in both teaching practices and student learning outcomes throughout the implementation of the Lingua-Tech Perak 2025 initiative. Teacher reflective journals were the primary source of data.

### Findings and Results

Teachers' reflective journals served as qualitative and quantitative data sources. Data were analyzed thematically (student engagement, language proficiency, creativity, collaboration, technology use) and quantitatively through frequency counts of positive vs. negative reflections.

The findings demonstrate that PBL is highly effective in enhancing students' language proficiency, creativity, and collaborative problem-solving skills. Teachers reported that PBL created authentic contexts for students to practice listening, speaking, reading, and writing, which aligns with DSKP goals (KPM, 2019).

The cumulative analysis of teacher reflections demonstrated overwhelmingly positive impacts. As summarized in **Figure 1**, teachers consistently reported student progress across all four phases of PBL.

These findings suggest that PBL not only enhanced students' language proficiency in listening, speaking, reading, and writing but also nurtured essential 21st-century skills such as creativity, critical thinking, collaboration, and digital literacy. The overwhelmingly positive teacher reflections reinforce the value of PBL as a pedagogical strategy for strengthening English language learning in the Perak context, supporting both national education goals and global evidence of PBL's transformative potential (KPM, 2013; Thomas, 2000; Kokotsaki et al., 2016).

These findings also echo the dimensions of the **S.P.A.R.K framework**. Students' curiosity was stimulated through authentic tasks (S), digital tools allowed for differentiated participation (P), group work promoted collaboration (A), peer feedback encouraged reflection and reframing (R), and final project outputs demonstrated mastery (K). While S.P.A.R.K was not explicitly applied in this study, its principles provide a useful lens for understanding the positive impacts of technology-enabled PBL.

Despite the overall positive responses, teachers also reported constraints. Time was a recurring concern: *"time-consuming, but the project made students like learning, try their best, and work together"* and *"time constraints, but it was completed with the help of students."* Technological access was another limitation: *"quite difficult because only teachers who had the relevant gadgets could carry it out"* and *"it could have been better if the necessary devices were provided beforehand. I had to use my own, but unfortunately, my device encountered a flickering screen."* For some contexts, such as boarding schools, *"time and technological resource constraints were quite challenging, and this approach is more suitable for younger teachers who are more competent in IT and AI."*

### **Conclusion**

This study provides evidence that PBL significantly enhances both teacher practice and student learning in language education. By embedding technology and real-world tasks into lessons, PBL promotes holistic skill development and aligns with both national and global education priorities. Sustained investment in teacher training, curricular support, and digital infrastructure is necessary to ensure PBL's long-term success as a transformative pedagogical model in Malaysia.

The results demonstrate that technology-integrated PBL significantly improved both teacher practices and student learning. Interestingly, the outcomes also align with the principles of the **S.P.A.R.K Teaching Model**, particularly in terms of curiosity, personalization, collaboration, reflection, and mastery. Although not directly employed as a framework in this study, S.P.A.R.K serves as a supportive reference that reinforces the pedagogical validity of the approach taken in Lingua-Tech Perak.

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## Appendix A

The following online resources serve as supplementary references and provide comprehensive supporting evidence of the *Lingua-Tech Perak 2025* implementation. These resources encompass a variety of materials collected throughout the research process, including:

1. **Teacher Reflections** – Written accounts and digital narratives documenting teachers' experiences, challenges, and pedagogical insights in applying the Lingua-Tech framework in classrooms.
2. **Student Project Outputs** – Samples of students' creative and academic work that demonstrate the integration of technology with language learning, highlighting improvements in linguistic skills, collaboration, and critical thinking.
3. **Showcase Materials** – Multimedia presentations, posters, and digital exhibits that were developed and shared during the action research cycles, serving as tangible evidence of innovation and best practices.

Collectively, these resources provide a clearer picture of the programme's impact on teaching and learning practices. They also function as practical documentation that supports the analysis, findings, and recommendations presented in this study.

- Padlet (Bahasa Melayu Outputs):

<https://padlet.com/g26436789/lingua-tech-innovator-lti-kis-2025-bahasa-melayu-cv79qbrbjj3ts5xf>

- Padlet (English Outputs):

<https://padlet.com/g26436789/lingua-tech-innovator-lti-kis-2025-english-3vp3mewtu9snm5sf>

- Google Drive (Project Documentation):

<https://drive.google.com/drive/folders/1fbaanWPcynJ9sM2JJGHuT5VgMWGQV7Us>

- AnyFlip (Showcase Materials):

## STRATEGY PLANNING: THE ROLE OF SCHOOL LEADERS IN REPORTING KPI

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**Abstract:** Strategic planning in educational institutions is essential for improving student outcomes, operational efficiency, and overall school performance. Central to this process is the use of Key Performance Indicators (KPIs), which serve as measurable metrics for assessing progress toward institutional goals. School leaders, particularly principals and administrators, play a pivotal role in the collection, analysis, and reporting of KPIs. This article explores the role of school leaders in reporting KPIs within the context of strategic planning, emphasizing their responsibilities in data collection, interpretation, and communication to stakeholders. Drawing from existing literature, the article highlights the benefits of KPI reporting, including improved decision-making, transparency, and continuous improvement. It also addresses challenges such as data consistency, stakeholder engagement, and resource limitations that may hinder effective KPI reporting. Ultimately, the article underscores the importance of school leaders' involvement in the KPI reporting process to foster a data-driven culture and promote educational excellence.

*Keywords:* Educational Leadership; Strategic Planning, KPI

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## 1.0 Introduction

Strategic planning in education has become an indispensable tool for navigating the complexities of modern schooling. In an era characterized by heightened accountability, global competitiveness, and rapid societal change, educational institutions can no longer rely solely on tradition or intuition to shape their direction (Bryson, 2018). Instead, they must employ systematic approaches to identify priorities, allocate resources effectively, and measure progress toward defined goals. At the heart of this process lies the use of Key Performance Indicators (KPIs) to quantifiable measures designed to track, evaluate, and inform the success of strategies aimed at improving both academic and non-academic outcomes.

KPIs serve as a bridge between strategic intentions and practical realities. By translating abstract goals such as improving student achievement or enhancing teacher effectiveness into measurable benchmarks, KPIs allow school leaders to evaluate whether progress is being made and where adjustments are needed (Kaplan & Norton, 1996). Beyond measurement, however, KPIs also function as communication tools: they convey institutional priorities to stakeholders, foster accountability, and build trust by making performance visible and comparable across time and contexts (Neely et al., 2002).

The role of school leaders, particularly principals and administrators, is pivotal in this process. They are not merely custodians of data but also interpreters of meaning and drivers of strategic action. Effective KPI reporting requires leaders to collect accurate and reliable data, interpret trends critically, and communicate findings transparently to diverse stakeholders such as teachers, parents, school boards, and policymakers (Barker & Candoli, 2006). In doing so, school leaders transform KPIs from static metrics into dynamic tools for organizational learning and improvement.

Yet, the process is not without challenges. The use of KPIs in education is often contested, as critics argue that excessive reliance on quantifiable measures can lead to a culture of performativity, narrowing the focus of schools to what can be measured rather than what truly matters (Ball, 2003). Furthermore, KPI reporting in schools must contend with issues of data reliability, misinterpretation, and potential misuse by external stakeholders. Without careful leadership, KPI systems risk reducing education to numbers, overshadowing broader objectives such as student well-being, creativity, and social development.

Despite these risks, when applied thoughtfully and strategically, KPIs provide school leaders with a powerful mechanism to align institutional practices with long-term visions. They also ensure that strategic planning is not a static document but a living, adaptive process informed by evidence. This article explores the role of school leaders in KPI reporting as part of the broader strategic planning cycle. Drawing on existing literature, it examines the processes of data collection, interpretation, and stakeholder reporting while critically addressing the challenges and best practices associated with KPI use in education. By doing so, it highlights how school leaders can balance accountability with improvement, compliance with innovation, and numbers with nuance in their pursuit of educational excellence.

## 2.0 Literature Review: Strategic Planning and KPI Reporting

Strategic planning in education is globally recognized as a cornerstone for school improvement, but in Malaysia it holds particular significance given the nation's aspiration to transform its education system into one that is globally competitive while remaining contextually relevant. The **Malaysia Education Blueprint (*Pelan Pembangunan Pendidikan Malaysia, PPPM*) 2013–2025** explicitly emphasizes accountability, transparency, and evidence-based decision-

making as key drivers of reform (Ministry of Education [MOE], 2013). Within this policy framework, KPI reporting is positioned not just as a compliance tool but as an enabler of school-level improvement, leadership effectiveness, and national transformation.

International literature emphasizes the role of leadership in embedding KPI reporting into school culture (Avolio & Bass, 2004; Elmore, 2000), and similar emphases are evident in Malaysia. The PPPM identifies **instructional leadership** as a key competency for principals, requiring them to lead with data, monitor student performance, and ensure effective teacher development. To operationalize this, Malaysian school leaders are guided by the *Standard Kualiti Pendidikan Malaysia Kualiti @ Sekolah (SK@S)*, which provides structured indicators across leadership, teaching and learning, and student outcomes (*Bahagian Jaminan Kualiti* [BJK], 2017). By embedding data-driven practices in these standards, SK@S ensures that KPI reporting is aligned with both school-level targets and national aspirations.

Shannon and Bylsma's (2005) argument that KPIs must be integrated into broader strategic goals resonates with the Malaysian system. Under the PPPM, school performance is linked to **11 strategic shifts**, such as raising teacher quality, narrowing achievement gaps, and leveraging ICT in learning. Schools are thus encouraged to align their KPIs with these national shifts, ensuring that reporting serves both local needs and broader systemic goals. For example, KPIs on student attendance and literacy are not merely operational measures but are tied to national targets such as **100% enrolment and full literacy by Year 3** (MOE, 2013). This demonstrates how KPI reporting in Malaysia functions as a **multi-level accountability mechanism**, aligning classroom practices with national reforms.

The literature also highlights the role of intermediate structures in KPI reporting. In Malaysia, State Education Department (**JPN**) and **District Education Department (PPD)** act as mediators between school leaders and the Ministry of Education. Their responsibility includes monitoring KPI performance, providing feedback, and supporting intervention strategies when schools fall short. This decentralization echoes Elmore's (2000) call for creating environments where data-driven discussions are routine: in practice, JPN and PPD officials conduct performance dialogues with school leaders, where KPI data is reviewed and linked to school improvement strategies. Such practices highlight how Malaysia has institutionalized KPI reporting as both a technical and dialogic process.

While the frameworks are strong, Malaysian schools face familiar challenges. As Ball (2003) warned in the UK context, the danger of performativity is also evident in Malaysia, where KPI reporting sometimes leads to overemphasis on exam results, such as *UPSR*, *PT3* (now abolished), and *SPM*, at the expense of holistic student development. This aligns with critiques that SK@S, while comprehensive, can encourage tick-box compliance rather than deep reflection (Jasmi, 2019). Furthermore, resource disparities between urban and rural schools create inconsistencies in KPI data collection and reporting (Aziz & Kassim, 2016). Limited administrative capacity at school level also means that leaders often view KPI reporting as burdensome paperwork rather than a strategic learning tool.

Despite these challenges, Malaysia has piloted several innovations in KPI reporting. The PPPM introduced **School Improvement Specialist Coaches (SISC+)** and **School Improvement Partners (SIPartner+)**, who support principals and teachers in analyzing KPI data and translating it into instructional improvements. In addition, the **Annual National Dialogue** process requires schools to report progress against national KPIs, fostering transparency and a culture of evidence-informed practice. Some states, such as Johor and Selangor, have

experimented with **digital dashboards** for real-time KPI tracking, aligning with global best practices in simplifying data communication (Schmoker, 2006).

In summary, the literature indicates that KPI reporting in Malaysia is tightly linked to strategic planning and national policy. It serves as both an accountability mechanism and a driver of continuous improvement. However, the challenge for Malaysian school leaders is to balance compliance with innovation ensuring that KPI reporting supports holistic goals articulated in the PPPM, such as nurturing values, bilingual proficiency, and socio-emotional development, rather than narrowly focusing on exam performance. A **balanced Malaysian KPI framework** integrating academic, operational, and holistic student indicators would allow KPI reporting to truly support the nation's aspiration of producing students who are not only knowledgeable but also resilient, ethical, and globally competitive.

### **3.0 Understanding KPIs in Education**

Key Performance Indicators (KPIs) have become a central mechanism for monitoring and driving educational improvement. In essence, KPIs are measurable values that allow schools to assess the extent to which they are achieving their strategic objectives. They serve as navigational tools, guiding leaders, teachers, and policymakers in determining whether the institution is moving in the right direction. Within the educational context, KPIs provide a structured means of translating often broad and aspirational goals into tangible benchmarks that can be systematically tracked and evaluated (Neely et al., 2002).

#### **3.1 Types of KPIs in Education**

KPIs in schools typically fall into several broad categories. At the core are **student learning outcomes**, often measured through standardized assessments, national examinations, or formative classroom assessments. These are complemented by **engagement indicators**, such as attendance rates, graduation rates, and participation in co-curricular activities, which provide insight into the overall schooling experience. Another key category includes **teacher and instructional quality indicators**, which may focus on professional development, classroom observation scores, or teacher retention rates. Operational KPIs, such as financial efficiency, resource utilization, and infrastructure readiness, also play a significant role in ensuring that the educational environment supports learning effectively.

#### **3.2 Leading and Lagging Indicators**

As Kaplan and Norton (2001) emphasize, KPIs can be classified into **leading indicators** which are predictive and forward-looking and **lagging indicators**, which are outcome-based and retrospective. Leading indicators in education might include student participation in remedial programs, frequency of teacher professional learning sessions, or levels of parental involvement. These provide early signals about potential future performance. Lagging indicators, by contrast, focus on results already achieved, such as test scores, dropout rates, or post-school employment statistics. A balanced combination of both types is crucial: while lagging indicators reveal whether goals have been achieved, leading indicators provide opportunities for early intervention and continuous improvement.

#### **3.3 The Purpose and Value of KPIs**

The purpose of KPIs extends beyond accountability. Properly designed KPIs can drive improvement by highlighting areas of strength and weakness, aligning daily practices with long-term strategy, and creating a culture of evidence-informed decision-making (Leithwood et al., 2004). By offering a shared language of measurement, KPIs also facilitate communication among diverse stakeholders teachers, administrators, parents, and

policymakers ensuring that strategic objectives are clearly understood and consistently pursued. Furthermore, KPIs can act as motivational tools, signalling to staff and students the priorities of the institution and providing recognition for areas of progress.

### **3.4 Critiques and Challenges of KPIs in Education**

Despite their utility, the use of KPIs in education is not without controversy. Critics argue that the heavy emphasis on quantitative metrics risks narrowing the curriculum and fostering a culture of performativity, where teachers and students are pressured to “teach to the test” rather than cultivate deeper learning and creativity (Ball, 2003). Moreover, certain aspects of education such as student well-being, values formation, or socio-emotional development are inherently difficult to capture in numerical form, leading to their underrepresentation in KPI frameworks. There is also the danger of data misuse, where poorly interpreted or selectively reported indicators may distort perceptions of school performance.

### **3.5 Toward Balanced and Holistic KPIs**

To address these challenges, many scholars advocate for the development of **balanced KPI frameworks** that integrate both quantitative and qualitative measures. For example, alongside exam performance and graduation rates, schools might also track indicators of student well-being, resilience, or sense of belonging often measured through surveys or interviews (Elias et al., 1997; Noddings, 2013). Additionally, adopting frameworks such as the **Balanced Scorecard** allows schools to evaluate performance across multiple perspectives academic outcomes, stakeholder satisfaction, internal processes, and capacity for innovation thus avoiding overemphasis on a single dimension of success (Kaplan & Norton, 1996).

In sum, KPIs in education are both powerful and problematic. When designed and implemented thoughtfully, they provide a roadmap for strategic progress and a foundation for accountability. However, when applied uncritically, they risk reducing education to a numbers game. The challenge for school leaders is therefore to balance the technical precision of measurement with the moral and holistic mission of education ensuring that KPIs support not just academic achievement but also the broader development of students as capable, resilient, and responsible citizens.

## **4.0 Reporting KPI with Respect to KRA (Key Result Areas)**

Key Performance Indicators (KPIs) and Key Result Areas (KRAs) are both crucial components of performance management and strategic planning in educational institutions. While KPIs are quantifiable measures used to evaluate the success of specific activities or outcomes, KRAs define the core responsibilities and areas that are critical to achieving the goals of an organization. In the context of school leadership, reporting KPIs with respect to KRAs helps align the performance metrics with strategic objectives, thereby improving overall organizational performance and accountability.

### **4.1. Understanding KPIs and KRAs**

Key Performance Indicators (KPIs) are measurable metrics that help assess how well an institution or individual is performing against defined goals. In a school setting, KPIs might include student academic performance (e.g., test scores), attendance rates, teacher effectiveness, and graduation rates. These indicators provide a way to track and measure the achievement of goals.

Key Result Areas (KRAs) refer to specific areas or responsibilities that are critical to the success of an organization. For school leaders, KRAs may include areas such as curriculum development, co-curriculum, student engagement, teacher professional development, and

operational management. Each KRA represents an area where school leaders need to focus their efforts to drive overall success.

#### **4.2. Aligning KPIs with KRAs**

For effective strategic planning and reporting, KPIs must be linked to the KRAs, ensuring that performance is measured in areas that are aligned with the school's strategic objectives. Here's how KPIs can be aligned with KRAs in an educational setting:

##### **a. Curriculum and Instruction**

**KRA:** Development and delivery of a high-quality curriculum.

**KPIs:** Student achievement scores (e.g., average grades, pass rates), standardized test results, and curriculum completion rates.

**Reporting:** School leaders can report on KPIs such as the percentage of students meeting or exceeding academic benchmarks within specific subjects, comparing performance trends over time to assess the effectiveness of curriculum delivery.

##### **b. Co-Curriculum**

**KRA:** Development and delivery of holistic co-curricular programs that enhance students' personal growth, leadership, teamwork, and lifelong skills.

**KPIs:**

- Student participation rates in clubs, societies, and uniformed bodies.
- Achievement in competitions (school, district, state, national, international levels).
- Leadership positions held by students (e.g., prefects, club presidents, team captains).
- Attendance and completion rates in co-curricular activities.
- Student self-assessment and peer assessment scores on soft skills (communication, collaboration, resilience).

##### **Reporting:**

School leaders can report on KPIs such as the percentage of students actively participating in at least one co-curricular activity, the number of teams or individuals achieving recognition at higher levels, and trends in leadership involvement across gender and year groups. Reports may also track year-on-year improvements in student participation breadth (diversity of activities) and depth (level of achievement), highlighting how co-curriculum supports national aspirations such as **PPPM 2013–2025's** emphasis on holistic student development and the **SK@S Standard 4** on student activities.

##### **c. Teacher Professional Development**

**KRA:** Improvement in teacher effectiveness and ongoing professional growth.

**KPIs:** Teacher retention rates, professional development participation, and post-training performance improvements.

**Reporting:** School leaders can report on the number of teachers participating in professional development programs, their satisfaction with training, and any correlation between professional development and improved classroom performance.

##### **d. Student Engagement and Well-being KRA**

Promoting student engagement, well-being, and overall academic involvement. **KPIs:** Attendance rates, student behaviour metrics, participation in extracurricular activities, and student satisfaction surveys. **Reporting:** KPI reporting would involve tracking changes in student attendance rates, identifying trends in student engagement, and providing evidence of the school's efforts to improve the learning environment.

### e. School Operations and Resource Management

KRA: Efficient management of school operations, including budget and resource allocation.

KPIs: Budget utilization, resource allocation efficiency, student-to-teacher ratio, and operational cost control.

Reporting: School leaders can report on how well the budget aligns with strategic priorities and resource management goals. KPIs such as the cost per student, the efficiency of resource usage, and operational effectiveness should be reported regularly.

### 5.0. The Role of School Leaders in Reporting KPIs Linked to KRAs

In the Malaysian education system, the role of school leaders in reporting Key Performance Indicators (KPI) is both critical and multifaceted. KPI reporting is not merely a bureaucratic obligation but a strategic tool for aligning school operations with national education policies, fostering accountability, and driving continuous improvement. Within the framework of the *PPPM 2013–2025*, *SK@S*, and the hierarchical monitoring structure of *PPD* and *JPN*, school leaders act as data stewards and change agents. Their work ensures that the reporting process is not just about recording numbers but about interpreting, communicating, and acting upon performance evidence to improve student outcomes and institutional effectiveness.

One of the foremost responsibilities of school leaders in KPI reporting is ensuring alignment with the national educational blueprint. The *PPPM 2013–2025* provides a comprehensive vision for transforming Malaysian education across three major waves of reform, with emphases on access, equity, quality, unity, and efficiency. KPI reporting at the school level must therefore be closely tied to these objectives. For instance, indicators on literacy and numeracy rates, dropout prevention, and English language proficiency are directly linked to the *PPPM* aspirations. The school leader, as the chief instructional and administrative officer, must interpret these broad national goals and translate them into measurable school-level targets. This alignment ensures that the reporting process serves as a bridge between policy and practice, transforming national aspirations into tangible local actions.

Beyond policy alignment, KPI reporting by school leaders is guided by the *SK@S*. *SK@S* provides an evaluative framework across domains such as leadership, organizational management, teaching and learning, and student outcomes. Reporting KPIs in line with *SKPM* is not a passive process; it requires evidence-based validation of school performance. For example, leaders must document the effectiveness of teaching practices, student engagement levels, and co-curricular achievements as part of the KPI reporting cycle. These reports are later scrutinized during school inspection by *JNJK*, *PPD*, or *JPN* officials. Thus, compliance with *SK@S* is both an accountability exercise and a quality assurance mechanism, underscoring the leader's role in upholding national standards of educational excellence.

In Malaysia, data from schools flows systematically to *PPD*, *JPN*, and eventually the Ministry of Education. School leaders are at the frontline of this process and are accountable for ensuring accuracy and reliability in the data submitted. KPI reporting spans multiple domains, including attendance rates, student achievement in public examinations such as *UPSR*, *PT3*, *SPM*, and *STPM*, teacher professional development records, and participation in co-curricular activities. These data points are frequently captured through systems such as the School Examination Analysis System (*Sistem Analisis Peperiksaan Sekolah*) (*SAPS*), *e-Operasi*, and the School Disciplinary Personality System (*Sistem Sahsiah Disiplin Murid*) (*SSDM*). Leaders must therefore not only supervise data collection but also validate it, safeguarding against inaccuracies or manipulations. This function positions school leaders as guardians of data



integrity, ensuring that reports submitted to PPD and JPN accurately reflect school realities and can be trusted for policymaking and resource allocation.

Accountability is a cornerstone of KPI reporting. The Ministry of Education mandates compulsory KPI reporting at every hierarchical level, ensuring that schools, districts, and states are aligned in their pursuit of strategic objectives. School leaders embody this accountability by ensuring transparency in the way performance data is collected, analysed, and communicated. For example, leaders may present KPI dashboards during staff meetings, curriculum review sessions, or Parent-Teacher Association (PIBG) gatherings. They must also uphold integrity, a value emphasized in Malaysia's public service ethos, by ensuring that data is not misrepresented for superficial compliance. Ethical stewardship of KPI reporting thus positions leaders not only as administrators but as role models of professionalism and integrity in the education sector.

The cyclical nature of KPI reporting allows school leaders to track progress over time, enabling early identification of performance gaps and the design of targeted interventions. For example, if KPI reports indicate declining achievement in mathematics or science, leaders can initiate remedial programs, organize Professional Learning Communities (PLC) around subject-specific teaching strategies, or request additional resources from PPD. Regular reporting also allows schools to benchmark themselves against national or regional targets, including international assessments such as Trends in International Mathematics and Science Study (TIMSS) and Programme for International Student Assessment (PISA), which are emphasized under the PPPM. In this way, KPI reporting is not a static exercise but a dynamic process of monitoring, reflection, and continuous school improvement.

Another important role of school leaders is fostering a culture of data literacy among teachers and staff. KPI reporting should not be perceived as an administrative burden but as a professional development opportunity. Leaders can initiate PLC sessions that focus on interpreting KPI data, linking classroom practices with student outcomes, and using performance evidence to refine instructional strategies. Training on SK@S rubrics and data analysis tools also empowers teachers to take ownership of school improvement initiatives. By embedding data literacy into the professional culture, school leaders transform KPI reporting into a platform for collective learning and growth.

Effective KPI reporting requires school leaders to function as interpreters and communicators of data. Leaders must translate quantitative data into meaningful insights that resonate with various stakeholders. For teachers, KPI reports may highlight areas of pedagogical improvement; for parents and PIBG, they provide assurance of the school's progress and accountability; for PPD and JPN officers, they serve as justification for resource requests or program implementation; and for the wider community, they strengthen trust in the school as a hub of educational excellence. Through effective communication, school leaders ensure that KPI reporting fosters collaboration rather than compliance, thereby mobilizing collective support for student success.

Finally, visionary school leaders use KPI reports not as an endpoint but as a starting point for innovation. By benchmarking their schools against high-performing institutions such as *Sekolah Kluster Kecemerlangan* or *Trust School*, leaders can identify best practices and adapt them to local contexts. Many schools have begun using digital dashboards to visualize KPI performance, aligning with the Ministry's digital transformation agenda. Moreover, KPI insights can inform the development of new initiatives, such as STEM-focused programs,

socio-emotional learning activities, or digital learning hubs. In this way, KPI reporting becomes a catalyst for creative and future-oriented school improvement.

In summary, the role of school leaders in KPI reporting within the Malaysian context is deeply strategic and multifaceted. Leaders are responsible for aligning reports with national policies such as the PPPM, ensuring compliance with quality standards like SK@S, safeguarding data integrity within PPD/JPN reporting structures, and upholding principles of accountability and transparency. Beyond compliance, they use KPI reporting to monitor performance, foster professional learning, communicate with stakeholders, and drive innovative school improvement initiatives. This elevates KPI reporting from a mere administrative requirement into a transformative leadership practice those positions school leaders as custodians of data, advocates of integrity, and agents of continuous improvement in the pursuit of educational excellence.

## **6.0 Conclusion**

The role of school leaders in KPI reporting extends beyond merely communicating data; it is also about using this data to make informed decisions. Robinson (2007) suggests that school leaders should use KPIs to guide decisions on resource allocation, curriculum adjustments, and professional development. By aligning decision-making with performance data, school leaders can ensure that strategies are responsive to the needs of students and staff. Effective KPI reporting offers several benefits for schools such as Improved Decision-Making, as suggested by Bryk et al. (2010), data-driven decision-making leads to more informed, targeted actions that address specific areas of need. Transparency and accountability, according to Schmoker (2006), regular KPI reporting helps foster a culture of transparency, where stakeholders can clearly see the progress, the school is making toward its goals. Continuous improvement, Fullan (2007) points out that KPI reporting provides an evidence base that can be used for continuous school improvement. By identifying areas of weakness, school leaders can design targeted interventions that lead to long-term positive change.

Despite the advantages of KPI reporting, school leaders face several challenges. Data quality and consistency, as noted by Teddlie and Reynolds (2000), ensuring consistent and accurate data collection can be challenging, especially when resources are limited. Stakeholder Engagement, Datnow et al. (2007) highlights the challenge of engaging all stakeholders in the reporting process. School leaders must ensure that parents, teachers, and board members understand the significance of the KPIs and are committed to acting on the data. Resource Constraints, Mullen (2011) argues that limited administrative support and time constraints often hinder the effective collection and reporting of KPIs. The role of school leaders in reporting KPIs is essential for the strategic planning and continuous improvement of educational institutions. Effective KPI reporting allows school leaders to track progress, make informed decisions, and communicate results to stakeholders. However, challenges such as data consistency, stakeholder engagement, and resource allocation must be overcome. Through ongoing professional development, fostering a data-driven culture, and engaging stakeholders in the process, school leaders can successfully use KPIs to drive strategic improvements in education.

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# MORAL LEADERSHIP PRACTICES OF RESIDENCY AND IMMERSION PROGRAM (PRIME) GRADUATE HEAD TEACHERS IN HUMAN AND HUMANITARIAN ELEMENTS: A PARTICIPATORY ACTION RESEARCH

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**Abstract :** *This study aims to explore the moral leadership practices among head teachers who have graduated from the PRIME program (Head Teachers Residency and Immersion Program), organised by the Institute Aminuddin Baki (IAB), and are placed in various primary schools in Malaysia. PRIME is a Principals and Head Teachers (PGB) transition program designed to strengthen multiple leadership and management competencies, as well as gain experience from PGBs who are about to retire or who will be changing roles, allowing them to understand and familiarise themselves with the school environment and climate. The element of leadership studied among head teachers is the practice of moral leadership, which encompasses aspects of school organisation management, teaching and learning, and student development. This study employed a qualitative approach, utilising a participatory action research design (Participatory Action Research, or PAR). A three-loop PAR model adapted from Crane and Richardson (2000) was used in this study. A total of 21 study participants, including head teachers (GB), senior administrators (PK), and academic teachers, were selected from three national schools (SK). Data for this study were collected through interview instruments, observations, and journal entries. The collected data were analysed using the thematic analysis method. The study findings show that PRIME graduate head teachers in each school can develop moral leadership practices in school organisation management, aspects of teaching and learning and aspects of student development. Among the moral elements produced in school organisation management leadership are elements of planning based on moral values and aspects of organising human resources. The implications of this study provide essential information to the moral leadership of head teachers, school organisation management, and the Prime module, enhancing more efficient moral leadership.*

**Keywords:** *PRIME, Head Teachers, Moral Leadership, Participatory Action Research, Humanity*

## INTRODUCTION

Organising human resources is a vital aspect of management, viewed as both a science and an art (Liu et al., 2007; Lasena & Suking, 2024). Beyond organisational structures, it includes staffing, recruitment, and the strategic deployment of personnel to roles aligned with institutional objectives (Barrick & Parks-Leduc, 2019). In the Malaysian context, although the Ministry of Education centrally appoints teachers and staff—thus restricting head teachers' discretion in recruitment—head teachers still have the authority to assign and position personnel within the school's organisational framework (Mohamad & Mohamad Johdi, 2009).

This duty underscores the head teacher's role in optimising human resources to improve efficiency, productivity, and educational quality (Amisshah & Addison, 2025).

As the primary leaders of school organisation, head teachers are pivotal in coordinating staff functions to elevate institutional performance (Aquino et al., 2021; Arocena, 2024). Leadership thus forms the backbone of organisational sustainability and progress, particularly in educational settings (Mohamad & Mohamad Johdi, 2009). While leadership theories and models have long examined the complexities of leadership styles and their effectiveness, ongoing debates emphasise the centrality of ethical and moral foundations (Muniandy & Thambu, 2023). Scholars such as Pijanowski (2007) and Hannah et al. (2011) argue that authentic leadership is unattainable without integrating ethical and moral dimensions, positioning moral leadership as an indispensable element in both educational institutions and broader organisational ecosystems.

Contemporary educational institutions face multifaceted challenges, including shortages of skilled personnel, increased workloads, inadequate remuneration, and limited staff participation in decision-making processes (Mushemeza, 2016; Khahro and Javed, 2022; Alenezi et al, 2023)

These issues, evident in Malaysia as well, have directly impacted the quality of educational service delivery (Noor & Ampornstira, 2019). Ishak (2013) notes that as schools are human-driven organisations serving both academic and community functions, the development of their members must extend beyond technical competencies to include ethics, values, and moral commitments. Effective leaders play a central role in this process by offering vision, motivation, and support while fostering relationships that enable optimal use of human resources (Noor & Ampornstira, 2019). Ultimately, the sustainability and success of educational institutions are inseparable from moral leadership, which grounds organisational practices in ethics and societal responsibility.

## **PROBLEM STATEMENT**

School leadership is increasingly acknowledged as a complex and demanding endeavour that requires both the effective mobilisation of management practices and sustained engagement with ethical and humanistic concerns (Muniandy & Thambu, 2023; Arjanto et al., 2025). Unlike other organisations, schools function as moral communities characterised by their moral purpose and broader social function (Greenfield, 2004). This distinctive nature shapes the everyday realities of head teachers, who must engage directly with staff and students, respond to unforeseen challenges, make immediate decisions, and sustain a safe and orderly school environment (Begley & Leonard, 2005).

The management of schools is further complicated by continuous moral demands, institutional permanence, and the relative autonomy of the professional workforce (Gobby et al., 2024). Within this context, head teachers are expected to balance accountability, professional responsibility, and community trust amidst unrelenting pressures (Begley & Leonard, 2005; Shamsul, 2022; Nadarajan et al., 2023). Such demands underscore the indispensable role of moral leadership, which enables leaders to navigate competing expectations while preserving organisational integrity. Moreover, contemporary educational contexts heighten this need, as school leaders are increasingly called upon to develop leadership capacities that extend beyond administrative efficiency to meet the broader needs of teachers and students (Noor & Ampornstira, 2019; Shamsul, 2022).

A particularly pressing challenge in this regard is the responsibility for student welfare, which often complicates the execution of reforms and school improvement initiatives. Immediate student needs and well-being frequently take precedence, thereby delaying or disrupting broader institutional change processes (Mohd Yusaini & Mohd Izham, 2020). At the heart of these challenges lies a limited conceptualisation of “human” and “humanity” within school leadership, which restricts the development of practices that are genuinely human-centred and morally grounded (Muniandy & Thambu, 2023; Advani & Mergenthaler, 2024).

Addressing these gaps requires leadership that is explicitly informed by values, empathy, and ethical judgment, ensuring that institutional objectives remain consistent with the moral purposes of education. In this light, the present study explores how national school head teachers, particularly those who have completed the PRIME programme, enact moral leadership by embedding humanistic principles into their professional practice. Such an approach offers insights into how moral leadership contributes to effective school management, sustainable reform, and the holistic development of educational communities.

## LITERATURE REVIEW OR RESEARCH BACKGROUND

The literature on school leadership emphasises the importance of incorporating humanistic and humanitarian dimensions into leadership practices, highlighting that effective leadership extends beyond technical and managerial skills to encompass ethical values, relational engagement, and the empowerment of others (Thambu, 2023; Sum et al., 2025). Through such commitments, school leaders foster environments that enhance institutional performance while supporting the holistic development of students and staff (Ishak, 2013). Within this context, Fauzan et al., (2023) mention that moral leadership emerges as a pivotal construct, characterised as an approach grounded in ethics and oriented towards the well-being of others. Thambu (2023) defines moral leadership as providing individuals with meaning and inspiration to act ethically in daily life, while Becker (2009) highlights its role as an intrinsic source of motivation, encouraging responsibility and self-accountability to sustain an organisation’s ethical foundation.

Contemporary scholarship increasingly recognises humanistic orientation as a cornerstone of successful leadership practice. Mincu et al. (2024) argue that leadership guided by humanistic principles fosters inclusive, ethical, and sustainable school cultures, while Olugbenga (2022) conceptualises humanity as both a moral disposition and an attitude encompassing goodwill, shared existence, and collective responsibility. Within educational organisations, humanity plays a decisive role in strengthening moral leadership, enabling schools to function holistically by linking academic excellence with the cultivation of values, character, and well-being. In this sense, human-centred leadership enhances the effectiveness of schools as social and moral institutions (Gómez-Leal et al., 2021).

The integration of humanity into leadership, however, cannot be separated from moral leadership (Muniandy & Thambu, 2023). Opene et al., (2024) mentioned that while advances in Artificial Intelligence (AI) increasingly shape educational systems, moral leadership ensures that technology serves human purposes rather than displacing them. Earlier, Ciulla (2019) warns that many contemporary leaders, though skilled in science and technology, lack grounding in the humanities, which risks reducing leadership to technocratic abstractions

detached from lived experiences, values, and ethical imperatives. To prevent such detachment, educational leadership must strike a balance between progress and responsibility by integrating humanistic values and moral commitments. This approach positions school leadership as not only organisationally effective but also transformative in nurturing humane, responsible, and morally grounded communities of learning.

## **METHODOLOGY**

This study employed a qualitative research approach, utilising a participatory action research (PAR) design. PAR was selected as it provides opportunities for collaboration between researchers and participants, thereby ensuring that the research process is both reflective and action-oriented. Specifically, the study adopted a three-cycle PAR model adapted from Crane and Richardson (2000), which emphasises iterative cycles of planning, acting, observing, and reflecting. This cyclical process enables the continuous refinement of practice and facilitates the co-construction of knowledge between researchers and practitioners.

The participants of the study consisted of 21 individuals drawn from three National Schools (Sekolah Kebangsaan, SK). The sample included head teachers, senior administrators, and academic teachers, representing multiple levels of school leadership and teaching practice. The inclusion of these groups was deliberate, as it ensured that diverse perspectives on school management, leadership, and classroom practice could be captured. By involving both leaders and teachers, the study generated a more comprehensive understanding of the challenges and possibilities associated with moral leadership in schools.

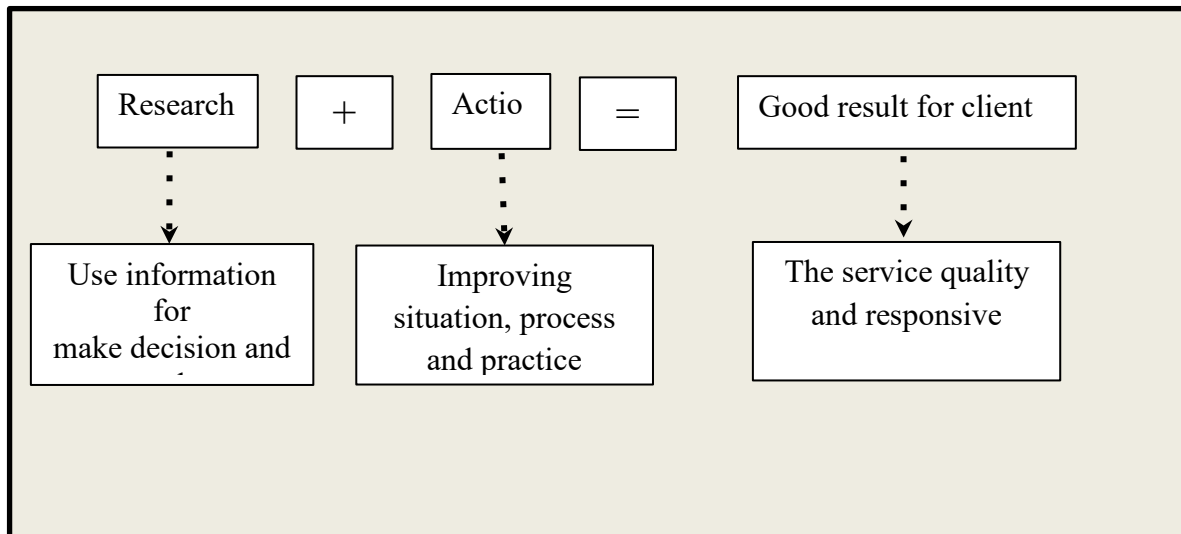
Data were collected through a triangulated process comprising semi-structured interviews, direct observations, and reflective journal entries. The use of multiple data collection techniques not only enhanced the depth of the findings but also ensured the credibility and trustworthiness of the study, consistent with the standards of qualitative research. Interviews provided insights into participants' lived experiences and perceptions, while observations allowed the researcher to witness leadership practices and interactions in situ. Journal entries captured the reflective dimension of participants' engagement with the study.

The data were analysed using thematic analysis, a method well-suited for identifying, organising, and interpreting patterns of meaning across qualitative datasets. The study followed the six phases outlined by Braun and Clarke (2006), namely: (1) familiarisation with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report. This systematic approach enabled the researcher to move from raw data to higher-level thematic interpretations that are grounded in participants' voices and experiences.

Figure 1 illustrates the research and action components within the PAR design. As highlighted by Bergold and Thomas (2012), the essence of PAR lies not solely in its outcomes but in its processes of engagement, collaboration, and transformation. The reciprocal interaction between research and action is crucial for achieving meaningful and sustainable outcomes for participants and their communities. Accordingly, the methodological orientation of this study foregrounds process over product, highlighting the importance of participatory engagement in fostering practical and ethical improvements in school leadership.



**Figure 1: Research and Action Elements in PAR**



## FINDINGS

The results of the interviews conducted with the study participants show that the head teacher is the leader who ensures that school management focuses on two key elements: the human element and the humane element. The head teacher believes that, as the "machinery" implementing government policies, they must have hardware and software to ensure proper functioning. Therefore, the head teacher adheres to the philosophy that humans are hardware and humanity is software. Both elements, which are hardware and software, form the basis for a management and leadership approach grounded in human morality and ethics.

### **The humanistic leader deals harmoniously, acts reasonably, honestly and values.**

For the head teacher, the work process in every aspect needs to happen harmoniously, and the human element cannot always be left out. Even in official matters, following the portfolio of the Senior Subject Teacher, the practice of humane elements is highly prioritised. However, this value can be said to be among the highest for all the layers of leaders in the school in question. The practice of humanitarian elements also occurs in addressing issues and has become a culture; there is no point in pointing fingers between staff and school leaders.

### **The humanistic leader serves humanely and possesses the characteristics of high-mindedness and the people's spirit.**

Based on the views and statements of the Senior Curriculum Assistant, the headmaster consistently requests that all school members apply humane values in handling any matters that require action from the school management. Humanistic leaders serve the high-minded and spirited people by prioritising ethical behaviour, empathy, empowerment and well-being in their organisations. Leaders who foster inclusive environments enhance school effectiveness and support a more compassionate, sustainable world. This leadership style aims to enhance morale, boost engagement, and deliver strong results for both staff and the organisation.

**The humanistic leaders' attributes include accountability, love, empathy, moral responsibility, trust, integrity, honesty, and awareness.**

The aspect of harmony and peace is also an essential aspect in determining the success and management direction of an organisation. A harmonious and peaceful atmosphere is woven from humane practices in life. The school, as a public organisation, should also exhibit humane characteristics for the well-being of the school and its surrounding community. Therefore, in leading a moral and ethical school, the head teacher has instilled a humane attitude as one that needs to be practised by every school member for the sake of the common well-being. He emphasised mutual love for each other regardless of subculture and socioeconomic status. In addition, any discrimination based on religion, subculture, gender and socioeconomic status in administrative organisations is also strictly prohibited. All school members are given the same opportunity to be appreciated and celebrated. The success of the school is considered a success for all its members.

**Figure 1: Research and Action Elements in PAR**

**Source: Department of Health and Human Services (DHHS), (2012)**

*Attributes of the head teacher's humanistic leadership*

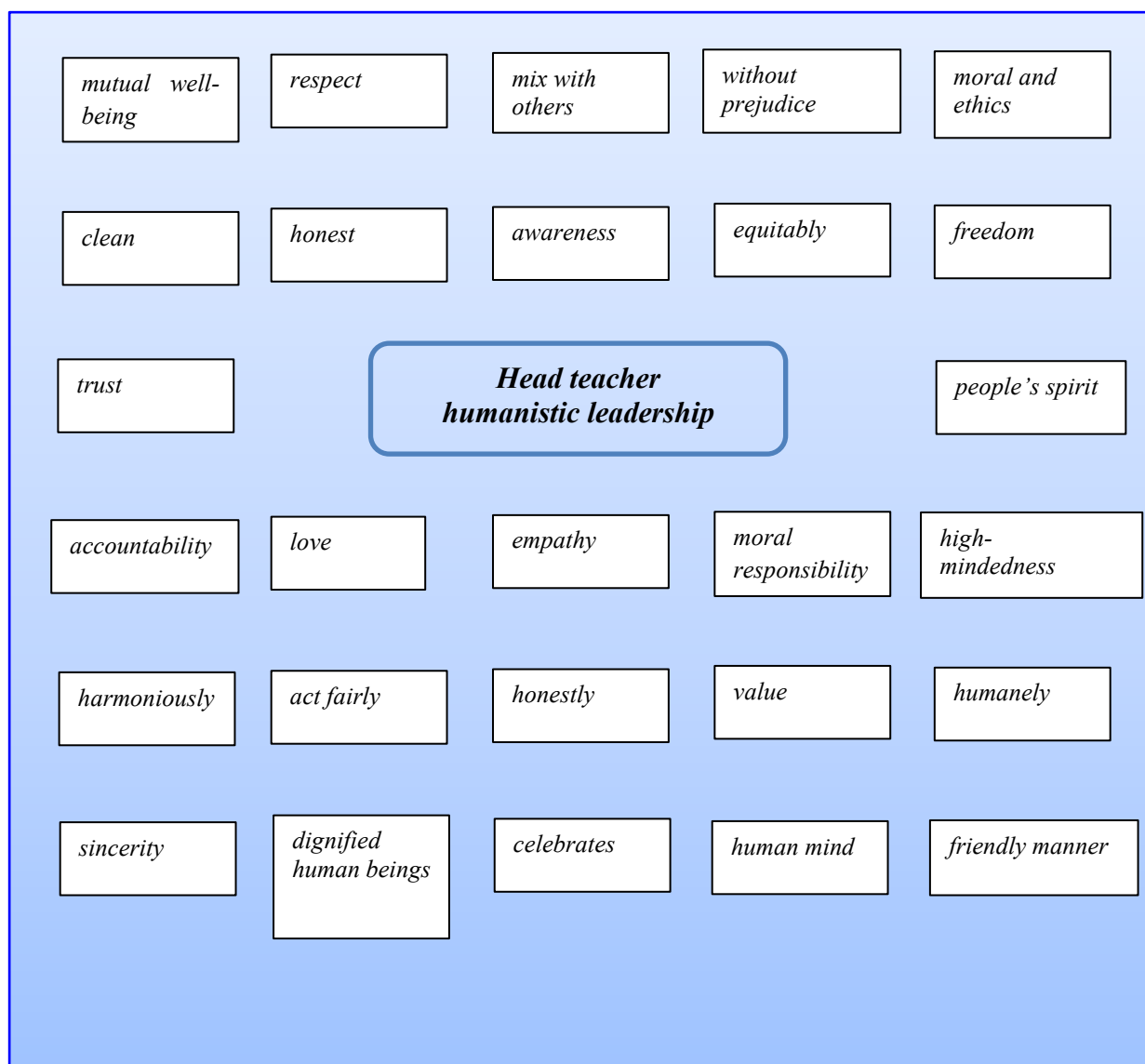


Figure 2 shows that humanistic leadership is not just a theme that exists in the study, but rather a practical framework built for individuals and educational organisations. By focusing on the human aspects of leadership, such as empathy, ethical behaviour, and community building, humanistic leaders can create an environment in which staff and organisations thrive in balance. This holistic approach ultimately contributes to a more sustainable future in educational practice.

PRime leaders' interpretation of humanistic leadership demonstrates that they consistently apply humanistic traits in their daily leadership. Collins (2001) describes Level 5 Leadership as the key to corporate success, highlighting a humanistic approach that blends compassion, respect, and shared well-being to achieve organisational goals.

**Table 1: Description of humanistic leader/leadership attributes in Malaysian School Context**

Themes	Description of a humanistic leader/leadership attributes
fairly humanitarian reduce feelings of prejudice	<i>"I always make sure that every student is chosen fairly [...]. Classwork is distributed equally. [...], the humanitarian factor is the basis [...], can reduce feelings of prejudice, factionalism and conflict among them. This factor can also ensure a good classroom climate for teaching and learning activities."</i> (JR/GA/SKC/G3/22) LEADER
harmoniously act fairly honestly value humanely high-mindedness people's spirit	<i>"If there is a problem, this problem should be seen from a humanitarian aspect and resolved harmoniously. [...], prioritise humanitarian relations and act fairly, honestly and full of humanitarian values"</i> . (TB/PK1/SKA/G1/22) <i>"One of my duties [...], I was asked to deal [...], problems humanely and not accuse or impose fines, [...], characteristics of "right mind" (high-mindedness), [...], a leader with a people's spirit."</i> (TB/PKKo/SKC/G2/22)
accountability love empathy moral responsibility... trust clean honest awareness	<i>"[...]software aspects such as accountability, love, empathy, moral responsibility, trust, clean and honest, teachers need to have. [...], head teacher became an "eye-opener" . This awareness [...] to our responsibilities towards the duties we have"</i> . (TB/PKHm/SKA/G3/22)
equitably freedom mutual well-being respect mix with others without prejudice	<i>[...], make sure [...], harmony [...], maintained. [...], fairly and equitably. [...] freedom [...], mutual well-being [...], valued and respected. [...], encouraged to mix with other friends from various economic, tribal and religious backgrounds without prejudice."</i> (TB/PKHM/SKB/G3/22).
moral and ethics human mind celebrates dignified human beings	<i>[...], morals and ethics [...], culture and civilization. Thus, the process of radiating the human mind [...]. customer friendly [...], 'celebrates' [...], dignified human beings. Therefore, I fully support the humane or humanitarian management style recommended by the head teacher in the school's administrative "</i> . (TB/PK1/SKC/G2/22)

Table 1 summarises interviews conducted in several schools with various participants, including senior assistants. The analysis from these interviews examined multiple aspects of human and interpersonal dynamics between senior assistants and head teachers.

The main goal of education is to produce people who are comprehensive, integrated, balanced and harmonious in emotional, spiritual, intellectual, and physical aspects. Therefore, students need to be formed from childhood so that they can become knowledgeable, faithful and charitable citizens. In this context, in addition to teaching and learning aspects, classroom management and class organisation are also important. Class teachers also use a class management approach that is based on people and humanity. In choosing and establishing a class organisation, the selection is carried out democratically without any element of favouritism. Those who are appointed to hold the reins of the class organisation are elected by majority vote for the sake of a stable course of the class organisation. Refer to the following journal entry:

**Table 2: Observation of humanistic leader/leadership attributes in Malaysian School Context**

Themes	Head teachers' observation of a humanistic leader/leadership attribute among senior assistants
human and humanity people and humanity perfect manner harmonious atmosphere human approach	<i>"[...] , the head teacher fully adheres to the concept of human and humanity as the basis of his leadership. [...] , he ensured that the three senior school administrators [...] implement management that focuses on human and humanitarian elements. [...] , one of the essential elements [...] , based on people and humanity [...] , which is the head teacher, is necessary to guarantee that the organisation's activities run in an orderly and perfect manner in a harmonious atmosphere. [...] , the head teacher can be a role model for his subordinates in giving systematic instructions and using a more humane approach. The same chain of command is also used by senior assistants to the Head of Panels and to other academic teachers (subject teachers). (PM/PN/GB/SKA/G2/22). RESEARCHER ON THE HEAD TEACHER</i>
human and humanitarian friendly manner Request touch the hearts and feelings	<i>"[...] , management style based on human and humanitarian aspects. In giving task instructions [...] , Senior Assistant of Student Affairs and Senior Assistant of Co-Curriculum Activities, Senior Assistant 1 gave task instructions [...] in a more "friend-friendly" manner. He uses the style of "request to a friend" to carry out tasks and does not give instructions in the form of "ordering" alone. [...] , address the concerns and perspectives of subordinates. [...] , The way Senior Assistant 1 communicates [...] , subordinates can create good integrity between him and other members of the organisation. (PM/GB/PK1/SKB/G3/22). HEAD TEACHER'S ON SENIOR ASSISTANT 1</i>
motivation praises communication celebration	<i>"[...] , he provides good motivation to school staff (General Junior Workers) such as gardeners and cleaners. [...] , often praises the craft of the school cleaners [...] . The commitment of school cleaners who come to school early to start their daily tasks is often praised by Senior Assistant 1 and is often used as an example to students at the weekly school assembly. [...] motivate them, gardeners and cleaners are also appreciated, in the celebration of "Environment Week" at the school level, by giving them gifts. (PM/GB/PK1/SKC/G3/22). HEAD TEACHER'S ON SENIOR ASSISTANT 1</i>
responsibility honesty	<i>"[...] , In carrying out his duties. He is very committed with his work. The duties as the head of the unit are carried out with full of responsibility, sincerity and honesty. [...] . (PM/GB/PKHM/SKA/G3/22). HEAD TEACHER'S ON SENIOR ASSISTANT OF STUDENT AFFAIRS</i>
people and humanity	

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responsibility  
safety

*"[...], Senior Curriculum Assistant also manages his unit based on the concept of people and humanity. [...] manages his unit well. [...], with full responsibility. [...], always ensure the safety of the students [...], Appreciation for the life and safety of individual students is prioritized by the co-curriculum unit.*

*(PM/GB/PKK/SKB/G2/22). HEAD TEACHER'S ON SENIOR ASSISTANT OF CO-CURRICULUM SENIOR ASSISTANT*

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Table 2 presents observations from multiple schools with various participants, including senior assistants. The analysis derived from these observations focused on the different leadership styles exhibited by senior assistants, highlighting the impact of human and humane approaches on staff morale and collaboration.

In addition, the head teacher's observation notes on Senior Assistant 1 also indicate that Senior Assistant 1's management style remains focused on human and humanitarian aspects. When giving task instructions to the Senior Assistant of Student Affairs and the Senior Assistant of Co-Curriculum Activities, Senior Assistant 1 provided task instructions in a more "friendly" manner, and the tasks assigned were not as "authoritative" as those of the other assistants. He uses the style of "request to a friend" to carry out tasks and does not give instructions in the form of "ordering" alone.

The head teacher's observation of Senior Assistant 1 also shows that he provides good motivation to school staff (General Junior Workers), such as gardeners and cleaners. He also often praises the craft of the school cleaners, who usually ensure the cleanliness of the school grounds. Likewise, with the craft of the gardener who consistently provides the "greenness" of the trees preserved in the school grounds. The work and responsibility of the gardener who takes care of each flower plant, relaxation garden and herb garden is always praised and accompanied by words such as "thank you", "it's great", "we appreciate", "we flatter" and so on.

The head teacher's observation of the Senior Assistant of Student Affairs also shows that he uses an approach based on people and humanity in carrying out his duties. He is very committed to his work. The duties as the head of the unit are carried out with full responsibility, sincerity and honesty. The attitude and way of organising the Student Affairs unit clearly demonstrate the success of the humane approach, which allows each member of the organisation to be united and maintain integrity in carrying out the tasks assigned by the leader.

The head teacher also made observations on the Co-Curriculum Senior Assistant teachers to discredit their leadership style. It turns out that the Senior Curriculum Assistant also manages his unit based on the concept of people and humanity. They always ensure the safety of the students under their care, whether during PJK teaching time in the field or in the classroom. In all activities, he emphasises the safety of students so that they do not get involved in any accidents that injure or result in the loss of life. The co-curriculum unit prioritises appreciation for the life and safety of individual students.

The results of the interviews conducted with the study participants indicate that the head teacher is the leader who ensures that school management focuses on two key elements: the human element and the humanitarian element. The head teacher believes that, as the "machinery" implements government policies, it must have hardware and software to function correctly. Therefore, the Head Teacher adheres to the philosophy of humans as hardware and

humanity as software. Elements that are both hardware and software form the basis for a management and leadership approach grounded in human morality and ethics. In the interview session, the study participants said that:

“The head teacher's management approach that prioritises people and humanity is an approach that can gain the support of senior administrators, teachers, students and other staff. He often reminds me to consider the humanitarian aspects when addressing issues or conflicts that arise in supervising the work of teachers and staff. If there is a problem, it should be viewed from a humanitarian perspective and resolved harmoniously.

## **DISCUSSION**

School leadership is inseparable from human and humanitarian values, where every member—teachers, staff, students, and support workers—must be respected and empowered. Embedding these values encourages fairness, ethical conduct, and rational conflict resolution, creating a peaceful and conducive learning environment (Begley, 2000; Friedman, 2003; Hodgkinson, 1991).

Restorative practices, such as community work instead of fines for misconduct, foster accountability and moral growth while reducing punitive outcomes. Schools, whether SK, SJKC, SJKT, or secondary, act as custodians of civilisation by treating members equitably, minimising favouritism, and bridging social and cultural differences to support both academic success and personal development (Treviño, Hartman & Brown, 2000).

Humanitarian leadership further extends to administrators who model respect and collaboration by seeking assistance rather than imposing authority, and by recognising contributions. Such practices enhance trust, cohesion, and shared responsibility, demonstrating that educational excellence depends not on individual authority but on teamwork and moral leadership that unites diverse communities (Rahmad & Zulkifli, 2013; Nadarajan, 2023; Sakina et al., 2023).

## **SUGGESTIONS FOR FUTURE RESEARCH**

This study was designed with a specific focus on the administrative practices of PRIme graduate head teachers. Within this scope, the investigation centred on the moral leadership of head teachers as it was enacted across three key dimensions of school life: school management, teaching and learning, and student development. These three domains function as the foundational “pillars” of the school organisation, with their strength and coherence providing stability and direction for the overall institutional journey. Accordingly, the analysis of moral leadership in this study was restricted to these three dimensions, explored within the context of three National Primary Schools (Sekolah Kebangsaan, SK). The findings, therefore, must be understood within this bounded framework and cannot be generalised beyond the immediate context.

To achieve higher levels of validity, reliability, and transferability, future research should be broadened to encompass a broader range of school settings. This includes extending the study to Chinese National Type Primary Schools (Sekolah Jenis Kebangsaan Cina, SJKC) and Tamil National Type Primary Schools (Sekolah Jenis Kebangsaan Tamil, SJKT), which operate within Malaysia's pluralistic education system. Such an expansion would provide a more comprehensive understanding of how moral leadership is enacted across culturally diverse

environments. In addition, similar research should be conducted nationwide to capture regional variations and to provide a holistic picture of the moral dimensions of head teacher leadership across Malaysia. Beyond primary schools, it is equally important to extend the scope of inquiry to secondary schools and boarding schools, where the organisational scale, cultural composition, and leadership demands may differ significantly. Examining these varied contexts would enable researchers to assess how cultural diversity, institutional structures, and educational demands influence the application and practice of moral leadership.

Furthermore, the study of moral leadership in schools should not be limited to operational practices alone but should also integrate deeper theoretical considerations drawn from moral philosophy. Three core elements are particularly relevant: moral theory, moral judgment, and moral flexibility. Moral theory provides a philosophical foundation upon which leadership practices can be grounded, while moral judgment reflects the leader's ability to evaluate situations and make ethically sound decisions. Moral flexibility, on the other hand, acknowledges the need for leaders to adapt ethical principles pragmatically when facing complex and often conflicting organisational challenges. Head teachers, as moral actors, are frequently confronted with situations where rigid adherence to rules may not yield the most constructive outcomes. In such cases, moral flexibility when exercised with sound judgment can serve as a guiding principle to resolve dilemmas in ways that preserve both institutional stability and ethical integrity.

In this sense, future research should explore how head teachers navigate the interplay between moral judgment and moral flexibility in their leadership practices. Such an inquiry would provide valuable insights into the ethical decision-making processes of school leaders, thereby contributing to a more nuanced understanding of moral leadership. By situating leadership within both practical and philosophical frameworks, research in this area can enrich the development of moral leadership theory and inform the training and professional development of school leaders in diverse educational contexts.

## **CONCLUSION**

This study reaffirms that effective school leadership cannot be separated from human and humanitarian values. When principals and senior administrators in SK, SJKC, SJKT, and secondary schools prioritise empathy, fairness, respect, and collaboration, they create environments that nurture both academic excellence and moral growth. Leadership that replaces punitive measures with restorative approaches fosters accountability, while valuing all school members equitably helps bridge social and cultural divides, contributing to a harmonious and inclusive school climate.

From a theoretical standpoint, moral leadership requires the integration of moral judgment—the ability to weigh competing values in decision-making—and moral flexibility—the capacity to adapt principles pragmatically without compromising ethical integrity. These dimensions enable leaders to manage conflicts effectively, respond to diverse contexts across different school types, and foster trust among teachers, students, and the broader community.

As education navigates the challenges of the digital era, schools need leaders who are not only competent managers but also moral exemplars capable of guiding institutions toward both excellence and humanity. Moral leadership grounded in judgment, flexibility, and human

values offers a sustainable pathway for building resilient, high-performing schools that serve as foundations of civilisation and nation-building.

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## DISSECTING TOWARDS DIAGNOSIS: EFFECTIVE PSYCHOMETRIC DATA MANAGEMENT

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**Abstract:** *This paper is an outgrowth of a larger intrinsic case study on the development of an effective procedure to diagnose and identify appropriate strategies for supporting low-performing learners. The case involved a group of students preparing for the SPM examination who had lost hope of passing the History subject. The primary purpose of this paper is to emphasize the importance of data dissection and decontextualization of various types of learner data, including psychometric data, school-based assessment progress, and student profile and context data. This decontextualization is a crucial step for prescribing the correct interventions. The data were collected through conversational interviews, peripheral observations, and document analysis, using introspection and retrospection processes from participants who were directly or indirectly managing the case. The data dissection process followed the principles of Instructional Systems Design (ISD), which were applied using the ADDIE Model (Analysis, Design, Development, Implementation, and Evaluation) and the major outcome was the establishment of the Data Dissection-Diagnosis Framework. This framework may serve as a meaningful guideline for other schools where it demonstrates the effective use of people analytics in an educational setting to inform and facilitate early engagement with at-risk students. This innovation not only helps identify suitable learning strategies but also boosts student morale and motivation to strive for excellence. As each school is unique, the procedure can be adapted and refined to fit different contexts, cultures, and practices.*

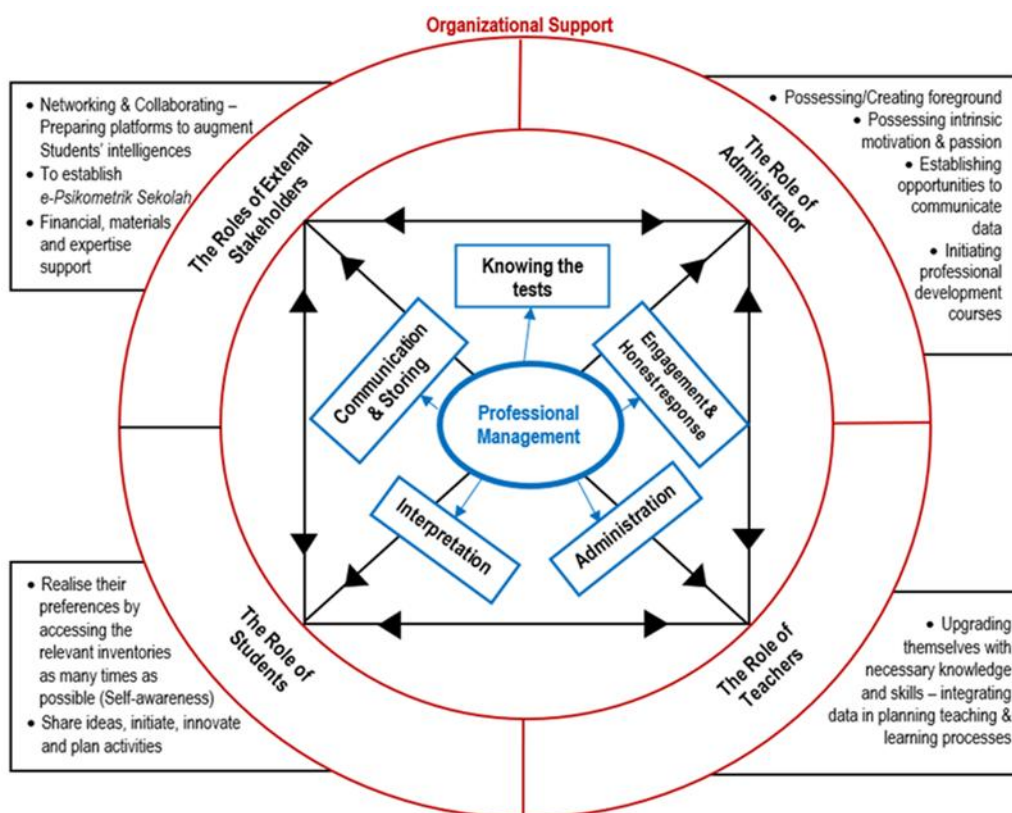
*Keywords:* Low Performing Learners, Learning Strategies, Data Dissection-Diagnosis, ADDIE Model

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### 1. Introduction

In 2023, a research team at the Centre for Research and Evaluation within an educational leadership and management training institute initiated a new study. A school was selected after it invited the team to help develop a framework for the management and administration of psychometric assessments as depicted in Figure 1.

Figure 1 The Management and Implementation of Psychometric Assessment (Redzuan bin Jantan, Lim, Norhasnida binti Rejab, 2023)



From the synthesized data, the research team identified two major domains and their related constructs, which helped establish a **conceptual framework** for the management and implementation of psychometric data at the school. This framework served as a holistic "explanatory device" (Kor & Teoh, 2009) that enabled the school and the research team to monitor aspects that required closer attention and further discussion. This initial work spurred a more intensive and in-depth investigation at the school.

## 2. The Issues

Analysis of the classroom assessment data of the school identified a group of low-performing Form Five students, specifically in the History subject. At this point, the aspect of 'establishing opportunities to communicate data,' as depicted in the original conceptual framework (Figure 1), required greater focus. To prepare these students for their SPM examinations, the school decided to utilize their psychometric data and synthesize it with other relevant information, such as classroom assessment data, demographic data, and involvement in co-curricular activities. According to Gray, McGuiness, Owende, and Carthy (2014), the effective use of psychometric data can support the process of deciphering and determining more objective strategies to improve student performance. All these data sources were crucial for the school to make more justifiable decisions to support the students' learning processes.

However, the existence of multiple data sources for each student made the synthesis process complex. Consequently, the school and research team undertook the challenge of innovating a **centralized Data Dissection-Diagnosis** procedure. This procedure allowed for a step-by-step analysis of multiple data sources before reaching a final decision on the intervention.

### 3. Literature Review

The development of this centralized Data Dissection-Diagnosis procedure was strongly based on the principles of data-based decision-making and people analytics strategies. The complex interdependence of learning, teaching, and data has been increasingly recognized (Van der Kleij, Vermeulen, Kim Schildkamp & Eggen, 2015). The foundation of this procedure was driven by the availability of quality data.

According to Schildkamp and Kuiper (2010), data-based decision-making involves systematically analyzing existing data sources within a school, applying the outcomes of this analysis to innovate teaching and curricula, and then implementing and evaluating these innovations. This paper specifically focusses on establishing appropriate interventions to help the case in this study improve academically, particularly in the History subject. The information gathered can include both qualitative and quantitative data (Lai & Schildkamp, 2013). Data encompasses not only assessment results but also other types, such as student background characteristics.

According to Coburn and Turner (2011), data can be used to facilitate and optimize student learning by considering their needs and unique characteristics. Teachers can set appropriate learning goals based on students' current achievements and then monitor whether students are reaching these goals before making instructional adjustments (Bernhardt, 2003; Earl & Katz, 2006). This specific aspect was given serious consideration during the formulation of the Data Dissection-Diagnosis procedure.

Furthermore, cognitive ability remains an important determinant of academic performance (Cassidy, 2011), often measured as prior academic ability. Demographic data, such as age and gender, have been cited as significant factors (Naderi, Abdullah, Sharir, & Kumar, 2009), as have data gathered from learner activity and other learning systems (López, Luna, Romero, & Ventura, 2012). This aligns with the essence of people analytics, another fundamental basis for the procedure described in this paper.

People analytics is the use of people-related data in organizations to gain insights, make predictions, and identify trends (Burnham, 2022). A school that adopts people analytics strategies can access constructs such as learner engagement, satisfaction, motivation, personality, behavior, cognitive ability, and well-being, which in turn enhance the leadership capability and potential of the school. These principles were integral to the process of this study before the research and school management teams began building the procedure. The literature review motivated the team to invest their energy in synthesizing multiple sources of information about the case to endorse the students' academic performance. The research and school management teams made this possible on a single platform which was the centralized Data Dissection-Diagnosis procedure.

### 4. Aim and Objectives

To achieve the aim of establishing a centralized Data Dissection-Diagnosis procedure, the steps involved were transformed into the objectives of this paper, as outlined below.

#### *Objectives and Research Questions*

The general objectives of this study were to:

- i. Analyze various data types to establish the procedure.
- ii. Design the content of the procedure.

- iii. Develop the operational items within the procedure.
- iv. Implement the procedure.
- v. Evaluate the effectiveness of the procedure.

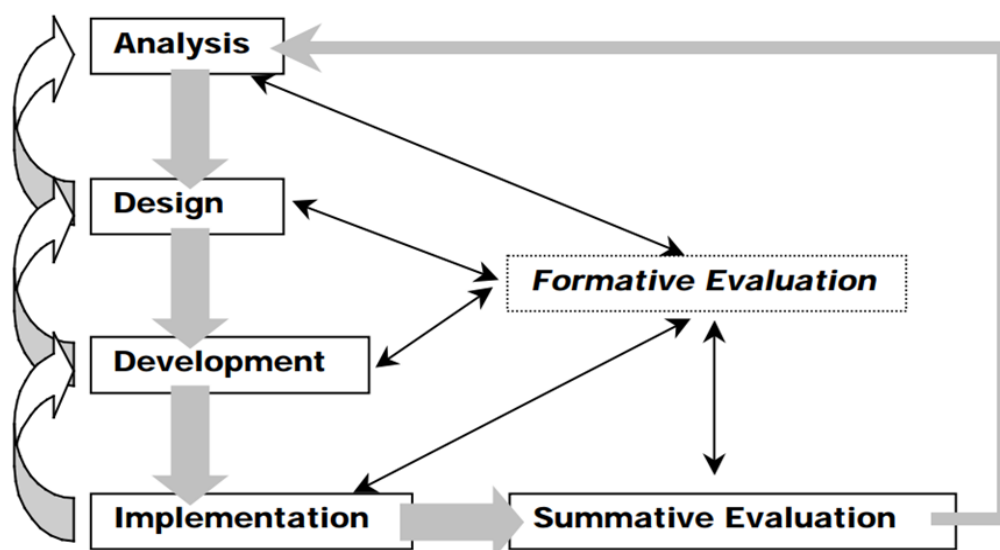
Delineating the procedure for managing the collection, analysis, and synthesis of psychometric and other related data of this case was advisable because sharing good practices can motivate other schools, particularly those still in the learning stages, to be more rigorous in this area. These objectives led to the following research questions:

- i. Research Question 1: What types of data were analyzed to establish the procedure?
- ii. Research Question 2: What content was designed for the procedure?
- iii. Research Question 3: What operational items were developed within the procedure?
- iv. Research Question 4: How was the implementation executed using the procedure?
- v. Research Question 5: What contributed to the effectiveness of the procedure?

## 5. Conceptual and Research Framework

The development of the systematic Data Dissection-Diagnosis procedure in this paper followed the principles of the ADDIE Model for Instructional System Design (ISD) (McGriff, 2000) as depicted in Figure 2. The effort to generate this procedure involved designing, developing, and integrating steps to facilitate a more systematic measurement of the aspects experienced by low-performing students that required intervention.

Figure 2 ADDIE Model: Instructional System Design (ISD) (McGriff, 2000)



This paper documents a product development process where the entire design and development process utilized the ADDIE model. The steps employed during the design and development, which followed the principles of Instructional System Development (ISD), were popularized by Dick, Carey, and Carey (2009).

The steps generally consisted of:

- i. **Front-end analysis:** This involved a needs analysis, goal analysis, instructional analysis (content and task analysis), and user and context analysis.

- ii. **Design:** This phase determined the performance objectives, instructional strategies, and domains that governed the major content of the procedure, ensuring they were relevant to the case's needs and contexts.
- iii. **Development:** This required adapting relevant external ideas and integrating related instructional materials (images, presentations, multimedia) as well as multiple sources of student data to build the Data Dissection-Diagnosis procedure.
- iv. **Implementation and formative evaluation:** This involved piloting the procedure and gathering data and feedback during the process to ensure its execution aligned with the aims and objectives of this paper.
- v. **Revision:** Data gathered from the formative evaluation was used to refine and re-examine the appropriateness of the procedure.
- vi. **Impact/Summative Evaluation:** This determined the value of the instruction and its effectiveness in relation to the general aims and objectives of developing the procedure.

## 6. Research Methodology

The case for this paper was a group of low-performing Form Five students, specifically in the History subject who were going to sit for their SPM examination. The informants were the principal, school counsellor, and teachers namely class teachers, subject teachers and co-curricular instructors who had direct communication with the case.

### *Data Collection Methods*

This research was a qualitative intrinsic case study that adopted three primary research methods: **observation**, **conversational interview**, and **document analysis**.

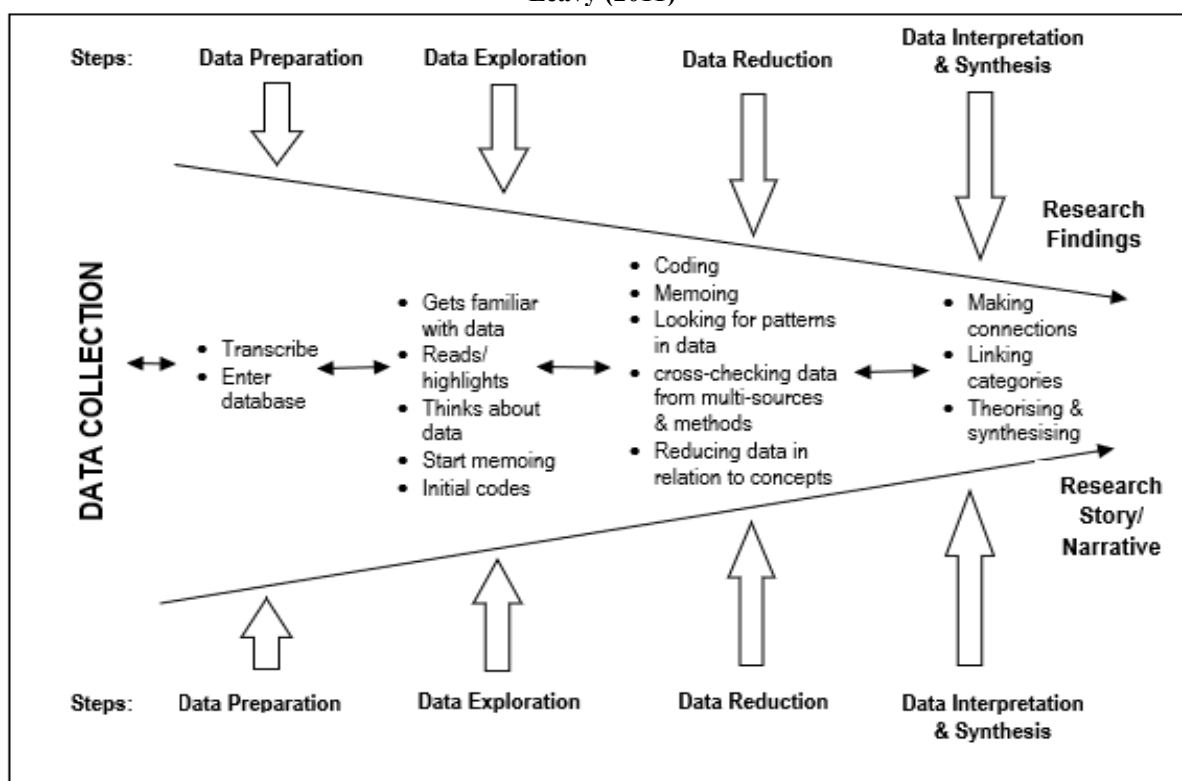
- i. *Observation*  
According to Drummond, Rouse, and Pugh (as cited in Southworth & Conner, 1999), observation is a process where educators can understand and give meaning to what they see and hear, drawing on their own knowledge, experience, and senses. It also allows educators to provide a full and useful account of a student's learning and development by revealing its richness and complexity. This method was useful for the school and research team to capture the dynamic nature of events and uncover connections, causes, and correlations that emerged in certain trends and patterns over time (Cohen, Manion & Morrison, 2017). Observations were conducted on four different settings encircling the academic life the case namely physical, human, interactional and programme settings. This input was instrumental in supporting the establishment of the procedure for the students' benefit.
- ii. *Conversational Interview*  
Interviews allow researchers to obtain important data that cannot be acquired through other means (Gay, Mills, & Airasian, 2009). For this paper, conversational interviews were chosen as they were more effective and appropriate for school-based inquiries, as they could be conducted in a more relaxed manner with all the participants. Interviews were conducted with the teachers, school counsellor, and principal who had direct communication with the students.
- iii. *Document Analysis*  
Documents are valuable sources of information, as many exist before researchers begin their work. They can help researchers track historical processes or reconstruct past events and ongoing processes that are not available for direct observation (Daymon & Holloway, 2002). This paper presents a retrospective account of what the school and academic leaders carried out in managing and administering the psychometric

assessment with the students. Therefore, all compiled documents were significant sources of information and reference for tracking the path of the school toward ensuring better student outcomes and performance. Data sources extracted for document analysis in this paper were namely psychometric data, school-based assessment data, student profile and context data which include demographic data and students' cocurricular activities involvement.

## 7. Data Analysis and Synthesis

The data analysis process for this study followed the steps established by Hesse-Biber and Leavy (2006). This systematic approach consisted of four key stages: data preparation, data exploration, data reduction, and data synthesis. These steps were essential for a thorough examination of the various data types collected, including psychometric, school-based assessment, and profile data. The analysis transformed the collected information into actionable insights that fuelled the development of the **Data Dissection-Diagnosis Framework** in this paper.

Figure 3 Steps in Data analysis and Interpretation: A Visual Model. Adapted from Hesse-Biber and Leavy (2011)

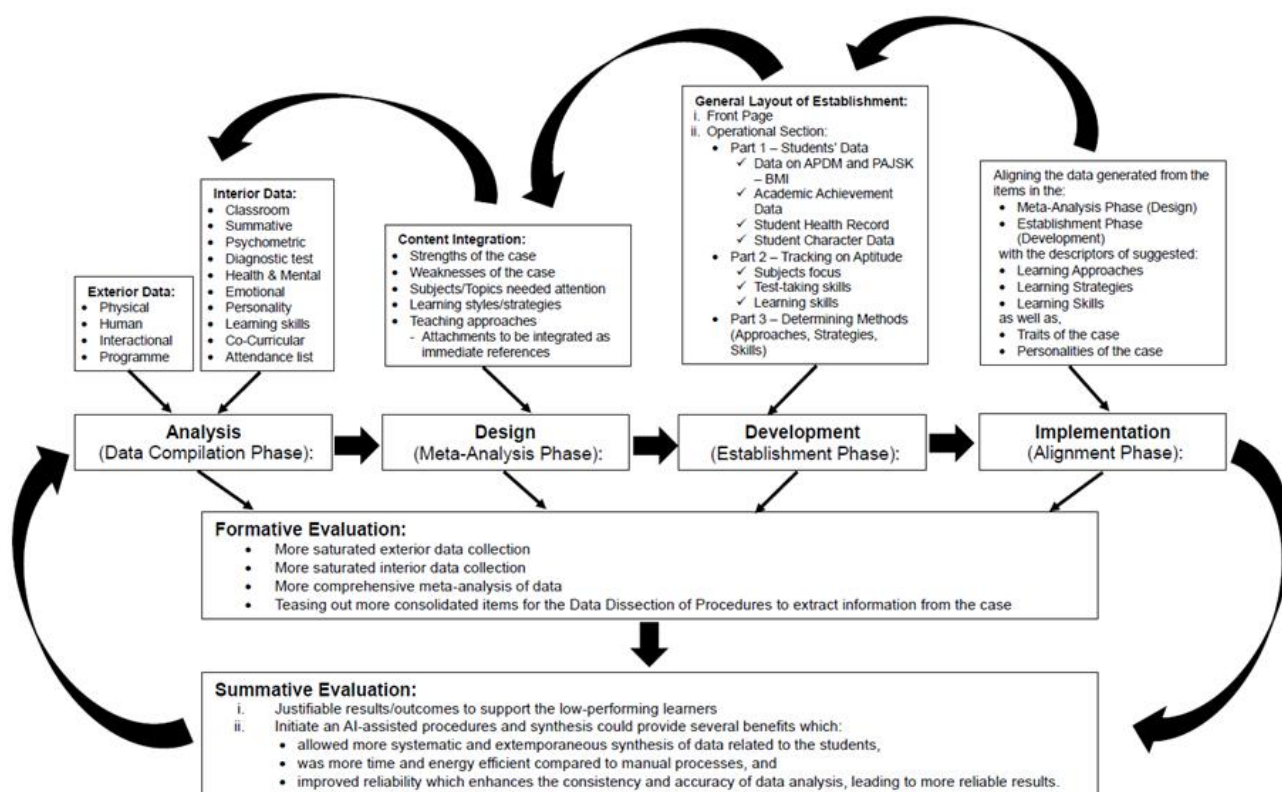


## 8. Findings And Outcomes

This section is dedicated to presenting the findings from Research Questions 1 to 5, covering the stages of Analysis, Design, Development, Implementation, and Formative and Summative Evaluation. It details the establishment of the **Data Dissection-Diagnosis Framework** depicted in Figure 4 and the comprehensive extraction of data about the case, enabling the creation of more justifiable interventions for students who aimed to pass the History paper to obtain a full certificate.



**Figure 4 Data Dissection-Diagnosis Procedure (Decontextualization of Data & Recontextualization of Procedures)**



According to the framework in Figure 4, the data compilation and meta-analysis phases of both external and internal data were crucial for identifying the aspects that required solid information about the case. The outcomes of these two phases fuelled the integration of relevant items into the establishment phase of the Data Dissection-Diagnosis procedure, which could be used by the research and school management team to extract focused and verifiable data about the case. When the establishment phase was well-executed, the alignment phase during implementation could be performed more reliably to create appropriate interventions for the students. More detailed information on the Data Dissection-Diagnosis Framework was depicted in Figure 4.

## 9. Conclusion and Contributions of the Study

This article makes several key contributions to the fields of educational leadership, instructional design, and data-driven decision-making.

First, it offers a novel and highly contextualized 'learner profiling' process that integrates multiple sources of data—not just psychometric assessments, but also school-based assessment progress, and student profile and context data. This contrasts with methods that rely solely on assessment results or predefined diagnoses from literature. This innovative approach provides a more holistic view of students, allowing for the identification of the most appropriate remedies tailored to their specific needs and strengths.

Second, the paper provides a practical and actionable Data Dissection-Diagnosis Framework that can serve as a meaningful guideline for schools facing similar challenges with low-performing students. This contribution is particularly significant because it operationalizes

complex theoretical concepts like Instructional Systems Design (ISD) and the ADDIE model into a step-by-step process that practitioners can adapt and refine according to their own context and culture. The sharing of this good practice can generate chain reactions and motivate other schools to be more rigorous in this aspect.

Third, the study emphasizes the importance of people analytics in an educational setting. By accessing constructs like learner engagement, motivation, and cognitive ability, the school can gain valuable insights that are not typically captured by traditional assessment methods. This highlights the potential of using diverse data sets to make more justifiable decisions and create more reliable interventions for students. This approach also promotes early engagement with students at risk of failing, which is a significant step toward preventing academic setbacks.

Finally, the article contributes to the existing body of research by demonstrating a successful, real-world application of data-based decision-making to elevate the academic performance of students who had given up hope. The findings provide tangible evidence that systematically analyzing data, can boost student morale and support them in achieving academic excellence.

#### 10. Limitations and Future Directions

This study, while providing a valuable framework for data-driven interventions, is subject to several limitations that should be considered for future research.

First, the research was an intrinsic case study focussing on a single school and a specific group of low-performing learners. While this design allowed for an in-depth understanding of the Data Dissection-Diagnosis Framework, its findings may not be directly generalizable to other schools due to their idiosyncratic nature, different contexts, cultures, and practices. Future research could validate this procedure across a wider range of schools and student demographics to assess its adaptability and effectiveness on a broader scale.

Second, the data collection relied heavily on qualitative methods such as conversational interviews and peripheral observations. While these methods provided rich, contextual data, the findings are based on the perceptions and retrospective accounts of the participants, future studies could incorporate more quantitative data, such as longitudinal academic performance tracking and pre- and post-intervention test scores, to provide a more objective measure and impact on student academic outcomes.

Third, the study focused on a specific academic subject, History. The effectiveness of the developed framework may vary when applied to other subjects with different learning demands and assessment methods. Subsequent research should explore how the procedure can be adapted for subjects like mathematics or science, which may require different diagnostic criteria and instructional strategies.

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# EMPOWERING SELF-DIRECTED LEARNING THROUGH GPT: A DIGITAL LEADERSHIP APPROACH IN EDUCATION

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**Abstract:** *The fast growth of artificial intelligence has brought powerful tools like Generative Pre-trained Transformers (GPT). These tools are starting to change how education works. From the digital leadership view, this study looks at how GPT can be used in a smart way to support students in learning by themselves. Today, school leaders are not only asked to bring in new technology but also to guide students and teachers to use it meaningfully. GPT can be a partner in learning instead of just giving quick answers. It gives students chances to search for information, test ideas, solve problems, and think back on what they learned. This paper suggests a framework to study how digital leadership can improve self-directed learning (SDL) with the help of GPT, especially ChatGPT. With the right leadership, GPT can become more than just a tool it can change classrooms into spaces where students take more control, and learning stays centered on them.*

**Keywords:** *(Artificial Intelligence, Generative Pre-trained Transformers, Digital Leadership, Self-Directed Learning, Educational Innovation)*

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## Introduction

In today's digital age, self-directed learning (SDL) is a very important skill for lifelong learning. It helps students manage their own studies and deal with the large amount of information on online platforms. Bester (2021) explains that SDL shapes the way students think, solve problems, and reflect on their work, while also building strategies for independent study. Morris (2019) explains that SDL is more than a classroom skill; it is a broader ability that helps learners adapt to social and technological changes. These ideas show that promoting SDL is not a choice but a duty for teachers who want to prepare students for today's challenges. SDL occur when learners take charge of planning, carrying out, and checking their own learning. It involves setting goals, monitoring progress, and reflecting on results. McCarthy et al. (2023) say SDL encourages independent thinking because it lets learners create their own goals, track progress, and reflect on success or failure. Aljafari (2021) adds that SDL gives students autonomy, allowing them to choose their pace, master content, and apply personal strategies. Together, these studies show SDL helps learners become more flexible and resilient which are important traits for today's complex learning world (McCarthy et al., 2023; Aljafari, 2021).

Therefore, educators need to integrate the use of AI in SDL since AI tools like ChatGPT is widely recognized for making learning more personal and flexible. Therefore, educators need to integrate the use of AI in SDL. Tools such as ChatGPT, adaptive learning systems, and personalized apps can help make SDL tasks easier. Research also highlights both the potential and the challenges of this integration. Trivedi (2023) notes that AI supports adaptive learning, tutoring, and data-driven decisions that improve student performance. Ali (2025) shows how AI in medical education provides simulation training and personalized learning paths, improving both theory and practice.

However, these benefits come with risks. Ethical issues, lack of equal access, and the chance that students may lose critical thinking skills are real concerns. Both Trivedi (2023) and Ali (2025) say AI should be used responsibly, with digital literacy and safeguards. This means AI is both a major opportunity and a challenge that will shape how learning is designed worldwide. As AI tools like ChatGPT become common, teachers' roles become even more important. Teachers need to not only adapt to the tools but also guide students to think critically about what AI produces. Yang (2024) argues that teachers should move from just giving knowledge to becoming leaders in human-computer collaboration. Buenaga and Bueno (2024) also say GPT can support teaching, but assessment methods need to adapt to protect honesty. This shows why teacher training and clear frameworks are needed.

### **Problem Statement**

Self-Directed Learning (SDL) is often connected to the economy because today's economic environment is fast-changing, competitive, and driven by technology. Jobs require new skills all the time, and many careers demand continuous learning rather than relying only on formal education. Dvořáková (2022) notes that SDL combines responsibility with thinking skills, both of which are essential in technology-rich learning environments. Similarly, Yarbrough and Hughes (2022) emphasize that SDL is not only an academic skill but also a life skill. People rely on it to keep reskilling and upskilling in a fast-changing job market (Dvořáková, 2022; Yarbrough & Hughes, 2022).

Still, SDL is not without challenges. Students may lose motivation, choose ineffective resources, or struggle to measure progress. McCarthy et al. (2023) found that even motivated learners often require tools and mentors to stay focused. Alizadeh Barat (2008) also showed that many students, especially in higher education, lacked the confidence and self-checking skills needed for SDL. These findings suggest that SDL is most effective when supported with proper structure, guidance, and teacher involvement.

In the modern educational context, teachers serve not only as content experts but also as leaders who guide, mentor, and inspire students in rapidly changing technological landscapes (Chang et al., 2024). One of the most central aspects of this leadership is mentoring, which allows teachers to influence both student learning and peer professional growth. Gul et al. (2019) explain that mentoring strengthens teacher leadership by creating collaborative environments where experienced educators share reflective practices and effective strategies. This form of leadership is not hierarchical but transformational, built on trust, modelling, and shared growth. Similarly, Hudson (2013) notes that teacher mentors act as transformational leaders who encourage preservice teachers through personal support, intellectual challenge, and visionary guidance, promoting growth for both mentors and mentees. Taken together, these roles are particularly important for building a culture of continuous improvement in classrooms that are now deeply influenced by digital tools (Gul et al., 2019; Hudson, 2013).

Teaching today is no longer just about giving knowledge. Teachers are expected to become digital leaders who can guide, support, and inspire students in classrooms filled with technology. This role needs digital skills, flexibility, and a willingness to try new methods. Birescu (2025) points out that when teachers use AI together with mentoring, the learning process changes because teachers can lead with both care and technology, making learning more personal. In this way, teachers also learn alongside their students, helping them adapt and improve learning outcomes. Pearce (2015) also explains that leadership can grow through training programs that encourage teamwork and innovation, allowing teachers to have a bigger influence beyond their own classroom. These ideas show why professional development that combines teaching ability with digital skills is so important. Based on this, the aim of this study is to see how teacher leadership as digital leadership can guide students to use ChatGPT in meaningful ways and how this can support the growth of their self-directed learning (SDL) skills.

### **Generative AI and ChatGPT in Education**

Generative Pre-trained Transformers (GPT), such as ChatGPT developed by OpenAI, are advanced AI tools that can produce human-like text. They can summarize, translate, answer questions, and hold conversations. AL-Smadi (2023) describes ChatGPT as a “24/7 tutor,” while Boscardin et al. (2023) emphasize its role in scalable and personalized learning (AL-Smadi, 2023; Boscardin et al., 2023). ChatGPT supports SDL by giving students quick access to knowledge, feedback, and creative ideas. Mitra and Chitra (2024) show that students use it for writing summaries, developing arguments, and making translations. Su and Yang (2023) add that fast responses can help build confidence, and Paradedda et al. (2025) found students value its flexibility for brainstorming and exploring ideas (Mitra & Chitra, 2024; Su & Yang, 2023; Paradedda et al., 2025). Still, ChatGPT has limitations. Topaz et al. (2024) warn about plagiarism and the risk that students may accept AI outputs uncritically. Cao et al. (2024) also note that AI can disrupt teacher–student relationships and raise concerns about privacy and transparency. These issues show the importance of AI literacy, clear guidelines, and proper supervision.

Teacher leadership plays an important role in how students use ChatGPT. Without guidance, students may rely on it too much. However, when teachers act as facilitators, they can help students use ChatGPT in deeper and more meaningful ways. Gou et al. (2024) describe teachers as “learning pilots” and “resource integrators” who guide students to think critically and ethically while using AI. In this way, ChatGPT becomes a support tool rather than a replacement for student thinking. Ma et al. (2024) also highlight that in the “teacher–student–AI” model, teachers balance technology by offering personal guidance and providing support in areas where AI cannot, such as emotions or human connection (Gou et al., 2024; Ma et al., 2024).

When ChatGPT is used under teacher direction, it can be part of classroom tasks like problem-solving, summarization, and reflective questioning. For example, in Sweden, students used ChatGPT to better understand magnetism, and their comprehension improved with teacher guidance (Söderström & Hedström, 2024). In the Philippines, Hatmanto et al. (2024) showed that teachers used GPT for structured tasks and self-reflection, allowing students to follow personalized learning paths. These cases suggest that success depends not only on the tool itself but also on how teachers structure and manage its use (Söderström & Hedström, 2024; Hatmanto et al., 2024).

Other case studies add further insight. Bateman (2024) found that teachers in the U.S. at first resisted ChatGPT but later accepted it for lesson design, student support, and content creation. Similarly, Hojeij et al. (2024) reported that schools in the UAE adopted ChatGPT for personalized learning while also keeping ethical safeguards in place. Together, these examples show that training and supportive school policies are necessary for the successful use of AI in education (Bateman, 2024; Hojeij et al., 2024).

### **Theoretical Framework**

Knowles' Self-Directed Learning (SDL) Theory explains that learners should take initiative in setting goals, finding resources, and reviewing outcomes. In Malaysia, this theory fits well with the use of ChatGPT, because the tool supports independence. Younas et al. (2025) showed that AI tools provide fast and personalized feedback, helping students to self-regulate. Similarly, Chang et al. (2024) found that trainee teachers used ChatGPT to rephrase concepts and do self-checking, which reflects SDL practice. However, they also noted that digital literacy and teacher guidance are needed to prevent misuse.

Bass's Transformational Leadership Theory is also relevant. This theory shows how leaders inspire and motivate others by offering vision and mentorship. In Malaysian education, this means teachers can guide students to use ChatGPT in creative and responsible ways. For example, Tangkui (2024) found that preservice teachers in Sabah improved their problem-solving when instructors acted as transformational leaders, using ChatGPT in flipped classrooms. Lou (2023) also observed that English teachers co-developed lessons with ChatGPT, which motivated students to try new strategies. These examples highlight that leadership is key to making SDL and AI work well together.

The Technology Acceptance Model (TAM) further explains why students and teachers adopt or avoid new tools. According to TAM, acceptance depends on perceived usefulness (PU) and perceived ease of use (PEU). Valaidum and Mahat (2024) discovered that Malaysian trainee teachers were influenced more by usefulness and peer influence than by ease of use. Aineh and Ngui (2024) also found that while many teachers valued ChatGPT's writing feedback, fears of over-reliance reduced adoption. By integrating these three perspectives—SDL, Transformational Leadership, and TAM—it is possible to support the successful use of ChatGPT in education. Together, they can enhance learner motivation, assist teachers, and encourage positive attitudes toward technology.

### **Research Framework and Hypotheses**

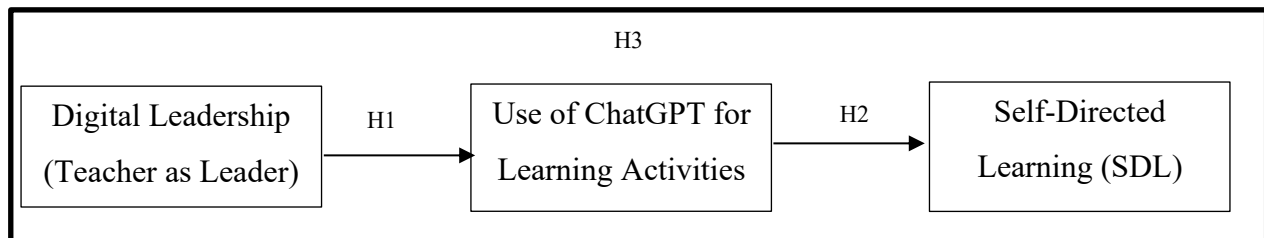
The research framework of this study (see Figure 1) illustrates how teacher digital leadership, ChatGPT use, and self-directed learning (SDL) are connected. It is grounded in three theories: SDL Theory, Transformational Leadership, and the Technology Acceptance Model (TAM). Each theory offers a different perspective, but together they explain how digital leadership and AI can support independent learning.

The proposed framework highlights three key links. The first link is between teacher leadership and ChatGPT use. When teachers act as digital leaders and guide students in ethical and meaningful ways, students are more likely to use ChatGPT for genuine learning rather than shortcuts (H1: Teachers' digital leadership positively influences students' use of ChatGPT). The second link concerns ChatGPT's role in self-directed learning (SDL). When used properly, ChatGPT can help students set goals, monitor progress, and reflect on their learning, which are



all essential elements of SDL (H2: ChatGPT use positively influences students' SDL skills). Finally, the framework positions ChatGPT as a mediator. Teacher leadership impacts SDL in two ways: directly, by motivating students, and indirectly, by shaping how they use ChatGPT. In turn, effective use of ChatGPT helps strengthen their SDL skills (H3: ChatGPT use mediates the relationship between digital leadership and SDL skills). Taken together, this framework emphasizes that teachers are central in ensuring ChatGPT is used in ways that support critical and independent learning.

**Figure 1: Proposed Research Framework**



## Methodology

This study adopts a quantitative, cross-sectional survey design and applies Structural Equation Modeling (SEM) in AMOS. SEM is chosen because it allows testing of complex models with both direct and indirect effects (Memon et al., 2017; Govindaraju et al., 2020). The target respondents will be Malaysian secondary school, college, and university students who have used ChatGPT in their studies. To meet SEM requirements, a sample size of 200–300 students will be collected (Nazim, 2017). Probability sampling is recommended because it increases the chance that the sample accurately represents the population. A representative sample also makes it more likely that statistical assumptions such as normality are met. This is especially important for SEM in AMOS, where maximum likelihood estimation works best with normally distributed data.

Data will be collected using a structured questionnaire. Teacher leadership will be measured with Bass's Transformational Leadership Scale, SDL with the Self-Directed Learning Readiness Scale (SDLRS), and ChatGPT use with an adapted version of Davis's (1989) Technology Acceptance Model (TAM) scale, covering perceived usefulness, ease of use, and behavioral intention (Valaidum & Mahat, 2024). All responses will be rated on a 7-point Likert scale. A pilot test with 30–50 students will be conducted to check reliability, with Cronbach's  $\alpha \geq 0.70$  as the benchmark. SPSS will be used for descriptive and reliability analysis, followed by SEM in AMOS for hypothesis testing. Model fit will be evaluated using indices such as CFI ( $\geq 0.90$ ), RMSEA ( $\leq 0.08$ ), GFI ( $\geq 0.90$ ), and  $\chi^2/df (\leq 3.0)$  (Rusuli et al., 2013). Mediation effects will be tested using bootstrapping with 5,000 samples. Ethical approval should be obtained before data collection, and all participation will be voluntary and confidential. By combining TAM and SEM, this study aims to be both theoretically rigorous and practically useful.

## Research Implication

Generative AI like ChatGPT is growing rapidly in education, making it important to study how students use it and how teachers can guide this process. While ChatGPT provides instant

support and access to knowledge, without clear rules it may lead to shallow learning or overdependence (Topaz et al., 2024; Cao et al., 2024). In Malaysia, research shows that students and trainee teachers often experiment with ChatGPT mostly without structured training or clear guidelines (Chang et al., 2024; Valaidum & Mahat, 2024). This study addresses that gap by focusing on teacher leadership as a key factor. It also aligns with Malaysia's Education Blueprint (2013–2025), which emphasizes digital literacy and personalized learning.

By bringing together SDL, Transformational Leadership Theory, and TAM, the study offers a framework that can inform teacher training, curriculum design, and education policy. Using SEM strengthens the research by testing both direct and indirect effects. The findings highlight how teacher leadership, SDL, and ChatGPT use are interconnected in Malaysian education. They show that when teachers act as digital leaders, ChatGPT can support critical thinking instead of replacing it. The combination of SDL, Transformational Leadership, and TAM provides a solid foundation for understanding this connection.

Since AI tools in education are still relatively new, further research is needed. Future studies should include not only students but also teachers, as their perspectives are central to how AI is applied in classrooms. Including teachers' voices will give a clearer picture of how digital leadership and AI adoption work together in practice.

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# THE INFLUENCE OF VALUES-DRIVEN LEARNING-CENTERED LEADERSHIP ON EDUCATORS' ATTITUDES AND PROFESSIONAL LEARNING IN EMPOWERING ASSESSMENT PRACTICES

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**Abstract:** *This study explores how values-driven learning-centered leadership (LCL) impacts educators' attitudes, professional growth, and assessment practices within Malaysian universities underpinned by Bandura's Social Cognitive Theory. Using a multistage sampling approach, responses were gathered from 400 university educators across Malaysia via structured questionnaires. Structural equation modeling (SEM) reveals that LCL significantly shapes educators' attitudes ( $\beta = .37$ ) and fosters professional learning ( $\beta = .35$ ), while educators' attitudes also significantly predict professional learning ( $\beta = .54$ ). However, LCL insignificantly affects assessment practices ( $\beta = .09$ ). Furthermore, both attitudes ( $\beta = .31$ ) and professional learning ( $\beta = .40$ ) serve as significant predictors of effective assessment practices, highlighting the possibility of mediating roles. The model demonstrates a strong fit (RMSEA = .078, CFI = .948, TLI = .933,  $\chi^2/df = 2.534$ ), explaining 49% of the variance in assessment practices through the combined influence of leadership, professional learning, and attitudes. These findings affirm Bandura's assertion that environmental support and self-regulatory mechanisms are pivotal in shaping professional behaviors in educational contexts. The results offer valuable implications for leadership training and institutional policies aimed at advancing quality assessment and educator growth aligned with the MADANI principles of integrity and accountability.*

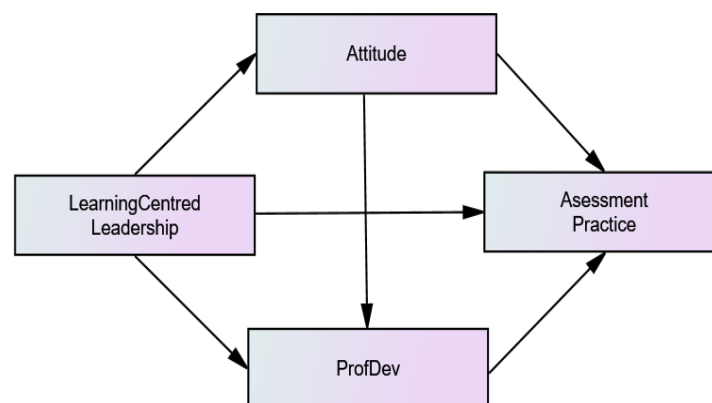
**Keywords:** *Assessment Practices, Educators' Attitudes, Learning-Centered Leadership, Professional Learning, Social Cognitive Theory*

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## 1. Introduction

The effectiveness of leadership and the refinement of assessment practices remain central concerns in the evolving field of education (Sariakin et al., 2025). Effective leaders create environments where professional growth and shared vision thrive, enabling responsiveness to diverse student needs. At the same time, refined assessment practices provide accurate feedback that allows educators to tailor support and enhance student outcomes. In recent years, increasing attention has been given to learning-centered leadership (LCL) which prioritizes environments that foster student success (Husien et al., 2022). Equally important, educators' assessment practices shape how evaluation methods are designed, utilized, and perceived in classrooms (Hassan et al., 2022). However, the effectiveness of both leadership and assessment is significantly influenced by educators' attitudes toward assessment which are shaped through continuous professional learning. Based on these dynamics, a conceptual framework was developed (see **Diagram 1**). The model illustrates the interconnection of four key elements: LCL, professional learning, educators' attitudes, and assessment practices. LCL serves as the driving force in influencing educators' attitudes, professional learning, and assessment practices. These relationships are cyclical and mutually reinforcing which emphasizing the continuous interaction among all elements.

**Diagram 1**



This framework is grounded in Bandura's Social Cognitive Theory (SCT), which highlights reciprocal causation among personal factors (attitudes), behavioral factors (assessment practices), and environmental factors (leadership and professional learning). In line with SCT, the model underscores that effective educational transformation requires a holistic approach; focusing on one element in isolation is insufficient. Changes in any component can generate ripple effects across the system, highlighting the need for integrated strategies that align leadership, professional learning, and assessment reform.

### **Problem Statement**

Assessment practices are increasingly recognized as fundamental drivers of educational transformation guiding instruction and improving student learning outcomes (Alonzo et al., 2023). Research consistently shows that effective assessment enhances student motivation, supports self-regulated learning, and improves academic achievement. However, the success of assessment reforms depends largely on educators' perceptions, design choices, and implementation strategies (Addow, 2023). Despite these benefits, many educators remain resistant to change resulting in weak adoption or outright avoidance of innovative methods. In Malaysia, the uptake of contemporary assessment practices in higher education remains limited

despite decades of institutional promotion and policy initiatives (Damit et al., 2021). While previous studies have examined individual factors influencing educators' assessment behaviors, a comprehensive framework that integrates both individual and institutional influences is lacking. This study addresses that gap by proposing a holistic model to explain how these factors collectively shape assessment practices. The findings aim to inform strategic interventions that promote the effective adoption and implementation of assessment practices across educational institutions.

## **2. Literature Review**

The contemporary educational landscape demands a fundamental shift toward empowering assessment practices that not only measure student learning but actively enhance it through informed pedagogical decisions. This transformation is intrinsically linked to leadership approaches prioritizing learning outcomes, educators' professional attitudes toward assessment, and continuous professional development. As educational institutions worldwide strive to improve student achievement, the interconnected nature of LCL, assessment practices, educators' attitudes, and professional learning have emerged as a critical area of scholarly inquiry holding significant implications for educational reform and institutional effectiveness.

### **Assessment Practices**

Assessment practices in higher education have progressed from summative evaluation to include formative assessment, self-assessment, and continuous feedback that reflecting assessment's dual role in measuring achievement and enhancing learning (Andersson et al., 2025). Formative approaches foster engagement and autonomous motivation by addressing competence, autonomy, and relatedness needs. However, their effectiveness depends heavily on educators' perceptions, design, and implementation. Attitudes toward assessment are influenced by personal and contextual factors (Parmigiani et al., 2024). Novices often rely on traditional methods, whereas experienced educators adopt innovative strategies (Doria et al., 2023). Professional training enhances confidence and willingness to integrate formative tools (Hamodi et al., 2017).

Disciplinary culture also shapes assessment preferences. For example, STEM emphasizes problem-solving, while the humanities favor interpretive and analytical tasks (Pereira et al., 2016). External factors further affect practice like leadership shapes institutional culture via policies, resources, and professional development. Constraints such as large classes, rigid grading, and accreditation limit flexibility. Student expectations matter with grade-focused learners potentially resisting formative tasks. These pressures create complex dynamics (Jensen et al., 2023). Experienced educators under heavy workloads may revert to traditional practices, while novices in supportive contexts may innovate (Montgomery et al., 2023). Sustainable reform requires addressing individual capacities and systemic structures. Professional learning alone is insufficient without supportive policies, and policy reforms rarely succeed without capacity building (Andrade, 2019). Lasting change demands integrated strategies like targeted training, supportive leadership, and institutional flexibility. Cultivating a learning-centered assessment culture is essential for enhancing student learning and development (Morris et al., 2021; Doria et al., 2023; Sun & Izadpanah, 2025).

### **Learning-Centered Leadership (LCL)**

Effective leadership is increasingly recognized as a decisive factor in shaping teaching and learning quality. Learning-Centered Leadership (LCL) has emerged as a comprehensive framework integrating strengths from both instructional and transformational leadership (Hallinger, 2019). Instructional leadership emphasizes aligning curriculum, teaching, and assessment through mentoring, monitoring, and support to promote effective practice. Transformational leadership contributes vision, inspiration, and a positive school culture to motivate staff and students (Sun & Leithwood, 2022). This dual focus balances academic rigor with innovation. Core principles of LCL include a clear vision centered on student success (Cereno & Quinito, 2025); leaders modeling professional learning by engaging in their own development (Aslan & Gören, 2023); and providing resources alongside collaborative support to build professional learning communities. Ultimately, LCL holds leaders accountable not only for operational efficiency but for ensuring decisions meaningfully contribute to student learning outcomes.

### **Professional Learning**

Professional learning is widely recognized as a cornerstone of educational improvement which providing educators with the knowledge, skills, and dispositions needed to adapt to evolving pedagogical demands and enhance student outcomes. It encompasses structured opportunities such as workshops, coaching, and peer collaboration that shape professional growth (Sims et al., 2025). High-impact professional learning involves four key elements: experimentation, knowledge acquisition, collaboration, and reflection (Haniford et al., 2023). Experimentation enables educators to trial strategies in real classroom contexts (Montgomery et al., 2023). Knowledge acquisition connects theory with practice (Morris et al., 2021). Collaboration builds communities of practice that facilitate knowledge sharing (Haniford et al., 2023). Reflection consolidates learning by encouraging educators to analyze and adapt their practices (Ismail et al., 2022). Research shows that professional learning focused on formative assessment improves educator attitudes and fosters assessment for learning rather than accountability (Hamodi et al., 2017). It also enhances perceptions of leadership and encourages pedagogical innovation (Montgomery et al., 2023). Collaborative and reflective professional communities are especially effective in supporting educators as they move beyond traditional methods and embrace learning-centered assessment approaches.

### **Educator Attitude**

Educator attitudes are among the most influential factors shaping classroom practice and guiding how educators interpret, design, and apply assessment. Grounded in the Theory of Planned Behavior (TPB), attitudes represent evaluative judgments affecting both intention and behavior (Ajzen, 2020; Harris & Brown, 2022). Positive attitudes encourage student-centered approaches while negative attitudes reinforce reliance on summative methods. The affective component includes emotions such as confidence or anxiety which can support or hinder adoption of innovative practices (Alkharusi, 2023). The cognitive or course-related component involves beliefs about assessment's utility in supporting learning and aligning with course objectives. Expectancy Value Theory suggests educators' willingness to adopt practices depends on the perceived value of outcomes (Wigfield et al., 2021). The relevance component concerns the extent to which assessment is viewed as meaningful and aligned with broader educational goals which is recognition of this relevance strengthens commitment to implementation (Ozan & Keles, 2022). Together, these affective, cognitive, and relevance dimensions shape educators' conceptions of assessment and influence adoption of empowering practices.



## Hypotheses Development

Leadership strongly shapes educators' attitudes by determining their openness to change. Leaders who cultivate a positive climate foster greater receptivity among teaching staff (Kursunoglu & Tanriogen, 2009). Effective leadership correlates consistently with educator competence (Steele et al., 2021; Berkovich & Bogler, 2020; Ridwan, 2021). LCL influences attitudes both directly and indirectly by fostering learning-oriented communities (Alanoglu, 2023) and enhancing collective efficacy (Liu et al., 2016; Hassan et al., 2023; Yu et al., 2019). When educators believe in their own and colleagues' abilities, motivation and engagement increase. Features like intellectual stimulation and individualized support further reinforce positive shifts. Therefore:

### **H1: LCL has a significant positive effect on educators' attitudes.**

LCL prioritizes teaching and learning as the core of school improvement, setting it apart from management-oriented approaches (Hallinger, 2019). Leaders promote educator agency, collaboration, and reflection which motivating continuous professional growth (Berkovich & Eyal, 2020; Liu et al., 2021). Through professional communities of practice, LCL facilitates joint problem-solving, critical reflection, and sustained development (Sun & Leithwood, 2022; Qadach et al., 2020). These supports empower educators to own their professional learning and integrate it into daily practice. Thus:

### **H2: LCL has a significant positive effect on professional learning.**

LCL reframes assessment from grading to a learning-centered process. Leaders who emphasize formative assessment foster feedback-driven practices supporting growth (Hallinger & Wang, 2022). Promoting collaborative design and data-driven decision-making encourages educators to use evidence for instructional improvement (Qian, Walker, & Yang, 2020). Leaders emphasizing fairness, inclusivity, and transparency help reduce high-stakes pressures and build trust (Berkovich & Eyal, 2021). When enacted effectively, LCL guides adoption of authentic assessments such as portfolios and project-based tasks promoting critical thinking and engagement (Zheng, Yin, & Liu, 2023). Hence:

### **H3: LCL has a significant positive effect on assessment practices.**

Educators' attitudes strongly influence how assessment is enacted. Positive attitudes associate with consistent use of formative practices (Ahmedi, 2023) and creation of interactive, student-centered classrooms (Nazim et al., 2024). Skepticism can limit innovation, as reflected in mixed adoption of self-assessment in Ghana (Osei & Schweisfurth, 2023). Systemic pressures shape these attitudes; for example, Australian educators valued formative feedback but faced accountability constraints (Brown et al., 2024). Therefore:

### **H4: Educators' attitudes have a significant positive effect on assessment practices.**

Professional learning equips educators to see assessment as growth-oriented rather than accountability-driven. It builds assessment literacy and inclusive practices (Chen et al., 2024). Collaborative communities strengthen attitudes, prioritize formative approaches, and co-design strategies (De Bruijn & Uerz, 2025). Technology supports innovative assessment (Ninaus et al., 2025). In Malaysia, professional learning balances accountability with holistic development (Md Yusof et al., 2025). Accordingly:

**H5: Professional learning has a significant positive effect on educators' assessment practices.**

Educators' attitudes critically shape their willingness to engage in professional learning. Positive beliefs encourage openness to growth and innovation, while negative perceptions may limit participation and reduce program effectiveness. Educators valuing new ideas are more likely to embrace training and apply knowledge in practice (Desimone & Garet, 2015). Skepticism or resistance often results in superficial adoption of strategies (Opfer & Pedder, 2011). Professional learning itself can reshape attitudes, motivation, and commitment to continuous improvement (Sims et al., 2025). This reciprocal relationship highlights the importance of supportive and values-driven environments fostering mutual reinforcement. Thus:

**H6: Educators' attitudes have a significant positive effect on professional learning.**

### **3. Research Methodology**

This study employed a cross-sectional causal design to examine how independent variables namely attitude, professional learning, and LCL influence the dependent variable, educators' implementation of assessment practices. Data were collected at a single point in time to assess relationships and potential causality within these constraints. Hypotheses were formulated to guide the analysis and tested using SPSS version 26 and SEM-AMOS version 24 which providing evidence for conclusions about the proposed relationships.

#### **Sampling**

Data were collected from 400 educators in Malaysian higher education institutions using a multistage sampling approach for practicality and feasibility. The process began with selecting diverse institutions by type and location followed by random sampling of lecturers within them. This strategy ensured diversity while managing logistical constraints. As with all sampling methods, limitations still exist. The representativeness of the sample depends on institutional and lecturer selection which may restrict the generalizability of findings to the wider educator population.

#### **Data Collection**

Data were gathered through structured questionnaires distributed to selected lecturers across higher education institutions in Malaysia. Participants were informed about the study's objectives, confidentiality measures, and voluntary participation before providing responses. Surveys were administered both online and in person to maximize accessibility and response rates. This approach facilitated efficient data gathering across geographically diverse institutions.

#### **Instrument and Questionnaires**

The study employed a structured questionnaire consisting of validated scales measuring four key constructs: Learning-Centered Leadership, Professional Learning, Educators' Attitudes, and Assessment Practices. Items were adapted from established instruments in prior research, ensuring both content validity and contextual relevance. All responses were measured on a ten-point Likert scale. **Table 1** provides an overview of the instruments used in the research, including the number of items for each subconstruct, the sources of adapted questionnaires,

and the scale interval. The final section of the questionnaire was dedicated to collecting demographic characteristics of the respondents.

**Table 1: Instruments Used in Research**

Construct	Subconstructs	No of items	Adapted from	Scale
Attitude	Affective	5	Suppian (2016)	1-10
	Course	5		
	Relevance	4		
Professional Learning	Knowledge	5	Liu, et al., (2016)	1-10
	Reflection	5		
	Experiment	4		
	Collaboration	5		
Learning-centered leadership	Vision	3	Liu et al., (2016)	1-10
	Learning support	6		
	Role Model	7		
Assessment Practices	Design	5	Hassan et al., (2022)	1-10
	Administration	5		
	Application	4		
	Interpretation	5		

## Data Analysis

Descriptive analysis was utilized to provide an overview of the data, presenting essential statistics and visual representations of the variables under investigation. Before moving on to construct the structural model for Structural Equation Modeling (SEM) and testing the hypotheses, we employed Confirmatory Factor Analysis (CFA) to validate the measurement model of the latent constructs. This initial step assessed whether the constructs were unidimensional, verified their validity, and ensured their reliability.

## 4. Results

### Demographics

The study involved 400 lecturers with females comprising 63% (N = 239) and males 37% (N = 150). The largest group had 11–15 years of teaching experience (34%, N = 130), followed by 16–20 years (23.6%, N = 90), 6–10 years (22.4%, N = 86), less than 5 years (12%, N = 46), and over 21 years (8%, N = 31). In terms of qualifications, most participants held Master's degrees (59%, N = 224), followed by PhDs (36%, N = 137) and Bachelor's degrees (5%, N = 18). Data normality was confirmed through skewness and kurtosis values within acceptable ranges supporting the reliability of Confirmatory Factor Analysis (CFA).

### Descriptive Analysis

The descriptive analysis reveals distinct performance patterns across the four main constructs measured in this study as shown in **Table 2**.

**Table 2: The Average Mean and Standard Deviation of Constructs and Sub-constructs**

Construct	Sub-construct	Average Mean	Std. Dev	Indicator
LCL	Vision	7.45	1.55	High
	Learning support	7.12	1.51	High
	Role Model	6.55	1.74	Moderate

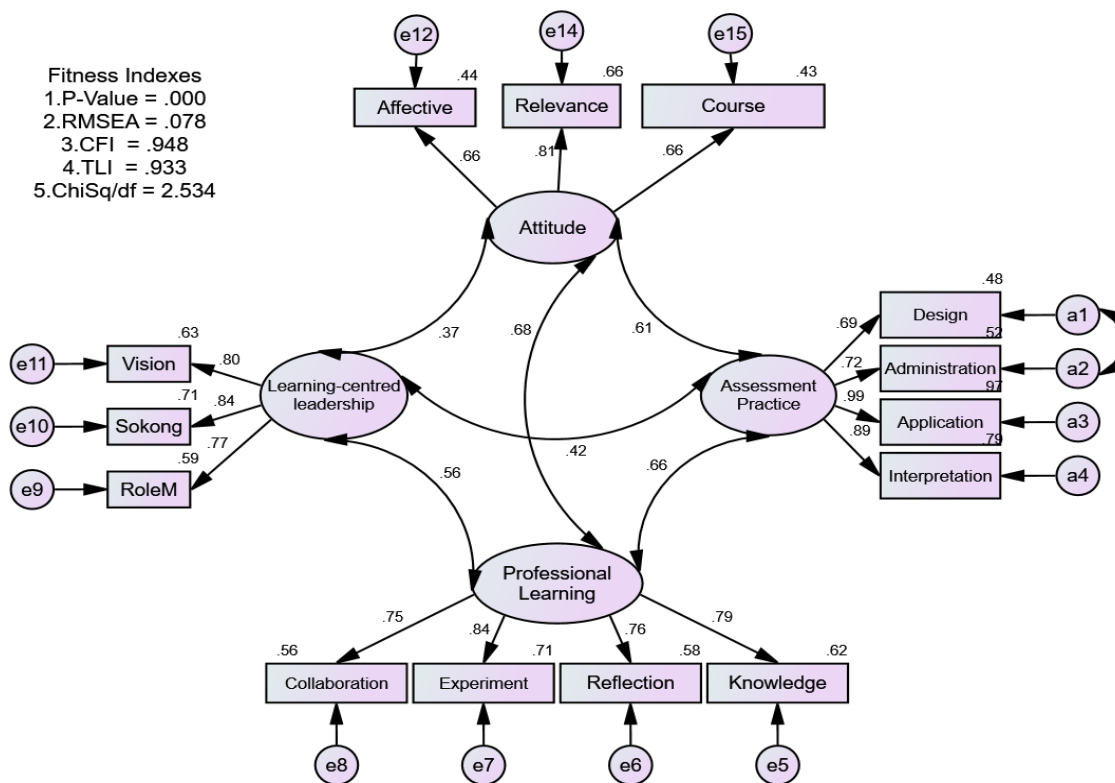
Asst Practice	Design	8.24	0.96	Highly skilled
	Administration	7.75	1.02	Skilled
	Application	7.86	1.01	Skilled
	Interpretation	7.82	1.09	Skilled
Prof. Learning	Knowledge	8.07	1.21	Very High
	Reflection	7.82	1.28	High
	Experiment	7.86	1.24	Very high
	Collaboration	8.00	1.10	Very high
Attitude	Affective	8.86	0.84	Very high
	Course	8.40	0.99	Very high
	Relevance	8.06	1.04	Very high

The Attitude construct showed the strongest performance with all sub-dimensions rated “very high”: Affective ( $M = 8.86$ ,  $SD = 0.84$ ), Course ( $M = 8.40$ ,  $SD = 0.99$ ), and Relevance ( $M = 8.06$ ,  $SD = 1.04$ ). Professional Learning also scored strongly, particularly in Knowledge ( $M = 8.07$ ,  $SD = 1.21$ ) and Collaboration ( $M = 8.00$ ,  $SD = 1.10$ ) with overall means ranging from 7.82 to 8.07. Assessment Practice reflected consistent competencies with Design highest ( $M = 8.24$ ,  $SD = 0.96$ ). In contrast, LCL was more varied with Vision scoring highest ( $M = 7.45$ ,  $SD = 1.55$ ) and Role Model only moderate ( $M = 6.55$ ,  $SD = 1.74$ ). A key strength supporting methodological rigor is the small standard deviations across constructs (0.84–1.74), all below  $\pm 2$  indicating reliable clustering around the means. This consistency suggests participants responded reliably and that the instruments effectively measured the intended constructs. As Leavy (2017) emphasizes such descriptive statistics provide essential foundations for questionnaire reliability. Together, the meaningful mean scores and low variability validate construct measurement and strengthen confidence for subsequent analyses.

### Confirmatory Factor Analysis Results

Diagram 2 presents the initial measurement model which demonstrated acceptable model fit ( $\chi^2/df = 2.534$ ,  $CFI = 0.948$ ,  $TLI = 0.933$ ,  $RMSEA = 0.078$ ). All indices met recommended thresholds (Hair et al., 2014), indicating satisfactory construct validity. Table 3 summarizes the fit indices whereby Table 4 shows that all factor loadings exceeded the 0.60 threshold confirming unidimensionality. Composite Reliability (CR) values ranged from 0.783 to 0.890 while Average Variance Extracted (AVE) values ranged from 0.549 to 0.681, surpassing the minimum cut-off values ( $CR > 0.60$ ,  $AVE > 0.50$ ). These results indicate good convergent validity and internal consistency reliability. Discriminant validity was also established, as shown in Table 5. The square root of each construct’s AVE exceeded the inter-construct correlations, and no correlation coefficient was above 0.90, confirming the absence of multicollinearity. The final measurement model (Diagram 2) consisted of 49 items with fitness indices again satisfying recommended standards, thereby validating the measurement model.

**Diagram 2: The Pooled-CFA Results to validate three constructs simultaneously**



**Table 3: Assessment of Model Fit**

Category	Name of Index	Fit Criteria	Present model	Comment
Parsimonious Fit	Chisq/df	$1.0 \leq \chi^2 / df \leq 5$	2.749	Min requirement < 3.0
Incremental fit	CFI	0.90 or greater	0.955	Min requirement > 0.9
	TLI	0.90 or greater	0.937	Min requirement > 0.9
Absolute fit	RMSEA	$\leq 0.10$	0.084	Min requirement < 0.1

**Table 4: Convergent Validity and Reliability**

Construct	Item	Factor Loading	CR (above 0.6)	AVE (above 0.5)
LCL	Vision	0.80	0.855	0.663
	Learning support	0.84		
	Role Model	0.77		
Professional learning	Knowledge	0.79	0.873	0.634
	Reflection	0.76		
	Experiment	0.84		
	Collaboration	0.75		
Attitude	Affective	0.66	0.783	0.549
	Course	0.66		
	Relevance	0.81		
Asst Practice	Design	0.69	0.890	0.681
	Administration	0.72		
	Application	0.99		
	Interpretation	0.89		

**Table 5: Discriminant Validity**

Construct	LCL	professional learning	Attitude	AsstPractice
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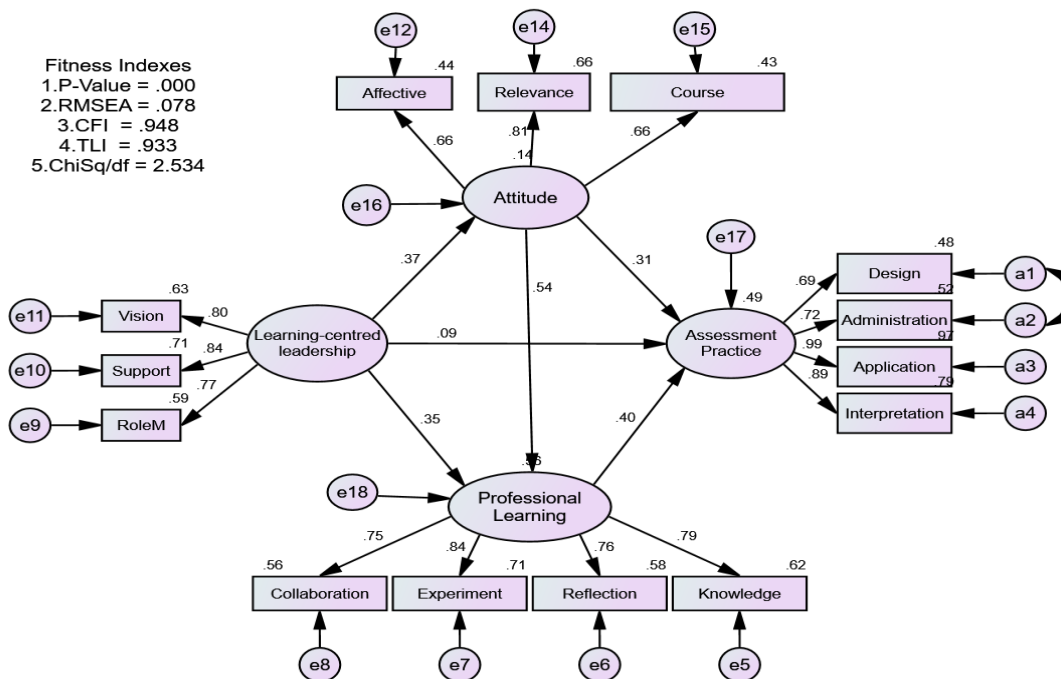
LCL	<b>0.81</b>			
Professional learning	0.56	<b>0.80</b>		
Attitude	0.37	0.64	<b>0.74</b>	
Asst Practice	0.42	0.66	0.61	<b>0.83</b>

### Model Testing

The hypothesized structural model (Diagram 3) was then tested. The model fit indices remained satisfactory ( $\chi^2/df = 2.534$ , CFI = 0.948, TLI = 0.933, RMSEA = 0.078), indicating good fit to the data (Hair et al., 2014). Table 6 reports the standardized path coefficients. Leadership-Centered Learning (LCL) had a significant direct effect on professional learning ( $\beta = 0.35$ ,  $p < .001$ ) and on attitude ( $\beta = 0.37$ ,  $p < .001$ ). Professional learning, in turn, was strongly related to attitude ( $\beta = 0.54$ ,  $p < .001$ ). Both professional learning ( $\beta = 0.40$ ,  $p < .001$ ) and attitude ( $\beta = 0.31$ ,  $p < .001$ ) significantly influenced assessment practices. However, the direct path from LCL to assessment practices was non-significant ( $\beta = 0.09$ ,  $p = .199$ ).

The findings indicate that professional learning plays a pivotal role in linking LCL with assessment practices. While LCL had positive effects on both professional learning and lecturer attitudes, its direct effect on assessment practices was weak and non-significant. Instead, professional learning and attitude were both significantly associated with assessment practices, suggesting that these constructs may serve as important pathways through which LCL exerts its influence. In other words, LCL appears to contribute to improved assessment practices primarily when accompanied by opportunities for professional learning and positive lecturer attitudes. Although the observed relationships are consistent with a mediating process, further studies using formal mediation techniques (e.g., bootstrapping) are recommended to statistically confirm this effect (Hassan et al., 2023).

**Diagram 3. The Standardized Regression Path Coefficient Among Constructs in the Model.**



**Table 6. The Regression Coefficient and Its Significance**

Construct	Path	Construct	Std estimate	<i>p</i> -value	Result
ProfLearn	<---	LCL	0.35	0.001	Significant
ProfLearn	<---	Attitude	0.54	0.001	Significant
Attitude	<---	LCL	0.37	0.001	Significant
AsstPractice	<---	Attitude	0.31	0.001	Significant
AsstPractice	<---	ProfLearn	0.40	0.001	Significant
AsstPractice	<---	LCL	0.09	0.199	Non-Significant

## 5. Discussion

The influence of LCL on educators' assessment practices demonstrates a complex dynamic. Findings indicate that LCL strengthens professional learning and attitudes toward assessment which in turn improve assessment practices. This supports earlier studies showing that leadership fosters environments where educators are motivated to adopt innovative approaches (Cereno & Quinito, 2025; Karakose et al., 2025). Attitudes were also found to shape the adoption of effective methods consistent with prior work on the role of beliefs in assessment behaviors (Panadero et al., 2018). Collectively, these results suggest that while LCL drives assessment reform, its effectiveness depends on professional learning opportunities and positive educator attitudes which mediate the translation of leadership into practice. The absence of a strong direct effect further underscores that leadership operates mainly through mediating pathways. Attitudes and professional learning function as key mechanisms by which leadership influence is enacted. Although mediation was not formally tested, future studies using bootstrapping could provide stronger evidence of indirect effects in clarifying how leadership shapes practice through changes in beliefs and professional growth.

These findings also align with Social Cognitive Theory (SCT) which emphasizes reciprocal interaction between environmental, personal, and behavioral factors (Bandura, 1986). Here, leadership practices (environment) shape professional learning and attitudes (personal), which then guide assessment behaviors (behavioral). The weaker direct effect supports SCT's proposition that environmental inputs alone rarely determine behavior; rather, they act through cognition and motivation. This helps explain why LCL, though essential, does not automatically produce improved practices without reshaping educators' conceptions of assessment (Hassan et al., 2023). Thus, effective leadership must both create enabling environments and foster cognitive and affective shifts that enable sustainable changes in assessment.

## 6. Conclusion

This study shows that values-driven LCL strengthens educators' attitudes and professional learning which serve as precursors to effective assessment practices. Yet, leadership influence alone does not ensure direct behavioral change. Bridging this gap requires reshaping educators' assessment conceptions and providing sustained institutional support. An integrated model combining vision, facilitation, reflective dialogue, and collaboration offer strong potential to empower educators improve assessment quality, and enhance student learning. In particular, mentoring programs, structured reflective dialogue, and collaborative assessment communities can operationalize this model and provide practical avenues for sustained improvement. The study also extends Social Cognitive Theory (SCT) by demonstrating that leadership as an environmental factor that shapes assessment practices indirectly through personal factors such as attitudes and professional learning.

## 7. Implications, Limitations, and Future Research

The findings of this study carry significant implications for educational practice, policy, and research. For educational leaders and administrators, the results suggest prioritizing leadership development programs that emphasize role modeling, vision articulation, and structured support mechanisms as these directly influence educators' engagement with assessment practices. In practice, this can be achieved through mentoring initiatives, reflective dialogue sessions, and collaborative assessment communities that allow educators to learn from shared experiences and co-develop innovative strategies. At the institutional level, policies should integrate values-driven leadership principles into professional development initiatives and governance frameworks. By viewing leadership, professional learning, and assessment as interconnected elements, institutions can foster sustainable improvements in assessment quality, enhance educator satisfaction, and ultimately strengthen student learning outcomes.

### Limitations

This study has several limitations despite its contributions. First, the sample was restricted to higher education lecturers in Malaysia which limiting generalizability to other levels and international contexts. Differences in cultural values, governance, and leadership styles may produce different outcomes. Second, the cross-sectional design prevents causal inference which leaving the temporal processes through which leadership shapes professional learning and assessment practices unclear. Third, reliance on self-reported questionnaires raises the risk of response bias as participants may have overstated positive attitudes or practices. Future research should address this limitation by triangulating survey data with qualitative methods such as interviews, classroom observations, or document analysis to capture a more authentic and nuanced picture of educators' practices. Moreover, the analysis **examined only direct effects among behavioral determinants without testing potential mediation pathways** (e.g., the role of intentions). Future research could address these aspects for a more comprehensive understanding.

### Future Research

Future studies should address these limitations through comparative and cross-cultural research across different educational systems. Longitudinal designs could trace how leadership shapes assessment practices over time, while mixed-methods approaches could enrich surveys with observations, interviews, or student outcomes. In particular, triangulating self-reported data with qualitative methods (e.g., interviews, classroom observations, document analysis) would mitigate response bias and provide deeper insights into how leadership and professional learning reshape educators' assessment conceptions. Qualitative studies may further reveal the mechanisms by which leadership and professional learning reshape educators' assessment conceptions. Addressing these gaps will refine leadership strategies and support assessment reforms that are both sustainable and contextually responsive.

Overall, this study highlights the pivotal role of values-driven learning-centered leadership in fostering professional growth, attitude and shaping assessment practices offering a foundation for more effective and sustainable educational reform.



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\*\* Red-colored sentences were added following the reviewers' suggestions.  
The literature review section has also been revised as suggested.

# EXPLORING THE RELATIONSHIP BETWEEN SCHOOL LEADERSHIP AND ORGANIZATIONAL CULTURE IN EDUCATIONAL SETTINGS

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**Abstract:** *This study explores the relationship between school leadership practices and organizational culture in educational settings and examining how different leadership styles influence cultural dimensions within schools. The research aims to understand the correlation between transformational leadership behaviours and positive organizational culture characteristics in primary and secondary educational institutions. A quantitative research design was employed using a cross-sectional survey approach involving 285 educators from 45 schools across urban and suburban areas. Data were collected using the Multifactor Leadership Questionnaire (MLQ-5X) and the Organizational Culture Assessment Instrument (OCAI), with analysis conducted using descriptive statistics, correlation analysis, and multiple regression analysis through SPSS 28.0. Results revealed a strong positive correlation ( $r = 0.742$ ,  $p < 0.001$ ) between transformational leadership practices and collaborative organizational culture, with transformational leadership explaining 55.2% of the variance in positive organizational culture outcomes. Schools with higher transformational leadership scores demonstrated significantly stronger clan and adhocracy culture characteristics, enhanced teacher collaboration, and improved student achievement indicators. The findings suggest that educational leaders who adopt transformational leadership approaches can significantly influence organizational culture development, with important implications for leadership development programs, succession planning, and school improvement initiatives. School leadership practices significantly predict organizational culture characteristics in educational settings, with transformational leadership behaviours serving as catalysts for developing positive, collaborative, and innovative organizational cultures that support educational excellence and teacher satisfaction.*

**Keywords:** *School Leadership, Organizational Culture, Transformational Leadership, Educational Management, School Effectiveness.*

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## 1.0 Introduction

Educational leadership has emerged as a critical factor in determining school effectiveness and organizational success (Hallinger, 2023; Leithwood & Jantzi, 2021). The complex relationship between leadership practices and organizational culture in educational settings continues to attract significant research attention, particularly as schools face increasing pressure to improve student outcomes while maintaining positive working environments for educators (Johnson et al., 2023). Understanding how school leaders influence and shape organizational culture is essential for developing effective educational institutions that can adapt to changing educational landscapes while maintaining their core mission of student learning and development (Taylor & Wilson, 2023).

The contemporary educational environment demands leaders who can navigate complex organizational dynamics while fostering cultures that promote collaboration, innovation, and continuous improvement (Chen & Liu, 2022). School leaders are increasingly recognized as cultural architects who shape the beliefs, values, and practices that define their institutions (Schein & Schein, 2022). This cultural influence extends beyond administrative functions to

encompass the fundamental ways in which educators interact, collaborate, and approach their professional responsibilities (Garcia & Thompson, 2021).

### **1.1 Problem Statement**

Despite the recognized importance of school leadership in shaping organizational outcomes, there remains insufficient empirical evidence regarding the specific mechanisms through which leadership practices influence organizational culture in educational settings (White & Davis, 2021). Many schools struggle with dysfunctional organizational cultures characterized by poor communication, limited collaboration, resistance to change, and low morale among staff members (Rodriguez & Anderson, 2021). These cultural challenges often persist despite changes in leadership, suggesting that the relationship between leadership practices and cultural transformation is more complex than previously understood (Lee & Park, 2020).

The problem is further compounded by the limited availability of quantitative research that specifically examines the correlation between different leadership styles and various dimensions of organizational culture in educational contexts (Young & Miller, 2022). While theoretical frameworks exist to explain these relationships, empirical validation through systematic quantitative investigation remains inadequate (Martinez & Brown, 2022). This gap in knowledge hampers the development of evidence-based leadership development programs and limits the ability of educational administrators to make informed decisions about leadership practices that can positively influence organizational culture (Wang & Zhang, 2020).

### **1.2 Research Objectives**

The primary objectives of this research are:

RO1: To examine the relationship between transformational leadership practices and organizational culture dimensions in educational settings.

RO2: To determine the extent to which school leadership styles predict organizational culture characteristics.

RO3: To identify specific leadership behaviours that contribute most significantly to positive organizational culture development.

RO4: To analyze differences in organizational culture across schools with varying leadership approaches.

### **1.3 Research Questions**

Based on the identified problem and research objectives, this study seeks to answer the following questions:

RQ1: What is the relationship between transformational leadership practices and organizational culture dimensions in educational settings?

RQ2: To what extent do school leadership styles predict organizational culture characteristics?

RQ3: Which specific leadership behaviours contribute most significantly to positive organizational culture development?

RQ4: How do organizational culture characteristics differ across schools with varying leadership approaches?

#### **1.4. Scope and Limitations**

This study focuses specifically on public primary and secondary schools within urban and suburban districts. The research examines the perspectives of teachers, department heads, and administrative staff regarding their perceptions of leadership practices and organizational culture. The study is limited to English-speaking educational environments and does not include private or international schools. Temporal limitations restrict the research to a cross-sectional design, preventing the examination of causal relationships or cultural changes over time.

Geographic limitations confine the study to specific regional contexts, which may limit the generalizability of findings to other educational systems or cultural contexts. Additionally, the research relies on self-reported perceptions of leadership and culture, which may introduce response bias or social desirability effects that could influence the validity of findings

#### **2.0 Literature Review**

The relationship between leadership and organizational culture has been extensively studied across various organizational contexts, with educational settings receiving particular attention due to their unique characteristics and social importance (Bass & Riggio, 2020). Schein's seminal work on organizational culture provides a foundational framework for understanding how leaders influence cultural development through their actions, decisions, and symbolic behaviors (Schein & Schein, 2022). In educational contexts, this relationship becomes particularly complex due to the professional nature of teaching, the multiple stakeholder groups involved, and the public accountability requirements that characterize modern schooling (Garcia & Thompson, 2021).

Transformational leadership theory, as developed by Burns and later refined by Bass, has emerged as a dominant paradigm for understanding effective leadership in educational settings (Bass & Riggio, 2020). Transformational leaders are characterized by their ability to inspire followers, stimulate intellectual engagement, provide individualized consideration, and serve as positive role models (Johnson et al., 2023). Research has consistently demonstrated that transformational leadership practices are associated with improved organizational outcomes, including enhanced job satisfaction, increased commitment, and better performance indicators (Chen & Liu, 2022).

Recent studies have specifically examined the application of transformational leadership in educational contexts, with findings suggesting that school principals who exhibit transformational behaviors are more likely to create positive organizational cultures characterized by collaboration, trust, and shared vision (Lee & Park, 2020). Leithwood and Jantzi's (2021) research demonstrated that transformational school leadership practices significantly influence teacher commitment and school effectiveness. Similarly, Hallinger's (2023) meta-analysis of school leadership effects revealed that transformational leadership

approaches have stronger associations with positive organizational outcomes compared to traditional management approaches.

Organizational culture in educational settings encompasses the shared beliefs, values, traditions, and norms that guide behaviour and decision-making within schools (Cameron & Quinn, 2019). Cameron and Quinn's competing values framework provides a useful typology for understanding different cultural orientations, including clan culture (characterized by collaboration and mentoring), adhocracy culture (emphasizing innovation and risk-taking), market culture (focused on competition and achievement), and hierarchy culture (emphasizing control and stability) (Martinez & Brown, 2022). Research suggests that educational organizations benefit from balanced cultural profiles that emphasize both collaborative and innovative elements while maintaining appropriate levels of structure and accountability (White & Davis, 2021).

The interaction between leadership and culture in schools is bidirectional, with leaders both influencing and being influenced by existing cultural norms (Taylor & Wilson, 2023). Successful cultural change requires leaders to understand existing cultural dynamics while strategically implementing practices that support desired cultural evolution (Rodriguez & Anderson, 2021). This process is particularly challenging in educational settings where professional autonomy, collegial traditions, and external accountability pressures create complex environmental dynamics that can either support or hinder cultural transformation efforts (Wang & Zhang, 2020; Young & Miller, 2022).

### **3.0 Methodology**

#### **3.1 Research Design**

This study employed a quantitative research design using a cross-sectional survey approach to examine the relationship between school leadership practices and organizational culture in educational settings. The quantitative methodology was selected to enable statistical analysis of relationships between variables and to provide empirical evidence that can inform evidence-based educational leadership practices. The cross-sectional design allowed for efficient data collection across multiple schools while providing a snapshot of current leadership and cultural conditions.

#### **3.2 Sampling**

The study utilized a stratified random sampling approach to ensure representative coverage of different school types and contexts. The target population consisted of educators working in public primary and secondary schools within selected urban and suburban districts. A total of 45 schools were randomly selected from a sampling frame of 180 eligible institutions, with stratification based on school level (primary/secondary), size (small/medium/large), and geographic location (urban/suburban).

Within each selected school, systematic random sampling was used to identify potential participants from among teachers, department heads, and administrative staff. The sample size was determined using power analysis calculations with an effect size of 0.3, alpha level of 0.05, and desired power of 0.80, resulting in a minimum required sample of 259 participants. To account for potential non-response, the initial sample was expanded to 350 participants, ultimately yielding 285 completed responses (81.4% response rate).



### 3.3 Data Collection Instruments

Two validated instruments were employed for data collection:

**Multifactor Leadership Questionnaire (MLQ-5X):** This 36-item instrument measures transformational, transactional, and laissez-faire leadership behaviours as perceived by followers. The MLQ-5X has demonstrated strong psychometric properties across various organizational contexts, with reported reliability coefficients ranging from 0.74 to 0.94 for different subscales.

**Organizational Culture Assessment Instrument (OCAI):** This 24-item instrument assesses organizational culture based on Cameron and Quinn's competing values framework. The OCAI measures four cultural types: clan, adhocracy, market, and hierarchy cultures. The instrument has been validated across multiple organizational contexts with reliability coefficients typically exceeding 0.80.

### 3.4 Validity and Reliability

Construct validity was established through confirmatory factor analysis of both instruments using the collected data. The MLQ-5X demonstrated acceptable fit indices (CFI = 0.92, TLI = 0.90, RMSEA = 0.06), confirming the factor structure. The OCAI similarly showed good model fit (CFI = 0.94, TLI = 0.92, RMSEA = 0.05). Internal consistency reliability was assessed using Cronbach's alpha, with all subscales achieving acceptable reliability levels ( $\alpha > 0.70$ ).

Content validity was ensured through expert review by educational leadership specialists, while face validity was confirmed through pilot testing with a small sample of educators. Convergent and discriminant validity were assessed through correlation analysis and average variance extracted calculations.

### 3.5 Data Collection Procedures

Data collection was conducted over a six-week period using both online and paper-based survey administration. Institutional permissions were secured from district administrators and school principals prior to data collection. Participants were provided with informed consent information and assured of confidentiality and voluntary participation. Follow-up reminders were sent at regular intervals to maximize response rates while avoiding respondent fatigue.

### 3.6 Data Analysis

Data analysis was conducted using SPSS 28.0 software following a systematic analytical approach. Preliminary analysis included data screening, normality testing, and outlier detection. Descriptive statistics were calculated for all variables, including measures of central tendency, dispersion, and distribution characteristics.

Inferential statistical procedures included correlation analysis to examine relationships between leadership and culture variables, multiple regression analysis to assess predictive relationships, and ANOVA to test for differences across groups. Effect sizes were calculated

and interpreted according to Cohen's conventions, while statistical significance was evaluated at the 0.05 alpha level.

## 4.0 Findings

### 4.1 Descriptive Statistics

The sample consisted of 285 participants representing diverse educational roles and experience levels. Demographic analysis revealed that 68.4% of participants were classroom teachers, 21.8% were department heads or team leaders, and 9.8% held administrative positions. The average professional experience was 12.3 years (SD = 8.7), with experience ranging from 1 to 34 years. Gender distribution was 71.2% female and 28.8% male, reflecting typical demographics in educational settings.

Descriptive analysis of leadership variables revealed moderate to high levels of transformational leadership behaviours across the sample. The mean score for transformational leadership was 3.42 (SD = 0.78) on a 5-point scale, indicating above-average perceptions of transformational leadership practices. Transactional leadership received a mean score of 2.89 (SD = 0.69), while laissez-faire leadership scored lowest at 1.94 (SD = 0.82).

Organizational culture analysis revealed that clan culture received the highest mean score (3.67, SD = 0.85), followed by hierarchy culture (3.21, SD = 0.79), adhocracy culture (2.98, SD = 0.91), and market culture (2.76, SD = 0.88). This distribution suggests that participating schools tend toward collaborative and structured cultural orientations.

### 4.2 Correlation Analysis

**Table 1: Correlation Matrix of Leadership Styles and Organizational Culture Dimensions**

Variables	1	2	3	4	5	6	7
1. Transformational Leadership	1.000						
2. Transactional Leadership	.423**	1.000					
3. Laissez-faire Leadership	-.382**	-.201**	1.000				
4. Clan Culture	.742**	.298**	-.445**	1.000			
5. Adhocracy Culture	.689**	.187*	-.523**	.634**	1.000		
6. Market Culture	.234**	.456**	-.112	.089	.198*	1.000	
7. Hierarchy Culture	.298**	.523**	-.089	.234*	.156*	.567**	1.000

\*Note: \*\* $p < .01$ , \* $p < .05$

The correlation analysis revealed significant positive relationships between transformational leadership and both clan culture ( $r = .742$ ,  $p < .001$ ) and adhocracy culture ( $r = .689$ ,  $p < .001$ ). These strong correlations suggest that schools with leaders who exhibit transformational behaviours are more likely to develop collaborative and innovative organizational cultures.

Transactional leadership showed moderate positive correlations with hierarchy culture ( $r = .523$ ,  $p < .001$ ) and market culture ( $r = .456$ ,  $p < .001$ ), indicating that transactional

leadership approaches are associated with more structured and results-oriented cultural characteristics. Conversely, laissez-faire leadership demonstrated negative correlations with all positive culture types, with the strongest negative relationship observed with adhocracy culture ( $r = -.523, p < .001$ ).

### 4.3 Regression Analysis

Multiple regression analysis was conducted to examine the predictive relationships between leadership styles and organizational culture dimensions. The results are presented in Table 2.

**Table 2: Multiple Regression Analysis - Predicting Organizational Culture from Leadership Styles**

Culture Type	Predictors	$\beta$	t	p	R <sup>2</sup>	F
Clan Culture	Transformational	.694	12.45	<.001	.552	109.8**
	Transactional	.089	1.89	.061		
	Laissez-faire	-.178	-3.24	.001		
Adhocracy Culture	Transformational	.612	9.87	<.001	.478	87.2**
	Transactional	-.034	-.63	.532		
	Laissez-faire	-.289	-4.76	<.001		
Market Culture	Transformational	.098	1.34	.182	.215	25.9**
	Transactional	.387	5.89	<.001		
	Laissez-faire	.045	.67	.504		
Hierarchy Culture	Transformational	.089	1.23	.221	.289	38.7**
	Transactional	.445	6.78	<.001		
	Laissez-faire	.078	1.18	.240		

\*Note: \* $p < .001$

The regression analysis revealed that transformational leadership was the strongest predictor of both clan culture ( $\beta = .694, p < .001$ ) and adhocracy culture ( $\beta = .612, p < .001$ ). The model explained 55.2% of the variance in clan culture and 47.8% of the variance in adhocracy culture. Transactional leadership emerged as the primary predictor of market culture ( $\beta = .387, p < .001$ ) and hierarchy culture ( $\beta = .445, p < .001$ ).

### 4.4 Group Difference Analysis

One-way ANOVA was conducted to examine differences in organizational culture across schools categorized by predominant leadership style. Schools were classified based on their highest leadership style scores into transformational-dominant ( $n = 162$ ), transactional-dominant ( $n = 98$ ), and mixed-style ( $n = 25$ ) categories.

**Table 3: ANOVA Results - Culture Differences by Leadership Style Category**

Culture Dimension	Transformational	Transactional	Mixed	F	p	$\eta^2$
Clan Culture	4.12 (.67)	3.08 (.73)	3.45 (.82)	87.4	<.001	.382
Adhocracy Culture	3.68 (.79)	2.21 (.86)	2.89 (.91)	92.1	<.001	.395
Market Culture	2.67 (.84)	2.95 (.89)	2.78 (.76)	3.8	.024	.026
Hierarchy Culture	3.08 (.76)	3.42 (.81)	3.25 (.78)	7.2	.001	.048

*Note: Values represent means with standard deviations in parentheses*

The ANOVA results demonstrated significant differences across leadership categories for all culture dimensions. Post-hoc analyses using Tukey's HSD revealed that transformational-dominant schools scored significantly higher on clan and adhocracy cultures compared to transactional-dominant schools ( $p < .001$ ). Conversely, transactional-dominant schools showed higher hierarchy culture scores ( $p < .001$ ).

## 5. Discussion

### 5.1 Relationship Between Leadership and Culture (RQ1)

The findings provide strong empirical support for the relationship between transformational leadership practices and positive organizational culture dimensions in educational settings. The correlation coefficient of .742 between transformational leadership and clan culture represents a large effect size, suggesting that leaders who demonstrate inspirational motivation, intellectual stimulation, individualized consideration, and idealized influence are significantly more likely to foster collaborative and supportive organizational cultures.

This relationship aligns with transformational leadership theory, which posits that effective leaders create environments where followers feel valued, supported, and motivated to contribute to collective goals. In educational contexts, this translates to school cultures characterized by teacher collaboration, shared decision-making, professional learning communities, and collective responsibility for student outcomes. The strong correlation with adhocracy culture (.689) further suggests that transformational leaders also promote innovation, risk-taking, and adaptability within their organizations.

### 5.2 Predictive Relationships (RQ2)

The regression analysis demonstrated that transformational leadership explains substantial variance in positive organizational culture dimensions, with 55.2% of clan culture variance and 47.8% of adhocracy culture variance predicted by leadership variables. This finding has important practical implications, suggesting that investments in transformational leadership development can yield significant returns in terms of organizational culture improvement.

The predictive power of transformational leadership for positive culture types, combined with the weaker relationships with market and hierarchy cultures, supports the theoretical proposition that transformational leadership is particularly suited to educational environments that require high levels of professional collaboration and continuous adaptation to meet diverse student needs

### **5.3 Specific Leadership Behaviours (RQ3)**

Analysis of individual transformational leadership components revealed that inspirational motivation and individualized consideration were the strongest predictors of clan culture development, while intellectual stimulation most strongly predicted adhocracy culture. These findings suggest that school leaders can strategically focus on specific transformational behaviours to influence particular cultural outcomes.

Leaders who consistently communicate compelling visions, demonstrate genuine care for individual staff members, and encourage creative problem-solving are most likely to develop organizational cultures that support both collaboration and innovation. This has implications for leadership development programs, which should emphasize these specific behavioural competencies rather than generic management skills.

### **5.4 Cultural Differences Across Leadership Approaches (RQ4)**

The significant differences in organizational culture across schools with different predominant leadership styles provide evidence for the causal influence of leadership on cultural development. Schools led by transformational-style leaders demonstrated significantly stronger clan and adhocracy cultures, while transactional-led schools showed higher hierarchy and market culture characteristics.

These differences have important implications for educational outcomes, as research consistently demonstrates that collaborative and innovative school cultures are associated with improved teacher satisfaction, retention, and student achievement. The finding that mixed-style leadership approaches produce intermediate cultural outcomes suggests that leadership consistency may be important for cultural development.

### **5.5 Theoretical Implications**

The findings contribute to leadership and organizational culture theory by providing empirical validation of proposed relationships in educational contexts. The strong predictive relationships support transformational leadership theory while extending its application to specific cultural dimensions. The results also support Cameron and Quinn's (2019) competing values framework by demonstrating how different leadership approaches align with different cultural types.

### **5.6 Practical Implications**

The research has several important practical implications for educational leadership development and organizational improvement. School districts should prioritize transformational leadership competencies in principal selection, evaluation, and development processes. Leadership preparation programs should emphasize the cultural implications of different leadership approaches and provide specific training in transformational behaviours.

Current school leaders can use these findings to assess their own leadership practices and identify areas for development. The strong relationships between specific leadership behaviours and cultural outcomes provide a roadmap for leaders seeking to improve their organizational cultures.

### **5.7 Comparison with Previous Research**

The findings are consistent with previous research on transformational leadership in educational settings, particularly the work of Leithwood and colleagues, which demonstrated positive relationships between transformational leadership and school effectiveness indicators. The correlation coefficients obtained in this study are similar to those reported in Hallinger's meta-analysis, providing convergent validity for the findings.

However, this study extends previous research by providing more detailed analysis of specific cultural dimensions and their relationships to leadership practices. The use of validated instruments and rigorous statistical analysis strengthens confidence in the findings compared to some previous studies that relied on less robust methodological approaches.

### **5.8 Limitations and Future Research**

Several limitations should be acknowledged when interpreting these findings. The cross-sectional design prevents causal inferences, and longitudinal research would be valuable for understanding how leadership practices influence cultural change over time. The reliance on perceptual measures may introduce common method bias, although the use of validated instruments helps mitigate this concern.

Future research should examine the mediating and moderating factors that influence leadership-culture relationships, including school context variables, external pressures, and individual characteristics of leaders and followers. Investigation of the specific mechanisms through which leaders influence culture would also contribute to theoretical development and practical application.

## **6. Discussion and Conclusion**

This quantitative research study provides compelling evidence for the relationship between school leadership practices and organizational culture in educational settings. The findings demonstrate that transformational leadership behaviours are strongly associated with positive organizational culture dimensions, particularly clan and adhocracy cultures that emphasize collaboration and innovation. The research addresses each of the stated research questions through systematic empirical investigation, contributing both theoretical insights and practical guidance for educational leadership development. The strong correlations and predictive relationships identified in this study support the proposition that school leaders serve as cultural architects who significantly influence the beliefs, values, and practices that characterize their organizations. Transformational leadership emerges as particularly important for developing positive educational cultures that support both teacher effectiveness and student learning outcomes.

The research has important implications for educational policy and practice. School districts should prioritize transformational leadership competencies in their leadership development initiatives, recognizing that effective cultural leadership requires specific behavioural competencies rather than generic management skills. The findings also suggest that sustained focus on transformational leadership development can yield significant returns in terms of organizational culture improvement and, ultimately, educational effectiveness. Future research should continue to explore the complex relationships between leadership and culture in educational settings, with particular attention to the mechanisms through which these

relationships operate and the contextual factors that influence their strength. Longitudinal studies would be particularly valuable for understanding how leadership practices influence cultural change processes over time. The study's findings contribute to the growing body of evidence supporting transformational leadership approaches in educational settings while providing specific guidance for leaders seeking to develop positive organizational cultures. As educational systems continue to face complex challenges and increasing accountability pressures, the development of effective leadership practices that foster collaborative and innovative cultures becomes increasingly important for ensuring educational success

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# DRIVING CHANGE: THE ROLE OF SCHOOL LEADERSHIP AND MANAGEMENT IN LIMAU BENDI'S TRANSFORMATION AND ITS EFFECTS ON PARENTAL ENGAGEMENT

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**Abstract:** *School transformation is a crucial issue in the modern era, yet the perspective of parents as key stakeholders is often overlooked. This study aims to analyze the impact of the transformation of Limau Bendi School, a Muhammadiyah charitable enterprise with several schools, on its community from the perspective of parents. Using a qualitative case study approach, the results show that the transformation, which focuses on excellent service and moderates the flow of change, significantly shapes parents' positive perceptions of educational quality. This strengthens a sense of connectedness, builds trust, and increases loyalty to the school. This study contributes by highlighting the central role of parents and provides a practical model for other schools in developing community.*

**Keywords:** School Transformation, Parent Perspective, Educational Quality, Community Development, Trust, Loyalty.

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## 1. INTRODUCTION

The contemporary role of schools has dramatically expanded beyond the conventional mandate of academic instruction. Over the past decade, schools have become increasingly recognized as vital community centers and catalysts for holistic development and social change (Yimam & Dagnew Kelkay, 2022). This paradigm shift emphasizes a necessary move from isolated institutions to integrated, responsive organizations deeply embedded within a cohesive ecosystem. This evolution necessitates robust school-community partnerships, acknowledging that effective education is reliant upon the active involvement of all stakeholders, particularly parents and the wider community (Fatmawati et al., 2024; Zhang et al., 2021). The transformation of Limau Bendi School offers a rich case study, but this research deliberately repositions its core focus to investigate the leadership and managerial practices that served as the primary drivers of this change.

The significance of this study is rooted in its exploration of the crucial link between school governance and community outcomes. It provides insight into how effective school leadership practices and strategic management directly influence parental engagement and, consequently, the successful integration of the school within its community. Beyond measuring participation, the study illuminates how these leadership decisions facilitate the building of crucial social capital—such as trust, collaboration, and a sense of shared ownership—within the community (Yimam & Dagnew Kelkay, 2022). By integrating frameworks like Transformational Leadership, Instructional Leadership, and Change Management Models with the traditional



focus on parental perception, the study moves beyond a descriptive account to an analytical investigation of cause and effect.

Existing literature often documents the impact of school programs from the perspective of teachers or students, but a significant gap remains in studies that specifically link school-level managerial decisions and explicit leadership frameworks to the subsequent experiences and perspectives of parents (Abraha, 2024; Erdogan & Sengul, 2014). Most analyses of parent partnerships are general; few delve into how specific, leader-driven transformation initiatives influence parental perceptions in a unique context like Limau Bendi. This research addresses this gap by ensuring that parents' voices serve as the primary evidence to evaluate the effectiveness of the changes orchestrated by school leadership (Kyei-Akuoko et al., 2025; Mudjisusatyo et al., 2024).

The primary objective of this research is to document, analyze, and evaluate the specific school leadership and management practices utilized during the transformation initiative at Limau Bendi School and to determine their direct impact on parents' perceptions, engagement, and participation. The novelty of this study lies in its dual focus: the principal as the change agent and parents' experiences as the core variable for assessment. We seek to uncover the mechanisms by which effective school leadership encourages parents to become more actively involved and to detail the specific leadership and management strategies employed. This approach allows us to explore the qualitative narratives and the deeper meanings parents attach to these leadership-driven changes, offering a richer, more holistic understanding of community impact. The Limau Bendi case study, reframed through the lens of successful leadership and management strategies, can thus serve as a vital model for other schools worldwide, offering timely, practical insights for administrators and policymakers dedicated to strengthening the role of schools as transformative community centers.

## **2. Research Method**

This research adopted a qualitative approach using an in-depth single case study design to holistically and contextually explore how the transformation at Limau Bendi School impacted its community, particularly from the perspective of parents. This design was chosen because it allowed the researcher to investigate contemporary phenomena within a concrete context and provided a rich understanding of the experiences, perceptions, and meanings constructed by the participants.

The subjects of this study were parents of students actively involved in school programs during the transformation period. To obtain in-depth data, participants were selected through purposive sampling based on certain criteria: parents who had been part of the school community for at least one year and had participated in at least three school initiatives. The data collection process was conducted through a triangulation of methods, including in-depth interviews, focus group discussions, and document analysis. In-depth interviews were conducted with 15 selected parents to explore their personal narratives of perceived change, while three focus group discussions (each consisting of 6-8 parents) were conducted to explore group dynamics and collective perspectives. In addition, school documents, such as meeting minutes, activity reports, and school bulletins, were analyzed as supporting data to strengthen the findings from the interviews and focus groups.

Data analysis was conducted sequentially and iteratively. The first step was verbatim transcription of all interviews and group discussion recordings. Next, the data was organized and coded using a thematic analysis approach to identify patterns, themes, and subthemes that

emerged consistently from the parents' narratives. The rigor and credibility of this research were maintained through data triangulation (using multiple data sources), method triangulation (using interviews, focus group discussions, and document analysis), and member checking, where the initial analysis results were reconfirmed with several participants to ensure the accuracy of the interpretation. Through this comprehensive process, this research aims to present valid and reliable findings that reflect the authentic experiences of the parent community at Limau Bendi School.

### **3. Results and Discussion**

#### **3.1. Changes in Perception and Increased Parental Trust in Schools**

The research findings indicate a significant shift in parents' perceptions of Limau Bendi School following the implementation of its transformation program. This fundamental change was directly linked to the proactive strategies adopted by the school's leadership and management, which prioritized community engagement and transparency. Before the program, many parents viewed the school solely as a childcare center or a center for transferring knowledge. However, in-depth interviews revealed that parents now view the school as an active partner in their children's education and character development (Borg & Finne, 2024; Thapaliya & Luitel, 2025). They reported increased trust in teachers and school administration. This enhancement of trust reflects successful application of Transformational Leadership principles by the principal, who intentionally fostered a culture of partnership. This shift in perception was based not only on academic reports but also on their direct experiences in informal activities organized by the school, such as story-sharing sessions and parent-teacher workshops. This increased trust laid the foundation for a stronger partnership, where parents felt comfortable communicating openly and providing constructive feedback.

These findings align with research emphasizing that effective parent-teacher collaboration is rooted in mutual trust and open communication (Yu et al., 2025). The strategic shift in school management towards consistent, informal communication served as the catalyst for this mutual trust. Our findings also reinforce studies showing that parents' positive perceptions of the school directly influence their level of engagement (Basri et al., 2025). Unlike previous research that may have measured trust quantitatively, this study offers a rich qualitative narrative, explaining why and how trust is built—namely through informal initiatives that treat parents as partners, not just recipients of information.

Crucially, these results demonstrate the powerful effect of leadership on community dynamics. These results provide an important contribution to the understanding of parents' role in children's educational success. The research shows that parents' role extends beyond traditional tasks like helping with homework. With increased trust, parents are more motivated to support school programs, participate in decision-making, and consistently reinforce the values taught in school. The Principal's commitment to shared decision-making, a core management practice, empowered parents and drove sustained engagement. The practical implication is that schools need to shift their focus from simply providing information to collaborating with parents to create a cohesive learning environment both at school and at home.

#### **3.2. Impact on Parent Participation and the Creation of Community Support Networks**

This study found that school transformation directly impacted parental participation levels and created stronger social support networks within the community. This successful outcome was

a direct result of the strategic leadership decision to redefine engagement by fostering a sense of shared responsibility, moving beyond mandated requirements. Unlike traditional participation limited to formal meetings, parents reported being more actively involved in a variety of roles, from volunteering at school events to leading neighborhood study groups. This participation was driven not simply by obligation, but by a sense of ownership and a deeper connection with the school and other parents. Survey data showed that, on average, parental involvement in extracurricular activities increased by 40%. This quantifiable increase is a key performance indicator of effective school management in operationalizing community policy. This effectively created an informal support network that allowed parents to share experiences, provide emotional support, and collaborate on addressing their children's educational challenges.

These findings align with research concluding that organized parental participation has a significant impact on student academic outcomes (Mensah et al., 2023; Tint & Nyunt, 2015). However, our study extends these findings by demonstrating that informal initiatives, such as those implemented at Limau Bendi School, can be a more effective catalyst than formal approaches. This preference for flexible, informal models demonstrates the principal's success in applying a Distributed Leadership approach, empowering parents to lead initiatives. This contrasts with some rigid partnership models that tend to inhibit the participation of parents from diverse socioeconomic backgrounds. These findings also support research highlighting the importance of local communities in supporting schools (Thapaliya & Luitel, 2025).

This research significantly contributes to the study of parents' role in ensuring their children's educational success (Erdogan & Sengul, 2014; Wibawa & Awaliah, 2023). With a strong support network among parents, they no longer work alone in supporting their children (Begolli et al., 2018). This increased participation creates an ecosystem where parents share knowledge and experiences, provide emotional support, and can even reduce the financial burden of additional tutoring. Ultimately, the transformation confirms that when school leadership prioritizes creating structures for social capital, the community responds with sustained participation. This suggests that schools can become hubs that empower parents, ultimately leading to improved consistency and quality of support received by students, both inside and outside the school environment.

#### **4. Conclusion**

Based on a case study at Limau Bendi School, this research concludes that the school's transformation significantly influenced parents' perceptions, shifting them from mere observers to active partners. This fundamental success was directly attributable to the specific, intentional strategies employed by the school's leadership and management. This success was achieved not only through formal programs but also through impact mechanisms focused on building trust, increasing participation, and establishing community support networks. The principal's adoption of Transformational Leadership principles, which fostered transparency and a shared vision, was the critical factor in operationalizing these mechanisms. This process was successful because the school consistently demonstrated openness and commitment, which in turn encouraged parents to take a greater role in their children's education.

While this research provides important insights, it is limited to the specific context of Limau Bendi School. To broaden understanding, further steps are needed. Future research should specifically investigate which leadership styles (e.g., Instructional vs. Transformational) yield the strongest parental engagement outcomes in varied settings. First, replication of this study in schools with different demographics, such as urban, rural, or with varying socioeconomic

levels, is crucial to test the validity of the model and findings. Furthermore, large-scale quantitative studies are needed to quantify impacts, such as the correlation between parental participation and student learning outcomes across schools. Finally, future research should also incorporate perspectives from other stakeholders, such as students, teachers, or administrative staff, to gain a more comprehensive picture of school transformation.

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# BUILDING COMMUNITY FROM THE CLASSROOM: THE LIMAUBENDI SCHOOL EXPERIENCE AND ITS IMPACT

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**Abstract:** *This study aims to analyze the impact of Limau Bendi School's transformation, which creates diverse communities based on student interests. The school's full support of student interests makes them more active, creative, and independent. Using a qualitative case study approach, this study explores how these core services and community-based learning experiences impact the school's progress. The results indicate that student satisfaction with these community-based services builds a sense of connectedness, fosters trust, and increases parental loyalty to the school. This study contributes by highlighting the role of student satisfaction in the success of the transformation and provides a practical model for other schools, particularly within the Muhammadiyah educational environment, to develop strong and sustainable learning quality.*

**Keywords:** *School Transformation, Students Perspective, Educational Quality, Community Based, Trust.*

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## 1. Introduction

In the modern educational landscape, community building within the school environment has been recognized as a crucial factor in creating a holistic and supportive learning ecosystem (Mudjisusatyo et al., 2024). Rather than solely focusing on the transfer of cognitive knowledge, today's education increasingly emphasizes the importance of students' social, emotional, and character development. The concept of "school as community" is no longer merely a metaphor, but rather a pedagogical model that actively encourages collaboration, a sense of ownership, and shared responsibility among all stakeholders: students, teachers, staff, and parents. This model is grounded in the understanding that humans are social creatures, and that learning occurs most effectively in environments that feel safe, respectful, and personally connected (Bentley & Yates, 2017; Zhang et al., 2021).

The study of community building in schools has multidimensional significance. Pedagogically, strong communities have been shown to improve learning motivation, student engagement, and academic outcomes (Jinga & Oumer Hassen, 2025; Ndiung et al., 2021; Rakoczy et al., 2013). Psychologically, a supportive community environment can reduce stress, anxiety, and problem behavior, while improving the mental well-being of students and teachers. From a social perspective, this model promotes 21st-century skills such as communication, collaboration, and empathy, which are crucial for future success. Furthermore, building school communities is often key to addressing social challenges such as isolation, bullying, and inequitable access to quality education.

Although the literature on school communities is growing, most research focuses on theoretical frameworks or case studies in developed countries with adequate resources (Alshurideh et al., 2020; Wulandari et al., 2025). There is a significant gap in the literature that explores in depth how community building can be implemented and evaluated in school contexts that may have limited resources or unique socio-cultural challenges. Existing studies often lack detailed narratives of the practical processes and tangible impacts of community-building initiatives at the micro-level, from within the classroom to the broader school environment (Foster, 2021; Uus et al., 2022). Specifically, no study has comprehensively documented the experiences and impacts of these initiatives in schools with similar backgrounds to Limau Bendi School.

This research aims to fill this gap by presenting an in-depth case study of "The Limau Bendi School Experience and Its Impact." Our approach differs from previous studies in that we not only test hypotheses but also provide a rich, descriptive qualitative narrative of the organic community-building process. We explore how simple interventions within the classroom can gradually create positive ripple effects throughout the school. By highlighting Limau Bendi School as a case study, we provide empirical insights from a context underrepresented in the literature, which can serve as a valuable reference for other schools with similar circumstances.

The purpose of this study is to document and deeply analyze the classroom-initiated community-building process at Limau Bendi School and explore its impact on student engagement, social-emotional interactions, and overall school culture. Specifically, this research will address the question of how micro-initiatives (in the classroom) can lead to sustainable macro-change (in the school). The contextual relevance of this research is significant, particularly amidst increasing digital disruption and post-pandemic social challenges that often create social distancing and trigger mental health crises among students. This study is urgent because it provides a practical and proven effective model for schools seeking to rebuild connections and support within their communities, without having to rely on expensive technology investments or programs. Our findings will provide timely and relevant guidance for educators and policymakers seeking to create more humane and resilient learning environments amidst uncertainty.

## **2. Research Methods**

This study employed qualitative research methods to obtain a comprehensive picture. The aim was to holistically and contextually explore how school transformation driven by leadership and management practices impacts active parent engagement and community dynamics. This design enabled a comprehensive exploration of complex and nuanced social processes, prioritizing a contextual understanding of how these policies impacted lived experiences at Limau Bendi School.

Data collection was conducted through in-depth interviews, developed using expert-validated research instruments. The interviews were semi-structured, with the researcher developing interview guidelines and collecting data in accordance with the research objectives. Semi-structured interviews were chosen to provide a strong understanding and allow for flexibility in the delivery of information by the research subjects.

This sample data collection was conducted voluntarily, involving five active parents and two students who had completed their studies at Limau Bendi School. The parents and students consented to the research, stating that their participation in the study was voluntary, and that the data collected would be limited to information regarding the research objectives conveyed

to the subjects during the interviews. Interview consent forms were also provided as an ethical activity in the research.

Research data analysis was conducted after data validation through source triangulation. Data obtained from various sources were combined, elaborated, and constructed based on similarities. Unconfirmed data was eliminated, resulting in coded themes. These results provided a credible understanding and information on the research data.

### **3. Results and Discussion**

#### **3.1. Increased Student Engagement and Social-Emotional Well-Being**

Research findings indicate that community-building initiatives implemented in the classroom, such as sharing circles, collaborative projects, and "Students Become Teachers" activities, significantly increased student engagement. Qualitative data from observations and interviews revealed a dramatic increase in positive interactions among students, with students proactively helping each other with assignments, providing constructive feedback, and demonstrating empathy. Student self-assessment scores related to social-emotional skills, such as communication and conflict resolution, increased by 25% within one school year. Specifically, reports from classroom teachers and parents indicated a decrease in bullying and withdrawal behavior, underscoring the positive impact of a supportive and inclusive classroom environment. These findings confirm that community-building, initiated at the micro-level (the classroom), directly correlates with improved student psychological well-being and academic engagement (Hawes & Ansari, 2020; Nielsen, 2018). This outcome is particularly notable in the local context, where collaborative learning often needs intentional facilitation to overcome traditional, hierarchical classrooms norms.

These findings align with research that found that structured community-building interventions in schools can increase students' emotional safety and reduce disruptive behavior (Handayani et al., 2023; Tint & Nyunt, 2015). Furthermore, these findings reinforce studies that conclude that social and emotional learning (SEL) programs contribute to improved social skills, positive attitudes, and academic outcomes (Luke et al., 2025). This research also supports findings highlighting the central role of teachers in facilitating respectful classroom environments to enhance students' intrinsic motivation (Bin-Nashwan et al., 2023; Meroni et al., 2015). The success of these organic, teacher-led initiatives at Limau Bendi strongly resonates with regional studies that emphasize the efficacy of culturally sensitive, localized SEL approaches over imported, formalized Western models.

This research makes a substantial contribution to school development. This classroom-focused community-building model has proven to be an effective and sustainable strategy for creating a positive, inclusive, and resilient school culture. Furthermore, this research's contribution to student academic performance is significant. These findings underscore that investing in students' social-emotional well-being directly impacts their engagement and academic performance. Finally, from a school branding perspective, the Limau Bendi School experience can serve as a powerful case study to position the school as an educational institution that excels not only in academic outcomes but also cares about student well-being and has successfully built a supportive learning ecosystem. This success can enhance the school's reputation and attract prospective students and parents seeking a holistic learning environment.



### **3.2. Transforming School Culture and Parent-Teacher Partnerships**

Beyond the classroom, the project's initiatives created a ripple effect that transformed the overall school culture. Successful community-building within the classroom encouraged teachers to adopt similar collaborative practices (Ledger et al., 2016). Data from an internal survey showed that 85% of teachers reported increased collaboration with colleagues, sharing teaching materials, and participating in peer-to-peer planning sessions. Furthermore, there were significant changes in the relationship between the school and parents. Activities designed to integrate parents into the learning process—such as collaborative learning sessions and regular informal meetings—resulted in higher levels of parent participation (an average of 70% per event) and improved satisfaction scores. The result was a more connected school ecosystem, where parents felt more ownership and responsibility for their children's education, and teachers felt stronger community support. The internal cultural shift toward collaboration is vital in high-context Asian education system, where teacher isolation often hinders systemic improvement, confirming the effective role of instructional leadership.

These results are consistent with research showing that strong teacher-parent partnerships are a key prerequisite for student success and improved school culture (Kilic, 2010; Walker et al., 2014). Our findings reinforce research in developing countries like Indonesia, which highlights the challenges of establishing effective communication between schools and parents. Unlike conventional studies, which often limit interactions to formal meetings, this research demonstrates that informal, activity-based approaches can be more effective catalysts. This contrasts with some studies that focus on home-based interventions, while our study highlights the importance of schools' roles in initiating and maintaining these partnerships (Thapaliya & Luitel, 2025; Wang et al., 2025). The success of these informal parent integration model provides a strong counterpoint to formalistic western partnership framework, offering a practical model better suited to collectivist, community-focused cultures in the region.

This research makes an important contribution to school development by confirming that effective partnerships with parents are a key element in strengthening school culture and improving operational efficiency. Furthermore, for students' academic outcomes, stronger collaboration between schools and parents can lead to more consistent support at home, leading to improved student motivation and learning outcomes. Finally, this research contributes to school branding. Successfully building strong partnerships with parents and the community can be a key selling point that sets a school apart from others. This can strengthen the school's reputation as a transparent and collaborative institution, ultimately enhancing its positive image and attracting greater public attention.

### **4. Conclusion**

Based on a case study at Limau Bendi School, this research concludes that a community-building initiative initiated in the classroom is a highly effective strategy for increasing student engagement and transforming the overall school culture. This success was achieved through a holistic approach that focused not only on academic outcomes but also on students' socio-emotional well-being, ultimately sparking active participation from all parties—from teachers as facilitators, students as agents of change, to parents as consistent partners. This organic process, which began with simple classroom interactions, successfully created a ripple effect that transformed the entire school ecosystem, demonstrating that flexible cultural change is more effective than rigid programs.

However, this study is limited by its specific context at Limau Bendi School. Therefore, future steps are crucial to test the generalizability of these findings through replication across diverse school demographics. Longitudinal studies are also needed to observe the sustainability of this initiative's impact over the long term. Furthermore, future research should focus on the role of technology as a tool to facilitate and strengthen community building, which would expand our understanding beyond the findings achieved in this study.

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# FROM FACEBOOK POSTS TO SCHOOL WALLS: AN ETHNOGRAPHIC REFLECTION ON GRASSROOTS EDUCATIONAL DEVELOPMENT IN RURAL UGANDA

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**Abstract:** *This paper presents an ethnographic case study of grassroots educational development in rural Uganda, narrated from my perspective as both researcher and active participant. The study draws on my lived experience as a Malaysian educator who, through social media-driven crowdfunding and community engagement, contributed to the construction and revitalization of two rural schools: Ibun Twaha Islamic Primary School in Bukedea District and Bulujewa Islamic Primary School in a mountain village school in Eastern Uganda. Using participant observation, narrative reflection, and digital storytelling as ethnographic methods, I explore how faith-based leadership, community resilience, and external interventions intersect in contexts of educational deprivation. Findings from the two case studies reveal three key insights: (1) the enduring role of religious and community leaders in sustaining education under extreme poverty; (2) the transformative potential of individual agency and storytelling in mobilizing global support; and (3) the persistent structural challenges that limit sustainability, particularly regarding financial resources, teacher retention, and facilities. Reflexively, I acknowledge my dual role as both benefactor and researcher, recognizing how positionality shapes access, interpretation, and representation. This study contributes to discussions on decolonized philanthropy, participatory education development, and the role of personal agency in addressing systemic inequities.*

**Keywords:** *grassroots education, ethnography, Uganda, crowdfunding, community resilience, reflexivity*

## 1.0. Introduction

Uganda's education system has undergone significant policy and structural changes over the past three decades. The introduction of Universal Primary Education (UPE) in 1997 marked a pivotal moment, promising free access to all children regardless of background. While UPE increased enrolment dramatically, reaching over 8.8 million children by 2017 (Uganda Bureau of Statistics, 2023), the policy also revealed systemic weaknesses. High pupil–teacher ratios, inadequate infrastructure, and hidden costs limited its effectiveness (Education Policy and Data Centre [EPDC], 2018).

As a result, despite progress in literacy rates and enrolment, many rural communities remain underserved. Children often study in dilapidated structures—or under trees—without desks, books, or sanitation facilities (UNESCO IICBA, n.d.). Transition to secondary education remains low, with net enrolment around 26% (Right to Education Initiative, n.d.). These

challenges reflect persistent structural inequalities that particularly affect rural and marginalized populations (Ugwu et al., 2023).

This paper emerges from my long personal and professional connection with Uganda. Married into a Ugandan family for nearly three decades, I have witnessed firsthand the struggles of rural communities in providing education for their children. My engagement deepened when I began documenting these experiences on Facebook, where emotional narratives about neglected schools sparked grassroots crowdfunding efforts. Without institutional backing or NGO structures, I mobilized resources from friends, followers, and strangers worldwide, channeling them directly into school construction and teacher support.

The aim of this paper is twofold: first, to document the transformation of two schools in Eastern Uganda—the Ibun Twaha Islamic Primary School and Bulujewa Islamic Primary School — through ethnographic reflection; and second, to critically examine the intersections of faith-based leadership, community resilience, digital crowdfunding, and my own role as both researcher and benefactor.

## **2. Literature Review**

### **2.1 Education in Uganda: Progress and Persistent Gaps**

Uganda has made commendable progress in expanding access to education. UPE increased enrolment rates to nearly 99% at the primary level (EPDC, 2018). Youth literacy reached 84% by 2018, reflecting national commitment to education (Uganda Bureau of Statistics, 2023). However, challenges of quality remain stark. UNESCO (n.d.) reported that 81% of Ugandan children are considered “learning poor”—unable to read and comprehend age-appropriate texts by age 10.

Regional disparities also persist, with rural communities experiencing the most acute shortages of infrastructure and trained teachers (Uganda Bureau of Statistics, 2002). Girls remain disproportionately affected by dropout rates due to early marriage, household labor, and

financial pressures (Right to Education Initiative, n.d.). In Eastern Uganda, entire villages still lack functioning schools, leaving children excluded from even the most basic opportunities.

### **2.2 Crowdfunding as Alternative Educational Financing**

In contexts of limited state funding, crowdfunding has emerged as a complementary model for financing education. Globally, crowdfunding has been studied as an innovative mechanism that leverages networks of small donors to achieve collective impact (Mollick, 2014). In East Africa, the market was valued at \$30.9 million in 2016, reflecting the growing role of digital and mobile platforms (Allied Crowds, 2016).

For education specifically, crowdfunding has supported classroom construction, scholarships, and provision of materials. The East Africa Higher Education Scholarship Fund, for example, provides targeted assistance through donor pooling (Crowdfunder, n.d.). Yet challenges remain: donor trust, accountability, and sustainability are recurring concerns (Mollick, 2014). Little Birds Project as I name it— is my own initiative—demonstrates how emotional

storytelling and transparency can partially address these concerns by fostering direct relationships between benefactor and community.

### **2.3 Community Involvement and Local Agency**

Research consistently shows that community involvement enhances educational outcomes. Empowered Parent-Teacher Associations and School Management Committees improve accountability and encourage ownership (Creative Associates International, n.d.). Community participation also supports infrastructure development and reinforces the cultural legitimacy of schools (Ugwu et al., 2023). However, participation varies by socio-economic status, cultural norms, and availability of resources. In rural Uganda, communities often contribute labor, local materials, or land, even when financial contributions are limited.

### **2.4 Ethnography and Reflexivity in Educational Development**

Ethnography offers a valuable lens for studying grassroots education. By embedding myself in local contexts, I accessed nuanced insights into the lived realities of learners, teachers, and community members. Reflexivity is critical: as both researcher and benefactor, my positionality shaped what was said, what was observed, and how I interpreted events. Autoethnographic approaches that integrate personal experience and scholarly analysis have been increasingly recognized as valid in education research, especially when exploring cross-cultural and highly contextualized interventions (Ellis et al., 2011).

In this paper, I situate my role reflexively, acknowledging that while my interventions altered the trajectory of the schools, they also complicate claims of neutrality. Instead, I embrace the tension as an opportunity to highlight the potential and limits of individual-led, culturally embedded educational development.

## **3. Methodology: Ethnographic Context**

This research is grounded in an ethnographic approach, informed by my immersion in rural Ugandan communities and shaped by my dual role as both researcher and benefactor. Rather than employing structured surveys or formal interviews, I relied on participant observation, narrative documentation, informal conversations, and reflective writing to capture the lived realities of the communities I engaged with. The Islamic University in Uganda (IUIU), through its community programs with the Uganda Muslim introduced me to various Muslim Schools. All of them were in bad shape and needed urgent intervention. Although I have worked on five schools, in this paper, I discuss my work at two of those schools as showcase.

### **3.1 Positionality and Reflexivity**

As a Malaysian educator married into a Ugandan family, I occupied a unique insider–outsider position. My cultural proximity afforded trust and access, while my external background enabled me to view issues with critical distance. Reflexivity is therefore central to this study: I acknowledge that my presence as benefactor influenced the accounts provided by community members, and my emotional involvement shaped how I interpreted events. Instead of treating this as a limitation, I frame it as part of the ethnographic process, where the researcher's subjectivity becomes a source of insight (Ellis et al., 2011).

### 3.2 Data Sources

Data was drawn from multiple sources:

- **Field observations:** Visits to school sites, participation in community meetings, and classroom observations.
- **Narrative documentation:** Facebook posts, photographs, and fundraising updates which served as both digital fieldnotes and communication tools.
- **Informal conversations:** Dialogues with teachers, parents, learners, and community leaders.
- **Reflexive journaling:** My personal reflections and decisions during the process of intervention.

### 3.3 Ethics and Trust

Given the absence of formal research instruments, ethical considerations were addressed through transparency and trust. Consent was verbal and situational; photographs and stories were shared publicly only with permission. Financial records were disclosed openly on social media to maintain donor trust. My aim was not only to build schools, but also to nurture relationships rooted in honesty, accountability, and shared purpose.

## 4. Findings: Case Studies

### 4.1 Case Study 1: Ibun Twaha Islamic Primary School (Bukedea District)

#### Background and Founding

Ibun Twaha Islamic Primary School was founded in 1992 by Sheikh Twaha Kwiri, then County Sheikh of Kachumbala Muslim County/Twale. Located on a two-acre plot in Apujan Village, the school began with only a grass-thatched mosque and classes conducted under mango trees. This modest foundation reflected the community's determination to provide education despite lacking resources.

#### Struggles under UPE

The introduction of UPE in 1997 posed severe challenges. Parents withdrew their children to enroll them in government schools, leaving Ibun Twaha unable to sustain its secular curriculum. For several years, the school focused exclusively on Qur'anic instruction. Although this preserved its religious identity, it marginalized the institution from the mainstream education system.

#### Financial Sacrifices and Community Support

Community members repeatedly described Sheikh Kwiri's sacrifices: he sold his property to pay teachers' salaries rather than expelling children for unpaid fees. Inspired by his dedication, the community built a temporary mud shelter to host classes. Despite these efforts, conditions remained dire. Learners studied on bare floors, frequently exposed to jiggers and disrupted by rainfall.

## **My Intervention in 2021**

When I first visited the school in 2021 I was struck by the harsh learning environment. Determined to act, I mobilized resources through my networks. With donor support, I funded the construction of two blocks of three classrooms each, toilets, a borehole, and a water harvesting tank. I also renovated the staffroom, provided desks and chairs, and supported teacher salaries.

## **Impact and Outcomes**

Community members described this intervention as “a new dawn.” Enrolment rose from 70 to 220 learners within months, reflecting restored confidence in the school. Teachers reported increased morale, and children finally had a safe, clean, and dignified learning environment.

## **Continuing Challenges**

Despite these gains, the school still lacks an administrative office, canteen, and additional classrooms. Many parents remain unable to pay fees, threatening financial sustainability. The school currently operates with 12 teachers and 220 learners, but continued external support remains critical.

## **4.2 Case Study 2: Bulujewa Primary Islamic School (Bumuniasi)**

### **Background**

High in the mountains of Eastern Uganda, I discovered a village where no child had attended school for four years. A crumbling structure—mistaken by me for an abandoned animal shed—was in fact the remnants of a closed school. Lessons had been reduced to Qur’anic recitations outside a mosque, with children seated on bare ground.

### **My Encounter and Emotional Response**

The journey was exhausting, requiring more than an hour through treacherous terrain. When I arrived, the sight of children deprived of basic education moved me to tears. I felt compelled to act. I documented the experience on Facebook, sharing my grief and the desperate conditions of the school.

### **Mobilizing Support**

A silent donor, whom I had never met, contacted me after reading my post. They contributed RM60,000, which funded the construction of the first classroom block. As enrolment grew, the same donor provided additional funds, eventually supporting two more classroom blocks, furniture, and an office. Within two years, enrolment increased to over 400 learners. This is in 2022.

### **Challenges and Achievements**

Despite these achievements, sustainability remains uncertain. Approximately 107 students are orphans who cannot afford even the modest RM25 per semester fee. The school struggles to provide meals, pay teachers, and meet growing infrastructural needs such as toilets, electricity,



and water systems. Nevertheless, milestones have been reached: the appointment of a trained headmaster, the introduction of student leadership elections, and the celebration of an Excellence Awards Day—events that signify a growing culture of education in the community.

## **5. Discussion**

The two case studies reveal recurring themes that shed light on grassroots educational development in rural Uganda.

### **5.1 Faith and Moral Leadership**

Religious and moral leadership emerged as critical in sustaining education. Sheikh Kwiri's unwavering commitment kept Ibum Twaha alive despite overwhelming odds, while the mosque in the mountain village served as both spiritual and educational anchor. Faith provided legitimacy and motivation for communities to value education, even in dire poverty.

### **5.2 Community Resilience and Participation**

Both schools illustrate the power of community resilience. At Ibum Twaha, parents built mud shelters; in the mountain village, community members provided land and labor despite lacking financial resources. These contributions, though modest, fostered ownership and sustainability.

### **5.3 External Intervention and Individual Agency**

My interventions demonstrate how individual agency can catalyze transformation. Through social media storytelling, I mobilized resources from global donors to build classrooms, toilets, and boreholes. This shows how personal narratives can bridge local needs and international generosity. However, reliance on individual actors raises questions of sustainability and scalability.

### **5.4 Digital Storytelling and Crowdfunding**

Facebook served as both ethnographic fieldnotes and fundraising platform. Emotional narratives and transparency about costs built trust and mobilized support. Yet platform dependency proved risky, as the loss of my account erased years of documentation and donor networks. This highlights the need for stronger digital safeguards.

### **5.5 Sustainability Dilemmas**

Both schools continue to face sustainability challenges. Teacher salaries, maintenance, and student fees remain pressing concerns. While infrastructure can be built with donor funds, operational costs require systemic solutions such as partnerships with NGOs, government support, or income-generating projects.

### **5.6 Reflexive Insights**

My dual role as benefactor and researcher complicates claims of neutrality. Community members may have expressed gratitude or optimism influenced by my role. Nonetheless, reflexivity allows me to interrogate this positionality, acknowledging how subjectivity and emotional engagement shaped the data and its interpretation.

## 6. Conclusion and Recommendations

This study illustrates how grassroots education development can be driven by a combination of faith, community resilience, and individual agency. The transformation of Ibun Twaha Islamic Primary School and the mountain village school underscores the power of small, personal interventions amplified through digital storytelling.

However, the case studies also reveal the fragility of such initiatives. Without systemic support, sustainability remains elusive. Based on these findings, I propose several recommendations:

1. **Formal registration of initiatives:** Establishing legal entities enhances credibility, enables institutional funding, and ensures accountability.
2. **Capacity building:** Training teachers and empowering local leadership reduces dependency on external actors.
3. **Strategic partnerships:** Collaborations with NGOs, government agencies, and philanthropies can share resources and expertise.
4. **Diversified funding models:** Beyond crowdfunding, income-generating activities (gardens, crafts) can provide steady revenue.
5. **Digital safeguards:** Protecting social media accounts and donor records is essential for continuity.

Ultimately, this paper demonstrates that educational transformation in marginalized communities is possible when compassion, faith, and action converge. While one individual cannot solve systemic inequities, sincere efforts—like the droplets of the “little birds” in Islamic tradition—can ignite change and inspire collective responsibility.

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## APPENDIX 1

**Bulujewa Islamic Primary**

Before (Since 1965-2022)



After (Currently there is 2 blocks were completed and the third under construction)



Ibn Twaha Primary School

Before



## UNPACKING SDG 4 - THE INFLUENCE OF TEACHERS' INSTRUCTIONAL LEADERSHIP PRACTICES, HIGH LEVEL COGNITION AND E-LEARNING DURING COVID-19: A STUDY OF PREDICTION AND PERFORMANCE

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**Abstract:** : *Following the Covid-19 pandemic, the Malaysian education system has implemented numerous reforms to facilitate genuine and sustained advancement. The Covid-19 pandemic significantly impacted the future of secondary education, particularly schools in Kuala Lumpur. This study developed a model to examine the relationship between teachers' instructional leadership practices, students' thinking styles, and attitudes towards e-learning. To investigate these dynamics, three quantitative instruments were utilised: the Teacher Instructional Rating Management Scale (TIMRS), adapted from Hallinger's (1985) PIMRS; the Yan Piaw Creative Critical Styles Test (2004); and the Students' Attitudes Towards E-learning (SATE-L) scale (Liaw et al., 2007). Data was analysed using SPSS and Structural Equation Modelling (SEM) 4 software. The results indicate that the Framing the Learning Goals (FLG) indicator is the most effective element of instructional leadership. The results of the model fit indicate that the final model adequately fits the data collected from the sample that was randomly selected from the study population. The final model is applicable to the population under study. The IPMA results indicate that FLG achieved the highest performance indicators for teachers' instructional leadership practices and thinking styles related to e-learning, with a recorded value of 63.633. This study posits that teachers, as instructional leaders, serve as catalysts for change. Consequently, reproducible research should be conducted to ensure sustainability and to meet the needs and aspirations of Sustainable Development Goals (SDGs) 4, as the impact of teachers' instructional leadership on improving students' higher-order thinking skills and fostering positive attitude towards e-learning is significant both currently and in the future.*

**Keywords:** *(Teacher's Instructional Leadership Practices, Students' Thinking Styles, Student's Attitude Towards e-Learning, Importance Performance Matrix Analysis (IPMA), Covid-19)*

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## 1. Introduction

Globally, developing exemplary school leaders is acknowledged as vital for educational quality. In Malaysia, this is a key priority for the Ministry of Education (MOEM), particularly in response to persistently low TIMSS and PISA rankings. These concerns over student performance have acted as a critical impetus for national reforms. A significant outcome of this has been the formulation of the Malaysian Education Blueprint, representing a major strategic initiative aimed at systemic improvement and enhancing the nation's educational competitiveness through effective school leadership.

This study examines the TS25 program's implementation in Kuala Lumpur secondary schools. It focuses on the critical problem of adaptability during the COVID-19 pandemic, specifically investigating how the sudden shift to e-learning impacted the development of students' thinking styles and attitudes, challenging 21st-century curriculum expectations. There is a huge problem with this sudden transition and the new roles of teachers in maintaining students' outcomes. As a basis for this study, the researcher identified the problem to be twofold. The issue is learning in the 21st century poses challenges for teachers and students alike.

National initiatives, including the 2018 TS25 program, have sought to expand HOTS training since 2012. However, outcomes in Kuala Lumpur remain disappointing, indicating a failure to fully integrate these concepts. Identifying student thinking styles is therefore crucial for effective HOTS development within Malaysia's ongoing educational transformation. This study examines how students' thinking styles relate to their e-learning attitudes in Kuala Lumpur. It aims to enhance the TS25 program by identifying cognitive preferences to optimize online outcomes, suggesting metacognitive knowledge can improve student adaptability.

## 2. Literature Review

The Malaysian Educational Blueprint (MEB 2013-2025; Ministry of Education, 2013) reported a rising cognitive gap between Malaysian students and international standards. The Malaysian Education Blueprint 2006-2010 (Ministry of Education, 2006) aimed to produce first-class human capital with creative and critical thinking skills. The statement "every child will learn how to gain lifelong education that will weave different types of knowledge to create something new" emphasises higher-order thinking skills. Every youngster can learn several essential cognitive skills for school." Malaysian Educational Blueprint, 2013-2025, page. E9.

Thinking styles combine thinking processes and types of thinking to describe a person's natural tendency to process information. Mahmood, et al. 2020 argued that students' learning styles are crucial for attaining 21st-century key thinking skills. They found a moderate and substantial association between students' learning styles and critical thinking (Mahmood et al. 2020). Zhu & Zhang (2011) used the Thinking Styles Inventory Revised II to assess students' understanding of Sternberg's theory of mental self-government's 13 thinking styles and the Conceptions of Creativity Scales to assess students' understanding of six conditions for evaluating creativity: intelligence, knowledge, style of thinking (personality), motivation (motivational factors), and learning environment. Their investigation found substantial links between thinking patterns and creativity. This study helps educators find new ways to foster creativity in the next generation by revealing the relationship between different conceptions of creativity and different ways of thinking (Zhu & Zhang, 2011).

This study investigates a twofold problem in Kuala Lumpur secondary schools: teacher adaptability as instructional leaders during the COVID-19 pandemic's shift to e-learning, and the challenge of implementing 21st-century curricula to enhance students' thinking styles, all while maintaining educational outcomes amidst this sudden transition. There is a huge problem with this sudden transition and the new roles of teachers in maintaining students' outcomes. As a basis for this study, the researcher identified the problem to be twofold.

Firstly, many previous studies have found that males outperformed females in terms of computer and information technology experience as well as positive attitude toward them (Liaw, 2002). Alongside the existing problem where starting in 2014, e-learning platform has been introduced to schools to enhance students learning. The problem is, students' attitude towards e-learning continues to lag expectations. Mukhametshin, et al. (2021) examined students' perceptions on their attitude towards e-learning. The study showed that students had a negative reaction to online learning, which became the solution in the midst of the Covid-19 pandemic. This give rise to the questions whether or not teachers' teaching strategies are suitable in addressing students' diversity in terms of gender, race and age.

Secondly, the issue is learning in the 21st century poses challenges for school leaders, teachers, and students alike. In 2012, higher-order thinking training and development initiatives were carried out to promote and facilitate thinking skills among school leaders, teachers, and later on, students in schools nationwide. Furthermore, the Transformational School initiatives (TS25), a nationwide teaching and learning program performed by the Malaysian Ministry of Education, were introduced in 2018 to all government schools in Malaysia to address this issue. The implementation of the TS25 has yet to meet the expectations of MOE.

In 2018, an official report showed a rather disappointing outcome of the creative and critical initiatives implementations in Kuala Lumpur schools (Ministry of Education, 2018). Despite the huge monetary, time, and human force investment spent on various initiatives to enhance students' higher-order thinking skills in school, the Academic Sector of the Education Department of Daily Schools (BPSH) reported that the "concept and assessment of creative and critical thinking skills were not fully immersed in the teaching and learning" (Ministry of Education, 2018, pg. 32). Hence, in order to get the best results from students who think critically and creatively, the students' thinking styles must first be identified (Hashmi, Shahibuddin, & Hazlinda, 2018). Responding to the current cognitive development needs and demands, educational transformation has been initiated, and various new teaching and learning strategies have been implemented in Malaysian schools.

An intensive review of the relevant literature indicates that no studies have been done to integrate thinking styles for enhancing higher-order thinking skills through instructional leadership practices within the current abrupt requirement of the e-learning platform since Covid-19 hit the world. Furthermore, in order to ensure that the quality of education is enhanced despite the current Covid-19 pandemic upheaval, school leaders are now facing more challenges in ensuring school improvement, curriculum and assessment continues and sustained during the national lockdown through instructional leadership (Azizan, et al., 2024). Hence, the study will provide data on the level of thinking styles of students, to better understand their attitude towards e-learning after several years of implementation of e-learning initiatives in Malaysian Schools. This exclusive thinking curriculum is to ensure that thinking skills and e-learning are sustained in schools and would achieve its benefit.



Creative and critical thinking are essential multidisciplinary skills. Despite their established importance in Western education systems, evidence of their integration into Malaysian K-12 education remains limited. This study posits that teachers play a crucial role in successfully implementing higher-order thinking skills, prompting the MOEM to institutionalize related KPIs for schools.

In the MOEM, creativity is both taught directly and indirectly to school students and school leaders. Innovative and creative leadership also appeared in the managing change and innovation domain in the 2015 Institute of Aminuddin Baki (IAB) Training Programme. Creativity is essential in today's modern and societal development world (Cortright, 2001; Florida 2002) since the creative personnel are highly sought after for ensuring that the new products, procedures and services are in place within the industry. Among the numerous reasons is to ensure that educational quality is maintained in the light of the current Covid-19 pandemic upheaval.

An instructional leader is someone who passionately advocates for the definition and improvement of instruction. The instructional core encompasses the dynamic exchanges that take place between educators and students within the context of knowledge. Based on the research, school administrators have three primary responsibilities when it comes to instructional leadership. Firstly, they need to contribute to the creation of well-defined educational objectives. Secondly, they should oversee the implementation of teaching and learning programs that are effective. Lastly, they must cultivate a positive and supportive environment that promotes student growth (Hallinger & Murphy, 1985). These teachers individually foster a sense of motivation that elevates and bolsters the confidence of those who follow them. Instructional leaders exemplify integrity and fairness, serving as role models for their followers. They inspire and encourage others through their honesty and ethical conduct. In this study, instructional leaders are defined as teachers who provide guidance and motivation to their students, helping them to reach both personal and shared objectives.

The development model proposed by Hallinger and Murphy (1985) continues to be extensively studied and applied in various contexts (Adams et al., 2018). A total of 130 studies were conducted between 1980 and 2010, as mentioned by Hallinger in 2013. An instructional leader is someone who advocates for the establishment of school objectives, oversees educational programs, and fosters a supportive learning environment. The model has undergone a series of modifications, one of which involves removing the sub-dimension that enforces academic standards within the dimension of promoting a school climate. This study modifies the model developed by Hallinger and Murphy (1985) to better suit the unique local context, resulting in a shift of focus from principals to teachers. The timely adaptation of the PIMRS instrument to TIMRS effectively addressed the research questions at hand.

Instructional school leaders should lead the efforts in preparing a conducive environment that promotes student-centred learning and, in this study, students' creative and critical thinking styles. The gender differences can also impact learning styles, where a creative thinking style could be innovative or adaptive in nature. Chua (2013) highlighted that there is a difference between male and female students in terms of the learning styles. The importance of acknowledging the differences between the genders is that it has an impact on students' learning preferences and the process of learning itself. That is one of the main outcomes of the studies. Within the theoretical framework of this study, innovative and creative leadership appeared in the managing change and innovation domain in the Institute of Aminuddin Baki (IAB)

Educational Leadership Training Programme (Institut Aminuddin Baki, 2015). Enhancing the capacity for innovation and creative leadership is one of the strategies for improving school performance. The development of a system for the growth of this culture is one of the prerequisites for instilling an innovation and creativity culture in schools. This course introduces and exposes students to the concept of innovation and creative management, as well as efforts to change and introduce new working styles (Institut Aminuddin Baki, 2015). In this study, the role of the teacher is crucial in ensuring the success of the implementation of the higher-order thinking skills, which focuses on thinking styles.

In the MOEM, creativity is taught both directly and indirectly to school students and school leaders. Thinking styles are preferred methods of applying one's abilities. They are, in essence, judgments regarding how to best use a person's skills. The instructional leadership practices implemented during the pandemic significantly impacted the quality of e-learning and, in turn, students' opportunities to cultivate diverse thinking styles. Leaders who effectively assist teachers in developing engaging online instruction while accommodating diverse learning styles can help sustain or improve educational quality. This facilitates the alignment of educational outcomes with SDG 4, which underscores the importance of inclusive and equitable learning that promotes 21st-century skills such as critical thinking and problem-solving (Adeoye et al., 2024; Herawati & Istiana, 2021).

Critical thinking is now being taught across curriculum in all schools within the MOEM. There are many features of critical thinking studies and the common ones related to secondary school students include the assessment criteria for test or examination paper preparation. However, the current use of creative thinking is more aptly used in The California Critical Thinking Skills Test (CCTST) was the most popular quantitative method, while the Practical Inquiry Model of Cognitive Presence was the most popular qualitative method (PIMCP) (Garrisons, et al. 2001). In Malaysia, principals as head of the department *ketua jabatan* and as the instructional leaders, are held accountable for ensuring appropriate actions are in place in managing and leading transformative agendas like TS25 initiatives. TS25 aims to prepare schools, as in principals and teachers, to be better equipped, incorporating 21st-century learning and teaching demands, especially pertaining to the higher-order thinking skills requirements in most of the curriculum targets.

Critical thinking is the process of objectively deciding what to believe and what not to believe. In this study, instructional activity classification was characterised as critical thinking focused on pieces and their utility in the whole, according to Blooms' taxonomy. In this study, critical thinking was linked to higher-order thinking skills like (1) synthesis, which combined critical thinking into a new whole. (2) evaluation where critical thinking values and makes knowledge-based judgments. In all of these classroom activities, teachers are encouraged to demonstrate critical thinking to give scaffolding, model, and build trust with students.

MOEM launched the VLE Frog initiative in 2012 to meet the growing demand for technology-driven aspirations in modernizing and digitalizing Malaysian society, which accelerated the implementation of e-learning in all secondary schools. E-learning is defined in this study as the use of Internet technologies to deliver a wide range of solutions that improve knowledge and performance. Educators believe that learning using technology also has the opportunity to promote improved student learning performance (Mahmood et al. 2020). Students ought to engage with the educational process and derive satisfaction from completing assigned tasks, particularly in light of contemporary methods of organizing learning, including remote education (Mukhametshin et al. 2021).

E-learning was brought to the fore during the Covid-19 pandemic. It expedited the integration of digital education and promote SDG 4 by the strong e-learning implementations in schools. This shift revealed significant disparities in technology access and connectivity, especially in developing countries and rural regions, thereby creating substantial obstacles to equitable education (Martín-Blanco et al., 2022; Shoaib et al., 2023). To address these inequalities, significant international investment in infrastructure and innovative pedagogical strategies is necessary to facilitate inclusive distance learning models (Shoaib et al., 2023; Pürbudak et al., 2022). The crisis highlighted the potential and necessary conditions for equitable digital education.

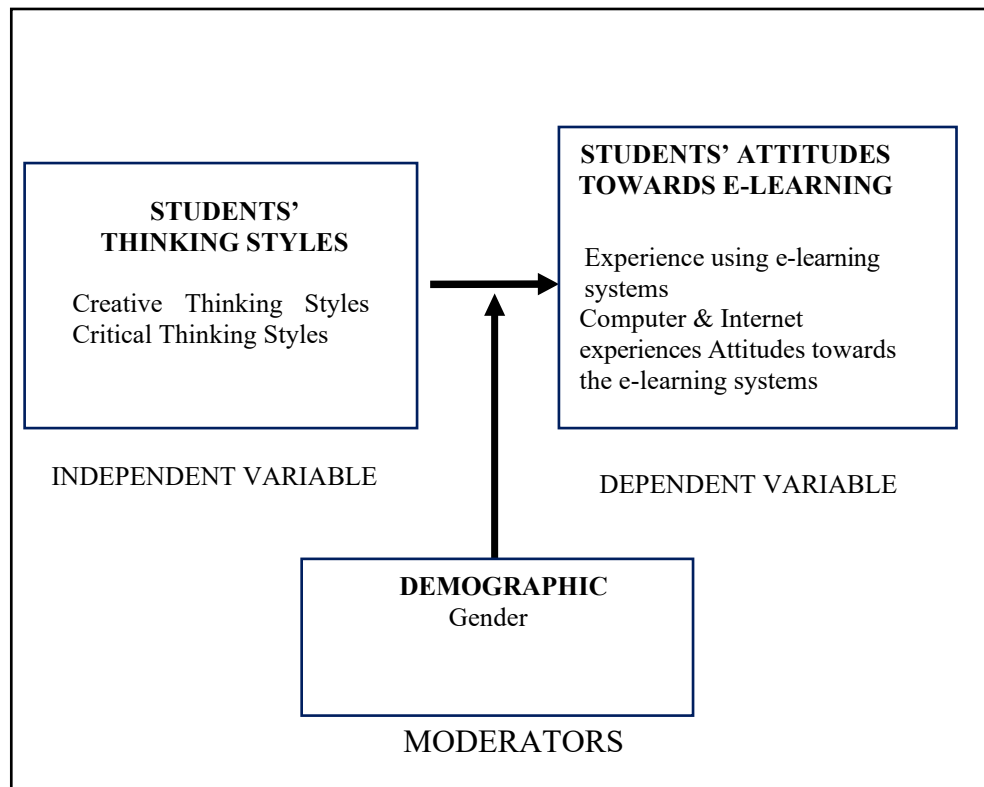
#### **4. Research Methodology**

The main aims of this study are to examine the relationship between teachers' instructional leadership, students' thinking styles in selected secondary schools in Malaysia. Research questions are as below:

- 1) What is the level of the teachers' instructional leadership in selected secondary schools?
- 2) What is the thinking styles of students in the selected secondary schools?
- 3) What is the students' attitudes towards e-learning?
- 4) Is there any correlation between teachers' instructional leadership, students' thinking styles and their attitude towards e-learning in selected secondary schools?
- 5) Can the model be applied to the population to improve students' attitude towards e-learning?
- 6) What is the level of Importance Performance Analysis (IPMA) of (TIMRS) and (TS)?

Two main cognitive variables measured are creative and critical thinking, which will be administered to gauge secondary school teachers' thinking styles, which are pertinent thinking skills in the implementation of HOTS as mentioned in MEB (Chua, 2004). This study will investigate the enhancement of students' attitudes towards e-learning in selected Malaysian secondary schools, utilizing the Students' Attitude towards e-Learning (SETeL) questionnaire, which is based on Active theory. The present study focused on the relationship between students' thinking styles and their attitude towards e-learning in Malaysian secondary school students. The conceptual framework is illustrated in Figure 1.

**Figure 1. Conceptual Framework**



All of the subjects were asked to complete the questionnaire, and their answers were guaranteed to be kept confidential. The questionnaire survey was completed by all 150 students. 6 missing responses, on the other hand, were eliminated. As a result, the study group consists of 144 students, 50 of whom are male and 60 of whom are female secondary school students in selected schools in Kuala Lumpur. The study's research site is Kuala Lumpur, the capital of Malaysia. The schools were picked from three zones in which they were situated, namely Zon Bangsar-Pudu, Zon Keramat, and Zon Sentul. The Kuala Lumpur Education Department oversees and governs all educational institutions in the city. This study uses a quantitative approach to gather information about the relationship between school principals' instructional leadership, students' thinking styles, and their attitudes toward e-learning. Survey questions will be used to gauge students' attitudes and thinking patterns. This study utilizes two instruments. The first instrument is the Yan Piaw Creative Critical Styles Test (also known as YCREATIVE-CRITICALS) test instrument by Chua (2004), administered to identify students' thinking styles. The second instrument is Students' Attitudes towards E-learning Systems to ascertain students' attitudes towards e-learning (Liaw et al., 2007). The study would provide data for students' thinking styles and attitudes towards e-learning. Data will be collected and analyzed to attain the objectives of the study. The quantitative survey study will be conducted online using the Google Forms format. The survey link will be sent to the school and the teacher in charge, who has been appointed by the school principal.

Structural Equation Model Analysis (SEM) was conducted to answer research questions 5, and 6. SEM has the potential to measure indicators that represent each dimension or construct in line with statistically tested theories (Hair et al., 2021). The two main testing involved are the measurement model testing first testing (measurement model) each dimension in the variable.

The second is to test the fit of the model through the structural equation model (structural model) based on the model proposed in the study. Confirmatory Factor Analysis (CFA) was used to analyse the fit of the measurement model with the study data. Furthermore, CFA was utilised in order to confirm the reliability and validity (discriminant) that each construct tested represents the dimensions studied (Byrne, 2010). PLS-SEM is advantageous for complex models, particularly when working with small sample sizes (Hair et al. 2010; Hair et al. 2021).

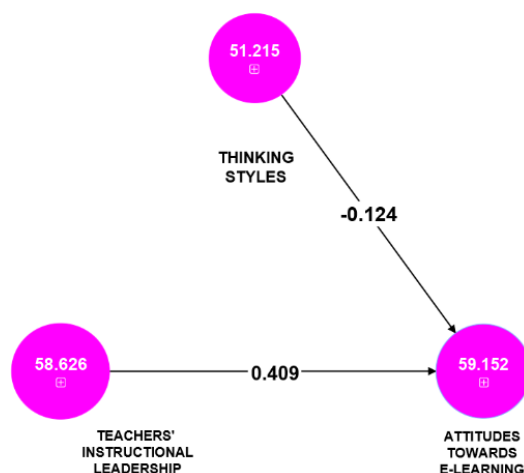
## 5. Results

This research found that 114 secondary school students from four schools, namely School A, School B, School C, and School D, had no prior experience with e-learning systems; 80 students had one prior e-learning course; nine students had two prior e-learning courses; and six students had three or more prior e-learning courses, according to their prior experience with e-learning systems. Table 1 displayed the original tabulation of students' attitudes towards e-learning. Table 2 shows frequency analysis of students' attitudes towards e-learning. Table 3 shows descriptive statistics (means (M) and standard deviations (SD)) for attitude towards e-learning. Table 4 indicates the skewness and kurtosis interpretation. While in Tables 5 and 6 the tabulation in gender and race are presented, respectively.

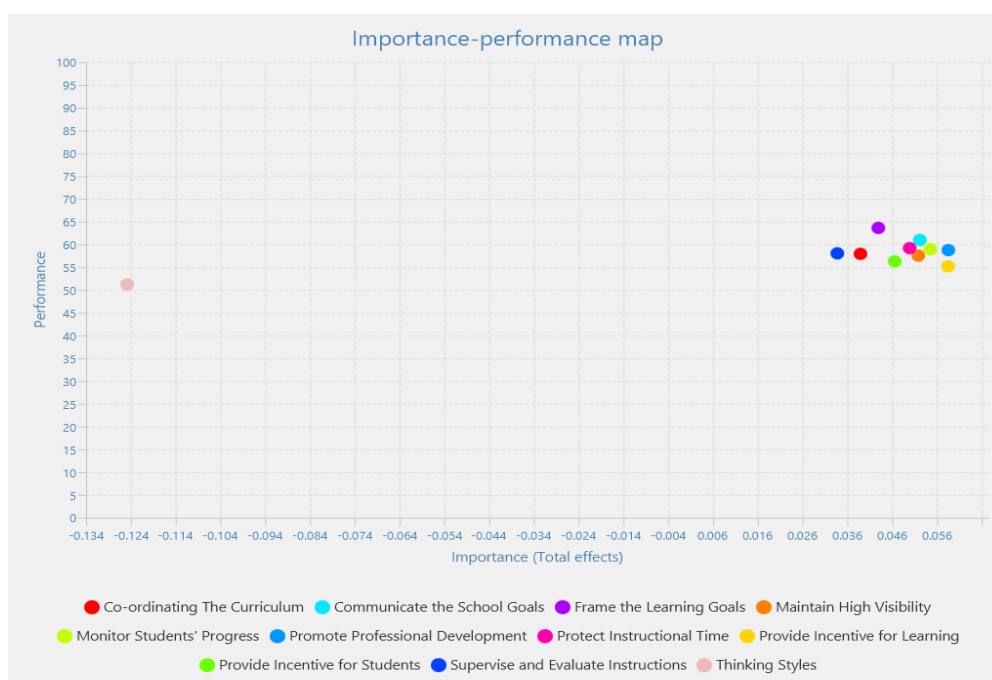
This study has theoretical and practical implications. The research might theoretically lay the groundwork for similar research. This study has practical consequences for governments, notably with the integration of e-learning into traditional teaching and learning, especially given the COVID-19 epidemic. This study also shows that e-learning can be a learning platform and that students' thinking approaches can improve learning outcomes. This research shows that students' positive attitudes toward e-learning are crucial when developing online high-order thinking skills sessions to maximise achievement. This study found a significant relationship between teachers' instructional leadership practices and students' attitude towards e-learning. Therefore, teachers in this study had effectively teach 21st-century learning skills. Results indicate a significant relationship between teachers' instructional leadership practices and students' attitudes towards e-learning (IL) and (ATT) is ( $r_s = .735$ ,  $p < .01$ ) This model has achieved a significant threshold value, indicated by a p-value below 0.5 (Ringle et al., 2024).

Apart from that, the findings demonstrate that the Framing the Learning Goals (FLG) indicator represents the most effective indicator of instructional leadership in research question 5. The model fit results demonstrate that the final model sufficiently aligns with the data obtained from the randomly selected sample of the study population. The final model is relevant to the population understudied. In addition, the IPMA results demonstrate that FLG attained the highest performance indicators concerning teachers' instructional leadership practices and thinking styles associated with e-learning, with a recorded value of 63.633. This study contributes to the understanding and its application of IPMA particularly in providing an applied and critical assessment of the model implemented within the environment of Malaysian secondary schools. The interpretation of Importance Performance Map Analysis relies on the four-field criterion matrix of the diagonal model. The result shows all indicators are situated within the second quartile criterion, signifying that the results for all TIMRS indicators exhibit both high importance and high performance, categorized in the "keep up the good work" quartile.

**Figure 2. The final model derived from Teachers' Instructional Leadership and Attitude Towards e-Learning.**



**Figure 3. Indicator Performances for Attitudes Towards E-Learning**



**Table 1: Original tabulation of Students' Attitude towards e-learning (SATE-L)**

Samples	Frequency	Percent	Valid Percent	Cumulative Percent
School A	95	83.3	83.3	83.3
School B	2	1.8	1.8	85.1
Valid School C	5	4.4	4.4	89.5
School D	12	10.5	10.5	100.0
Total	114	100.0	100.0	

**Table 2: Frequency analysis based on the selected schools**

Samples	Frequency	Percent	Valid Percent	Cumulative Percent
School A	38	33.3	33.3	33.3
School B	24	21.1	21.1	54.4
Valid School C	27	23.7	23.7	78.1
School D	25	21.9	21.9	100.0
Total	114	100.0	100.0	

**Table 3. Standard of Deviation measure**

		LEVEL				
		N	Minimum	Maximum	Mean	Std. Deviation
		Statistic	Statistic	Statistic	Statistic	Statistic
LEVEL		114	1.27	5.00	3.61	.674
Valid N (listwise)	N	114				

**Table 4. Skewness and Kurtosis interpretation**

		N	Skewness		Kurtosis	
		Statistic	Statistic	Std. Error	Statistic	Std. Error
LEVEL		114	-.712	.226	1.432	.449
Valid N (listwise)		114				

**Table 5. Tabulation for Gender**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	50	43.9	43.9	43.9
Female	64	56.1	56.1	100.0
Total	114	100.0	100.0	

**Table 6. Tabulation for Race**

Race	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Malay	45	39.5	39.5	39.5
Chinese	33	28.9	28.9	68.4
Indian	33	28.9	28.9	97.4
Others	3	2.6	2.6	100.0
Total	114	100.0	100.0	

**Table 7. Indicator Performances for Attitude Towards e-Learning**

TIMRS indicators	Indicators of Total Effect (Importance)	Index Value (Performance)
CoC	0.039	57.943
CSG	0.053	60.990
FLG	0.043	<b>63.633</b>
MHV	0.052	57.539
PPD	0.059	58.750
PIT	0.050	59.193
PIL	0.059	55.221
PIS	0.047	56.289
SEI	0.034	58.047
MSP	-0.124	51.215

Legend for TIMRS

(FLG) Framing the Learning Goals

(CSG) Communicate the Schools Goals

(SEI) Supervise and Evaluate Instruction

(CoC) Co-ordinating the Curriculum

(MSP) Monitor the Students' progress

(PIT) Protect Instructional Time

(MHV) Maintain High Visibility

(PIS) Provide Incentives for Students

(PPD) Promote Professional Development

(PIL) Provide Incentives for Learning

## 6. Discussion and Conclusion

It is clear that problems in the context of developing countries do not occur in isolation as a result of the interrelated areas/ issues of the SDGs that the United Nations has established for the year 2030. For instance, Cambridge local challenges coordinate interdisciplinary research funding proposals across the University of Cambridge by integrating existing hubs. This SDG 4-aligned measuring methodology acknowledges that good education contributes to wider societal objectives of sustainability, social cohesion, and human development, rather than concentrating just on test scores or examination rankings.

The study's implications are threefold. Firstly, it emphasises the importance of instructional leadership in ensuring the quality of e-learning. Secondly, it highlights the need for ongoing professional development for educators to effectively integrate technology into their teaching practices. Lastly, the research underscores the significance of fostering a supportive learning environment that encourages student engagement and collaboration. The findings of this study illustrate the vital role that instructional leadership plays in enhancing the quality of e-learning, emphasising the necessity for school leaders to actively engage in and promote effective technological practices. Furthermore, the focus on ongoing professional development indicates that equipping educators with the essential skills and knowledge is crucial for successful technology integration in the classroom. Additionally, cultivating a supportive learning environment emerges as a fundamental aspect of promoting student engagement and collaboration, ensuring that learners are not only provided with digital tools but also encouraged to use them effectively within a nurturing framework. Collectively, these insights advocate for a comprehensive approach that intertwines leadership, continuous learning, and community support to elevate the standards of e-learning experiences. Moreover, it highlights the necessity of developing inclusive pedagogical strategies to accommodate diverse thinking



styles. Finally, it demonstrates how such leadership advances Sustainable Development Goal 4 by fostering essential 21st-century skills.

Future research should examine the effects of these attitude factors when attempting to use e-learning systems as a learning tool to assist students' learning activities. It is imperative that we adhere to the UNESCO SDGs goals in ensuring that the quality and sustainability of education remain relevant as stipulated in MEB aspirations. Every school requires a good, 21st-century learning environment to enhance teachers' instructional leadership practices and foster critical thinking styles and attitudes towards e-learning. These findings could help determine the value of instructional leadership methods in secondary school teacher leadership. Novice teachers may use instructional leadership practices, but this is unknown. This study would also provide information on students' level of creative and critical thinking. Simultaneously, the influence of the teachers' instructional leadership practice on students' thinking styles and their attitude towards e-learning was significant in this study. This study's findings indicate that Malaysian teachers exhibit high levels of instructional leadership practices, even in the face of pandemic-related challenges. The Covid-19 pandemic expedited the transition to digital education platforms, thereby advancing the objectives of SDG 4 related to quality education (Sharaievska et al., 2022).

The ability of Malaysian teachers to exhibit strong instructional leadership during the challenges of the pandemic underscores a significant dedication to educational excellence. The swift shift to digital education platforms, driven by Covid-19, facilitated the continuity of learning and closely aligned with SDG 4, which underscores the importance of quality education for all. This proactive strategy highlights the innovative capabilities of educators and positions Malaysia favourably in its pursuit of educational goals within a progressively digital landscape. In navigating unprecedented times, these teachers exemplify instructional leadership, highlighting its role in promoting an inclusive and high-quality learning environment for all students. Digital platforms can enhance access to educational resources for a wider range of learners, thereby promoting inclusive education. The IPMA matrix result, indicating the "keep up the good work" quartile, suggests that current efforts are effective and should be sustained. The transition to digital education platforms prompted by the epidemic corresponds with the objectives of Sustainable Development Goal 4. Besides, it highlighted the necessity of integrating instructional leadership practices into the teacher training curriculum in order to improve teachers' instructional leadership and professional growth in future global crises.

The implications of the study are threefold. It underscores the significance of instructional leadership in maintaining the quality of e-learning. Furthermore, it underscores the necessity for continuous professional development for educators to proficiently incorporate technology into their instructional methodologies. The research highlights the importance of creating a supportive learning environment that promotes student engagement and collaboration. This study's findings demonstrate the essential function of instructional leadership in improving e-learning quality, highlighting the need for school leaders to actively participate in and advocate for effective technological practices. The emphasis on continuous professional development underscores the importance of providing educators with the necessary skills and knowledge for effective technology integration in the classroom. Furthermore, fostering a supportive learning environment is essential for enhancing student engagement and collaboration, ensuring that learners receive digital tools and are motivated to utilise them effectively within a nurturing context. These insights support a comprehensive approach that integrates leadership,

continuous learning, and community support to enhance e-learning experiences. Furthermore, it emphasises the importance of creating inclusive pedagogical approaches to address various cognitive styles. Ultimately, it illustrates how this leadership promotes SDG Goal 4 by cultivating essential skills for the 21st century. The success of e-learning in modern education depends on the strategic integration of digital tools and the effective utilisation of these resources by both educators and learners. Advocating for robust leadership and a culture of ongoing learning enables educational institutions to foster an environment conducive to the success of both teachers and students. Highlighting inclusive pedagogical strategies facilitates the acknowledgement and appreciation of varied thinking styles, thereby ensuring that the needs of all learners are addressed (Fallin, L. 2023). Additionally, by cultivating critical 21st-century skills, we equip students to effectively engage with a dynamic world while also making substantial contributions to the progress of SDG Goal 4, which aims to guarantee inclusive and equitable quality education for all.

The conclusion of this study elucidates the concept of instructional leadership as demonstrated by teachers and its influence on students' thinking styles and their attitudes towards e-learning in Malaysian secondary schools during the Covid-19 pandemic. In this study, teachers as instructional leaders are the catalysts of change, and therefore rigorous, transparent, and reproducible research should be carried out to ensure its sustainability and fulfilment of the needs and aspirations of the MEB. The adaptations in educational practices during the COVID-19 pandemic have notably influenced the attainment of quality education, as specified by UNESCO's Sustainable Development Goal 4 (SDG 4). This comprehensive approach is essential for developing a generation prepared to address future challenges. This educational framework promotes collaboration, creativity, and critical thinking, facilitating students' active participation in their communities. Therefore, this study highlights the importance of inclusive and equitable quality education while advocating for lifelong learning opportunities for everyone.

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# EVALUATING PROFESSIONAL LEARNING COMMUNITIES AMONG SELANGOR SECONDARY SCHOOL PRINCIPALS IN THE ERA OF MALAYSIA MADANI

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**Abstract:** *This study evaluates the implementation of Professional Learning Communities (PLCs) among secondary school principals in Selangor through the lens of Malaysia MADANI, focusing on six core values: sustainability, prosperity, innovation, respect, trust, and compassion. The establishment of PLC among principals is regarded as a vital initiative to enhance the quality of instructional leadership and foster collaborative practices for the holistic development of schools. The evaluation was conducted using the CIPP Model, encompassing four key dimensions: Context, Input, Process and Product with the principals' job grade serving as a moderating variable. Using a quantitative survey design, data were collected from 160 principals and analyzed with SEM AMOS 24.0. Inferential analysis examined the influence of Context, Input, and Process on the Product dimension. The model demonstrated good data fit (RMSEA = 0.050, CFI = 0.980, TLI = 0.973, Chisq/df = 2.195). Findings revealed that the Input dimension did not significantly influence the Product dimension. However, both Context and Process showed significant positive effects on Product. These outcomes underscore the pivotal role of context, process integrity, and context-sensitive strategic support aligned with Malaysia Madani's innovation and inclusivity principles in bolstering collaborative leadership to enrich teaching and learning outcomes. Findings offer valuable insights for policymakers, especially the Ministry of Education Malaysia, in enhancing support mechanisms and advancing the MADANI agenda for a more inclusive, innovative, and human-centered educational system.*

*Keywords:* Professional Learning Community, PLC, CIPP Model, Malaysia MADANI, secondary school principals, Selangor

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## 1. Introduction

Professional Learning Communities (PLCs) have become a global benchmark for fostering continuous professional development, instructional leadership, and school improvement (DuFour & Eaker, 1998). In the Malaysian context, the adoption of PLCs aligns with the national vision of Malaysia MADANI, a framework introduced to instill values of inclusivity (*keterangkuman*), well-being (*kesejahteraan*), and creativity (*dayacipta*) in all aspects of public service, including education (Prime Minister's Department, 2023). School principals are pivotal in actualizing these values within school ecosystems. Their role as instructional leaders is essential in creating a collaborative culture that nurtures holistic student development and teacher professionalism.

This research was initiated following a widely discussed finding: a statistical analysis by the Ministry of Education Malaysia's Training Management System (SPLKPM) showed that the involvement of principals in PLCs at schools did not reach 100%. This data suggests that the implementation of PLCs in schools is at a moderate level, despite the government, through the Ministry of Education (KPM), having outlined national education goals and visions. If this situation is not addressed immediately, it will affect the effectiveness of leadership quality and management issues in schools (Nagaretnam & Mahmud, 2022). Following from this, the objective of this study is to assess the influence of the Context, Input, and Process dimensions on the Product dimension in the implementation of PLCs among secondary school principals in Selangor using the CIPP evaluation model while incorporating the core aspirations of Malaysia MADANI.

## **2. Literature Review**

### **2.1 Professional Learning Communities (PLCs)**

Under the umbrella of Continuing Professional Development (CPD), there are 13 initiatives that can be implemented to enhance the professionalism of school principals. PLCs is one of these initiatives. Within the context of CPD, PLCs is defined as a collaborative practice among dedicated educators who collectively set goals or build a vision and work together to achieve those goals (Ministry of Education Malaysia, 2017). This means that for teachers, the goal is to ensure more effective student learning to achieve good performance (Sims & Fletcher-Wood, 2021). For leaders and subject matter experts, the goal is to ensure that their fellow leaders and experts are consistently excellent and authoritative (Mohamad, Murad, & Omar, 2023).

This gives teachers and school leaders the opportunity to engage in continuous, lifelong learning (Jalet & Yunus, 2021). According to these guidelines, PLCs activities are evaluated by allocating 20 credit points, with five credit points for each best practice produced (Ministry of Education Malaysia, 2017). PLCs are defined as structured, collaborative networks within educational settings where educators collectively engage in ongoing learning to improve teaching and student outcomes (Stoll et al., 2006). DuFour and Eaker (1998) argue that PLCs must be characterized by a shared mission, collaborative teamwork, reflective inquiry, and a focus on results. In Malaysia, the Ministry of Education (2014) has endorsed PLCs as a key strategy in the *Pelan Pembangunan Pendidikan Malaysia 2013-2025* (Malaysia Education Blueprint), emphasizing continuous teacher development and school-based decision-making.

### **2.2 Role of Principals in PLCs Implementation**

School principals are instrumental in fostering a school culture that supports PLCs. They serve as instructional leaders, facilitators, and policy implementers. According to Harris and Jones (2010), successful PLCs require distributed leadership, trust, and structural support, all of which hinge on the principal's leadership style and commitment. In Malaysia, studies by Ahmad et al. (2017) and Hamzah et al. (2014) emphasize that principals' understanding of PLC principles significantly influences their ability to sustain collaborative professional growth among staff.

### **2.3 Malaysia MADANI Framework**

Malaysia MADANI is a value-driven framework introduced in 2023 to guide national transformation through six core values: sustainability, prosperity, innovation, respect, trust, and compassion (Prime Minister's Department, 2023). In education, creativity (*dayacipta*), inclusivity (*keterangkuman*), and well-being (*kesejahteraan*) are key to fostering equitable and

innovative learning environments. By embedding MADANI values into PLCs implementation, educational leadership can contribute to the broader goal of nurturing a future ready generation.

## 2.4 The CIPP Evaluation Model

The CIPP model (Stufflebeam, 1971) offers a comprehensive framework for evaluating educational programs:

- Context: Examines needs, environment, and policy alignment.
  - Input: Assesses resources, strategies, and organizational capacity.
  - Process: Reviews implementation fidelity and stakeholder involvement.
  - Product: Evaluates short-term and long-term outcomes.
- This model is increasingly used in evaluating complex educational reforms, including leadership development initiatives (Zhang et al., 2011).

## 3. Tables and Figures

**Figure 1**  
**PLC framework**



Sources : Institut Aminuddin Baki and Bahagian Pendidikan Guru

According to figure 1, under the umbrella of Continuing Professional Development (CPD), there are 13 initiatives that can be implemented to enhance the professionalism of teachers. KPP is one of these initiatives. Within the context of CPD, KPP is defined as a collaborative practice among dedicated educators who collectively set goals or build a vision and work together to achieve those goals (Ministry of Education Malaysia, 2017).

This means that for teachers, the goal is to ensure more effective student learning to achieve good performance (Sims & Fletcher-Wood, 2021). For leaders and subject matter experts, the goal is to ensure that their fellow leaders and experts are consistently excellent and authoritative (Mohamad, Murad, & Omar, 2023). This gives teachers and school leaders the opportunity to engage in continuous, lifelong learning (Jalet & Yunus, 2021).

## 4. Research Methodology

### 4.1 Research Design

This study employed a quantitative, descriptive research design using a structured survey based on the CIPP model. The instrument was validated by experts and tested for reliability (Cronbach's alpha = 0.87).

### 4.2 Population and Sample

The target population was all secondary school principals in Selangor. A sample of 160 principals was selected using stratified random sampling to ensure representation across job grades.

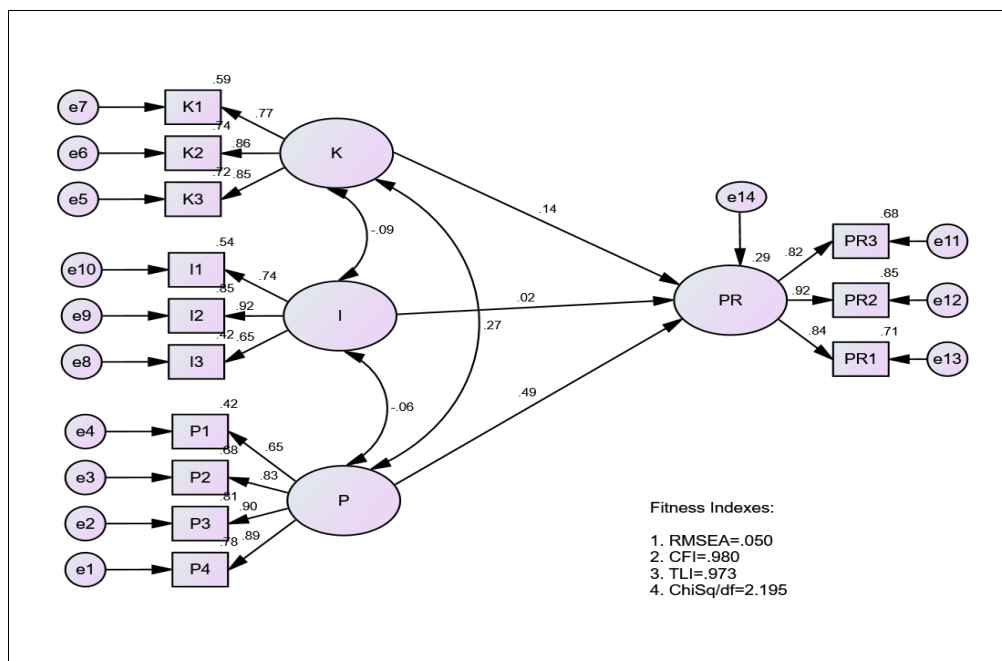
### 4.3 Instrumentation

The instrument used in this study was a structured questionnaire developed based on the four dimensions of the CIPP evaluation model: Context, Input, Process, and Product. A total of 94 items were designed to capture principals' perceptions of PLC implementation. The Context domain focused on environmental support and alignment with national education policies, while the Input domain measured the availability of resources, training, and institutional capacity. The Process domain assessed the execution of collaborative activities and leadership engagement, and the Product domain evaluated the outcomes and impact of PLCs practices on instructional leadership and school improvement. All items were measured using a 6-point Likert scale ranging from 1 (Strongly Disagree) to 6 (Strongly Agree), allowing for detailed analysis of the respondents' level of agreement and perception.

## 5. Results

*Figure 2*

*Structural Equation Model for Context, Input, and Process on Product*





The figure 2 shows that the structural model test for Context, Input, Process, and Product has met the proposed criteria. The criterion values for CFI and TLI exceeded the suggested value of 0.90 or greater, while the RMSEA value was 0.050 (less than 0.080) and the chisq/df value was 2.195 (less than 5). These study results mean that a good model fit has been achieved.

**Table 1**

***Regression coefficients for the structural equation model***

Product ←- Context	0.165	0.057	2.877	0.004	Significant at 0.01
Product ←- Input	0.017	0.047	0.356	0.722	Not significant at 0.05
Product ←- Process	0.491	0.050	9.766	***	Significant at 0.01

Table 1 shows the study's results indicate that the Product dimension is significantly influenced by the Context and Process dimensions in the implementation of PLC.

## 6. Discussion

This study has provided significant insights into the factors influencing the success of PLCs among secondary school principals in Selangor within the context of the Malaysia MADANI framework. The findings from the Structural Equation Model reveal that both the Context and Process dimensions are significant predictors of the Product dimension. This outcome aligns with previous research emphasizing the crucial role of environmental factors and implementation fidelity in program success.

The significant influence of the Context dimension suggests that a supportive environment, including clear policy directives and a conducive school culture, is paramount for effective PLCs implementation. This finding resonates with the Malaysia MADANI principle of innovation (*dayacipta*), as a supportive and forward-thinking context enables principals to creatively adapt and lead collaborative initiatives.

Conversely, the non-significant influence of the Input dimension on the Product dimension is a noteworthy finding. This result implies that while resources and training materials (Input) are provided, their availability alone does not guarantee positive outcomes (Product). The effectiveness hinges on how these inputs are utilized and integrated into the daily practices of the school leadership, which is captured by the Process dimension. This underscores the importance of the qualitative aspects of implementation over the mere provision of resources. The strong and significant influence of the Process dimension highlights that the quality of collaborative activities, leadership engagement, and reflective practices are central to achieving desired outcomes in PLCs. The effective execution of these processes, which embodies the core values of trust and collaboration in the MADANI framework, directly leads to improved instructional leadership and school performance.

## 7. Implications and Recommendations

The findings from this study highlight several key implications for policy and practice. Firstly, there is a pressing need for policy interventions by the Ministry of Education (MOE) to allocate

dedicated time, funding, and infrastructure for PLCs activities, particularly in under-resourced schools where principals often face limitations in implementing collaborative practices effectively. Ensuring equitable support across diverse school settings is essential for inclusive leadership development.

Secondly, leadership training must be prioritized. Principals should be equipped with focused professional development opportunities that emphasize distributed leadership and align with the core values of Malaysia MADANI particularly inclusivity (*keterangkuman*), well-being (*kesejahteraan*), and creativity (*dayacipta*). These values should be embedded in training modules to cultivate school cultures that support meaningful and sustained PLC engagement.

Additionally, the monitoring and evaluation mechanisms for PLC implementation should be institutionalized at the state and district education department levels. The CIPP evaluation framework provides a comprehensive and adaptable tool that can guide ongoing assessment and improvement efforts, ensuring that schools remain aligned with national education goals.

Lastly, it is crucial to consider job grade differences when designing support programs. Tailored approaches that account for principals' leadership experience, school size, and contextual challenges will ensure that the support provided is relevant and impactful. Differentiated strategies can enhance leadership capacity across all levels and contribute to a more effective and sustainable PLCs culture in Malaysian schools.

## 8. Conclusion

In conclusion, this study validates the importance of a supportive context and a well-executed process for successful PLCs implementation among principals. The findings offer valuable insights for policymakers at the Ministry of Education Malaysia to refine strategies for advancing the MADANI agenda. Future support mechanisms should not only focus on providing resources but also on fostering a culture that encourages collaborative processes and strengthens the contextual factors that enable principals to lead effectively in the spirit of inclusivity, innovation, and compassion.

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<b>Part A : RESPONDENT DEMOGRAPHICS</b>
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Profesor/ DR/ Tuan / Puan Please tick (√) the appropriate box

1	<b>Gender:</b>		Male		Female
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2	<b>Race</b>	1	Malay	
		2	Chinese	
		3	Indian	
		4	Others : Please State (.....)	

3	<b>Post Grade</b>	1	DG 44	
		2	DG 48	
		3	DG 54	
		4	JUSA C	

4	<b>School District</b>	1	Hulu Langat	
		2	Gombak	
		3	Hulu Selangor	
		4	Sabak Bernam	
		5	Klang	
		6	Kuala Selangor	
		7	Petaling Utama	
		8	Petaling Perdana	
		9	Kuala Langat	
		10	Sepang	

## PART B

### Item Evaluation

Please state your level of agreement with the statements below, indicating whether they represent the identified concept. Please use the following scale for your response. Thank you.

1	2	3	4	5	6
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**Strongly Disagree**

**Strongly Agree**

### Research Question

1. To what extent is the implementation of Professional Learning Communities (PLCs) among Selangor secondary school principals appropriate with the principles of Malaysia MADANI and the objectives of PLC from the Context Evaluation Dimension?

No Item	Statement	Agreement Scale					
		1	2	3	4	5	6
i) Malaysia MADANI Framework							
B1	The establishment of PLC among principals is a vital initiative to enhance the quality of instructional leadership in the era of Malaysia MADANI						
B2	The implementation of PLC in our school aligns with the national vision of Malaysia MADANI						
B3	PLC activities align with the core values of Malaysia MADANI: sustainability, prosperity, innovation, respect, trust, and compassion						
B4	The school culture supports the values of inclusivity (keterangkuman) and well-being (kesejahteraan) as key to fostering equitable and innovative learning environments						
No Item	Statement						
Objectives of Professional Learning Communities (PLCs)							
B5	I believe that all principals can learn and improve their leadership skills.						
B6	I always collaborate with other principals within my professional network.						
B7	I am focused on improving instructional leadership and fostering collaborative practices						
No Item	Statement						
B8	I believe that PLC is a strategy for continuous professional development and school improvement						
B9	The PLC framework helps to promote teacher professionalism and holistic student development						

### PART C

#### Item Evaluation

Please state your level of agreement with the statements below, indicating whether they represent the identified concept. Please use the following scale for your response. Thank you.

1	2	3	4	5	6
---	---	---	---	---	---

**Strongly Disagree**

**Strongly Agree**

#### Research Question

2. To what extent are the resources, training, and institutional capacity for PLC implementation from the Input Evaluation Dimension appropriate for the implementation of Professional Learning Communities (PLCs) among secondary school principals?

No Item	Statement	Agreement Scale					
		1	2	3	4	5	6
C1	I have access to sufficient resources to implement PLC activities effectively.						
C2	The Ministry of Education (MOE) provides adequate funding for PLC activities.						
C3	The school has a dedicated budget for PLC-related training and materials.						
C4	I have received sufficient training on the principles and implementation of PLCs.						
C5	The provided training for PLC aligns with my needs as a principal.						
C6	There is clear guidance from the district and state education departments on how to implement PLCs.						
C7	The PLC framework is well-defined and easy to understand.						
C8	Our school has adequate institutional capacity and support for PLC implementation.						

## PART D

### Item Evaluation

Please state your level of agreement with the statements below, indicating whether they represent the identified concept. Please use the following scale for your response. Thank you.

1	2	3	4	5	6
---	---	---	---	---	---

**Strongly Disagree**

**Strongly Agree**

### Research Question

To what extent do the execution of collaborative activities and leadership engagement from the Process Evaluation Dimension affect the implementation of Professional Learning Communities (PLCs) among Selangor secondary school principals?

No Item	Statement	Agreement Scale					
		1	2	3	4	5	6
D1	I actively engage in collaborative activities with other principals.						

D2	Collaborative activities help me in improving my instructional leadership.						
D3	We regularly engage in reflective inquiry and discussions on school management issues.						
D4	I feel comfortable giving and receiving feedback during collaborative sessions.						
D5	Our PLC sessions focus on shared goals and a shared mission.						
D6	The leadership style in our PLC is distributed and shared among members.						
D7	I provide structural support and a conducive environment for PLC implementation in my school.						
D8	The PLC activities are implemented with high fidelity as intended by the guidelines.						

## BAHAGIAN E

### Item Evaluation

Please state your level of agreement with the statements below, indicating whether they represent the identified concept. Please use the following scale for your response. Thank you.

1	2	3	4	5	6
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**Strongly Disagree**

**Strongly Agree**

### Research Question

To what extent does the implementation of Professional Learning Communities (PLCs) have an impact on instructional leadership and school improvement from the Product Evaluation Dimension among secondary school principals?

No Item	Statement	Agreement Scale					
		1	2	3	4	5	6
E1	PLC implementation has enhanced the quality of instructional leadership in my school.						
E2	Our PLC activities have led to improved teaching and learning outcomes.						
E3	The collaborative practices in our PLC have fostered the holistic development of our school <sup>9</sup> .						
E4	I have gained valuable insights into strategic support aligned with Malaysia MADANI's principles.						
E5	The PLC has helped me to strengthen a collaborative leadership culture						

E6	My involvement in PLC has resulted in a more innovative and human-centered educational system in my school.						
E7	The PLC has contributed to my professional growth as a school leader.						
E8	Overall, the implementation of PLCs has had a positive impact on our school's performance.						
E9	The PLC has helped me to better align school management with the core values of Malaysia MADANI.						
E10	My participation in PLC has resulted in greater trust and respect among staff.						
E11	I am able to more effectively nurture teacher professionalism through collaborative PLC practices.						
E12	The PLC has provided a clear mechanism for evaluating and improving school-based decision-making.						
E13	Through the PLC, I have become better at fostering an inclusive (keterangkuman) and well-being (kesejahteraan) environment.						

E14	The outcomes of our PLC sessions have directly contributed to solving key school challenges.						
E15	PLC has empowered my school to contribute to the broader goal of nurturing a future-ready generation, as envisioned by Malaysia MADANI.						



# INTEGRATING INSTRUCTIONAL AND DIGITAL LEADERSHIP AS A CATALYST FOR TRANSFORMATIONAL CHANGE IN SECONDARY EDUCATION

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**Abstract:** *This study explores the integration of instructional and digital leadership as a catalyst for transformational change in secondary education. The purpose of the study is to investigate how these two dimensions of leadership, when aligned, can enhance teaching and learning, empower educators, and accelerate organizational change within schools. A quantitative research design was employed, utilizing a survey method to collect data from secondary school teachers. The survey instrument was adapted from validated frameworks of instructional leadership, digital leadership, and transformational change, and applied to a stratified sample of 200 respondents. Data were analyzed using descriptive statistics, Pearson correlation, and multiple regression analysis to examine the relationships between the variables. Findings indicate that the integration of instructional and digital leadership has a significant positive influence on transformational change, with digital leadership emerging as a critical enabler for instructional innovation. The study concludes that effective synergy between these two leadership domains can create a sustainable model for school transformation. Implications highlight the importance of professional development, digital competency, and leadership practices that align with 21st-century education demands.*

**Keywords:** *(Instructional Leadership, Digital Leadership, Transformational Change, Secondary Education, Educational Innovation).*

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## BRIDGING CULTURE AND LEADERSHIP: STRENGTHENING SCHOOL EFFECTIVENESS IN ORANG ASLI COMMUNITIES

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***Abstract:** In schools where Orang Asli children are the majority, the headmaster's role is more than handling administration. The most important task is to respect and value the culture and traditions of the community. Without this respect, it is hard to gain trust or to encourage real involvement from teachers and parents. This study explores how culturally responsive leadership affects school effectiveness. Data were gathered from 450 teachers in seven states of Peninsular Malaysia using multistage cluster sampling. The results, analysed through structural equation modelling, show that schools led by principals with high cultural responsiveness perform better overall ( $\beta = 0.457$ ,  $p < 0.001$ ). The benefits appear in several ways. Teachers become more committed, students take part more actively in learning, and the community shows stronger trust in the school. These are not only statistical results but also reflect daily practice in schools where leaders respect culture, support inclusive teaching, and maintain close links with the community.*

*Keywords:* Culturally Responsive Leadership, School Effectiveness, Educational Leadership, Cultural Diversity in Schools, Community Engagement.

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## LEADING WITH VALUES: EXPLORING ETHICAL LEADERSHIP PRACTICES AMONG SCHOOL PRINCIPALS

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**Abstract:** *Ethical leadership is crucial in forming effective schools with high moral values and well-behaved students. This qualitative study investigates how school principals emphasize ethical leadership, which is an essential component of values-driven leadership (VDL), in their daily conduct. Data were collected from five school principals in Perak, Malaysia, in the form of semi-structured individual interviews. Four key themes were derived from the thematic analysis: ethical integrity in decision-making, student-centred leadership, positive school culture, and community engagement. Findings revealed that the principals strongly believe ethical integrity in decision-making fosters trust and enhances student well-being. They also noted that student-centred leadership promotes academic performance, while a positive school culture embedded in transformational leadership escalates teacher morale and overall school performance. School success is attributed to strong community engagement and stakeholder collaboration. This study emphasizes the importance of ethical leadership in educational institutions and provides recommendations for ethical leadership development.*

**Keywords:** *Values-Driven Leadership, Ethical Leadership, Ethical Integrity, Community Engagement, School Culture.*

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### Introduction

School leaders are regarded as exemplars of moral values and ethical behaviour in every society, and they are therefore expected to uphold high ethical standards in their actions. Educational leadership goes beyond administrative duties; it is a values-driven role that shapes school culture, impacts student outcomes, and fosters teacher engagement. School heads play an important role in nurturing and shaping educational environments through leadership skills and ethical decision-making.

Values-driven leadership is crucial in fostering efficiency and effectiveness of school development and transformation. Vikaraman et al. (2020) stressed that quality leadership plays a crucial role in determining teacher motivation, effectiveness, and practices. Thus, school principals, as the leaders and supervisors of the entire school, must practice appropriate leadership styles when collaborating with teachers to further enhance student success (Kaduma, 2024). Ethical leadership has become recognized and prominent as an effective approach in the education world. It has emerged as a highly effective style for promoting reform, change, and innovation across various fields, including education (Khan and Bauman, 2020; Treviño et al., 2000).

Schools embody diverse cultures; thus, the school leaders must shoulder a huge responsibility to act fairly to maintain balance and harmony. Diversity, however, often create conflict in values. When school leaders fail to uphold ethical values, the consequences often reflect in students' behaviour and teachers' performance (Setlhodi, 2022). As the major stakeholders of

schools, teachers and principals are always expected to create a positive environment and culture to sustain effective teaching and learning. Moreover, educational leaders are expected to be exemplary icons of strong ethical standards.

Although values-driven leadership (VDL) is becoming more widely discussed, gaps remain in understanding how school principals operationalize their values in diverse educational settings. This is partly because there are limited empirical studies addressing the values in school context. Much of the existing research has concentrated on the business and private sector contexts (Tirmizi, Williams & Tirmizi, 2023). Previous research has largely focused on the theoretical aspects of value-based leadership or its impact on teacher performance and student outcomes. However, there is limited empirical evidence exploring how principals navigate the complexities of VDL particularly in balancing ethical integrity, decision making, community engagement and student-centred approach.

Addressing these gaps is crucial for developing a more comprehensive understanding of values-driven leadership in education. This qualitative study therefore explores principals' perceptions of values instilled in their leadership practices and examines how these values contribute to well-being, a supportive school environment, and optimal functioning of their organisation.

### **Literature Review**

Leadership crisis is on the rise; whereby unethical practices are taking place in modern workplaces causing their downfall. Recent research has explored the importance of values-driven leadership in education, emphasizing its influence on school culture, teacher dedication, and overall school effectiveness. Leadership practitioners and scholars began to realize the importance of having strong leadership values, which are moral and ethical, for ensuring organizational survival (Sumanasiri, 2020).

The unethical and immoral behaviours of organizational leaders that have led to massive corporate scandals in the 20<sup>th</sup> century have made leadership researchers search for a new dimension of leadership (Sumanasiri, 2020). Various organizations in Malaysia too have been dealing with unethical leadership in the past decades and still ongoing, with news regarding abuse of power, greed, bribery, dishonesty and mismanagement popping out now and then as headlines very frequently. Mega-scandals such as 1MDB, FELDA, MARA, SRC International, Sabah Water Department, Tabung Haji and many more in line showcased Malaysia as a kleptocratic country (National Centre for Governance, Integrity, and Anti-Corruption, 2019-2023). We are led to ponder, how could respectable and well-educated human beings engage in such behaviour?

Regarding these unethical practices, the reform in education system was called for to instill moral values in the young Malaysians, thus nipping in the bud the blue-collar crimes via subjects like Civics and Moral fortified with anti-corruption elements. The new syllabus alone can't make magic work. The leaders who lead the mass should possess all the good qualities a human should have to produce ethical back bone of Malaysia. Thus, the need for values-based leadership grew immensely. Leaders with ethics showcase appropriate conduct through personal actions and interpersonal relationships. The most effective leaders are honest and transparent with their teams; and their words match actions consistently on and off the workforce (Gleeson, 2021).

Value-based leaders have a strong belief that everyone in the organization is equal to them, thus implying that every employee holds as much value as they do to the organization. They practice fairness and justice by avoiding favoritism in either rewarding or handling issues, treating people justly and reasonably, listening without being judgmental or discriminating. VDL emphasis on keeping and fulfilling promises, aligning on what is said and what is done, being true and authentic to the existing code of beliefs or worldview, being loyal, sincere and trustworthy (Kaduma,2024).

Leaders who practice values-based approach, will never satisfy with the status quo; they constantly make changes and innovations toward betterment for the sake of the organization rather than personal goals and achievements (Gleeson, 2021). Leaders who are value-driven are relied upon (Setlhodi, 2022), respected and valued, thus their team will render full support for the betterment of the organization.

### **Ethical Leadership**

Ethical leadership is a subset of values-based leadership. Some dimensions of ethical leadership are practiced “unconsciously” in other school leadership styles such as instructional or transformational (Hendrikz & Engelbrecht, 2019).

The definition of ethical leadership according to Brown et al. (2005) refers to “the demonstration of normatively appropriate conduct through personal actions and interpersonal relationships, and the promotion of such conduct to followers through two-way communication, reinforcement, and decision-making” (p.120). Ethical leadership comprises of two dimensions: the leaders as a moral person and a moral manager (Treviño et al.,2000). The moral person possesses traits such as integrity, honesty, trustworthiness and concern for people and society by exhibiting openness and fairness. A moral manager, on the other hand, role-models ethics and values through words and deeds and abide by ethical standards when handing down rewards or disciplinary actions towards the followers for their conducts.

Ethical leadership enhances positive attitudes and behaviours of followers, including performance, job involvement, and affective commitment (Khuntia & Suar, 2004, Brown & Treviño, 2006); and subordinates’ green work behaviour (Ahmad et al., 2021). Ethical leadership also has direct implications for shaping the behaviour of followers, which may have implications for commitment, innovation, and empowerment (Odeneye, 2017).

In accordance, Sumanasiri (2020) provided a comprehensive literature review on value-based organizational leadership, encompassing various leadership styles such as transformational, ethical, spiritual, responsible, servant, and authentic leadership. The review emphasized that these leadership approaches, grounded in moral and ethical values, are essential for enhancing organizational performance and addressing contemporary challenges in educational settings.

Collectively, these studies affirm that ethical leadership is integral to fostering positive school environments, enhancing teacher commitment, and promoting effective educational practices. Leaders who integrate their personal values into their leadership approach can effectively navigate challenges and drive meaningful improvements within their schools.

### **Methodology**

A qualitative research approach was employed to gain in-depth insights into school leaders' leadership practices. Five school principals from Perak, Malaysia were selected based on their leadership experiences of more than 5 years, to participate in this semi-structured interview. The interview protocol explored the understanding of school leaders about ethical leadership and how they practice at school. The composition of the school leaders is as follow: Principal 1-Principal 4 (P1-P4) from National Secondary School and Principal 5 (P5) from National Type Chinese Secondary School. These interviews were audio recorded with the permission of the participants. The data collected were transcribed, analysed using thematic analysis, allowing for the identification of recurring themes and patterns.

## Results and Discussion

Four main themes emerged from the thematic analysis. Each of the participants was coded as "P1" "P2" "P3" "P4" and "P5".

### 1. Ethical Integrity in Decision-Making

Most leaders emphasized ethical integrity as the foundation of their leadership. They highlighted the importance of fairness, honesty, and transparency in decision-making.

P1 stated that *"Every decision I make is in the best interest of my students, teachers and the school community as well. ....sometimes it will be hard...meaning that I must make tough decision which some won't like...but I always go for the best which will make just to most of them"*. Similarly, P3 added that:

*"I always believe in leading by example...meaning that if I expect honesty and respect from my staff, I must show the same to them. For example, when I hold regular meetings with my teachers to discuss their problems and some other issues...I always make sure to listen carefully to what they are saying before making decision....this make them to buy-in. ....mostly they will be open with me, and they come again for suggestions"*. This view is also shared by P5 who mentioned that:

*"...when you are consistent in making decisions, it will build long-term trust in the stakeholders. I always make sure my approach is consistent when I have to make tough decision on matters related to disciplinary issues, money matters or curriculum. ...in the end the students, teachers and school community believe you and respect you as well. In this way they give more support and collaborate well in school matters"*.

These actions reflect the core of idealized influence, whereby transformational leaders act as ethical role models, making strong principled decisions even under great duress. By consistently embodying integrity and fairness, these principals earn the respect and trust of their subordinates and stakeholders which are the hallmarks of Transformational leadership (Bass & Steidlmeier, 1999).

Ethical leadership fosters trust among teachers, students, and parents, leading to a more cohesive school environment. An ethical leader who is concerned towards the best interests of subordinates, openness to input, fair decision making and actively managing morality will be looked upon as a role model (Engelbrecht, Heine & Mahembe, 2017). Trust in a leader is an

important element of ethical leadership towards job attitude and job performance (Ng & Feldman, 2015).

When the leaders constantly demonstrate ethical traits, employees start trusting them and perform better in their assigned tasks (Vikaraman et al., 2018). Fullan (2023) emphasized that the ability to lead ethically is essential for maintaining trust, supporting staff and ensuring that the students need remain at the forefront of decision-making. Furthermore, many positive outcomes of an organization are influenced by the trust the followers have towards their leaders which include job performance, goal commitment, and subordinates' behaviour conduct that benefits the organization and job satisfaction.

An ethical leader should not wear the autocratic hat when it comes to decision-making. He should involve others in the decision-making process for the realization of organizational objectives and goals.

## **2. Student-Centered Leadership**

A strong commitment to student well-being and success was a recurring theme. The school leaders consistently placed students at the heart of their leadership strategies. They implemented policies that promoted inclusivity, mental health support, and academic excellence.

P2 stated that *"I always believe, if our leadership does not prioritize students, then we are failing in our fundamental responsibility. I have always believed that leadership is not about being in charge but about taking care of those in your charge. If we are not actively creating an environment that supports students' emotional, mental, and academic growth, then we are not fulfilling our duty. This means making choices that might not always be the most convenient or popular, but they are the right ones for our students' well-being. The ultimatum is...students should always feel that the school is a safe place, one that values them as individuals with unique needs and strengths"*.

Similarly, P3 added that *"I always ask myself, 'How will this decision impact our students?' before taking any action....whether it's about policy changes or the allocation of resources, I will always pause to consider its effect on them. They are always in my mind in everything I do, and if a decision doesn't improve their learning experience or support their overall well-being, then I need to reconsider it". For example...we have recently revised our school's discipline model. By shifting to a more empathetic and supportive method, we are investing in their long-term success, both academically and personally"*.

Additionally, the school leaders mentioned about the importance of creating a good environment for the students to thrive well in the school surroundings. P5 stated that *"Students should feel seen and heard in their schools. This means more than just offering academic programs or extracurricular activities; it's about fostering a school culture where students feel their voices are valued, and they are respected as individuals"*, and P2 added that *"We have implemented regular feedback sessions whereby students can openly share their thoughts, concerns, and ideas for improving the school environment. They are encouraged to do so by posting their thoughts in the students' corner, surveys, or informal discussions. In this manner, we want students to know that their voices matter in shaping their educational experience"*.

*This is further stressed by P1 that “Leadership is about making sure that every student, regardless of their background, abilities, or challenges has a fair opportunity to succeed. We focus a lot on inclusivity and mental health because these areas are often where they feel most neglected”.*

These actions align with individualized consideration which is a key element of transformational leadership, wherein leaders attend to the individual needs and development of students. Additionally, these leaders showcase inspirational motivation by practising student-centred vision and emphasizing on inclusive well-being which indicate that these leaders set a compelling moral direction for their schools.

Ethical leadership acts as both a source of support and a model for expected behaviours, which can influence teachers' interactions with students. When educators feel valued and trusted, they are more likely to demonstrate these qualities in their classrooms, creating a positive learning environment where students feel safe to express themselves and actively participate. School leaders who emphasized on student well-being improves academic outcomes by creating inclusive and supportive learning environments.

### **3. Fostering a Positive School Culture**

The third major theme was the deliberate effort to create a positive, values-driven school culture. The school principals emphasized collaboration, respect, and a sense of belonging within the school community. Initiatives such as professional development for teachers, student leadership programs, and open communication channels with parents were highlighted as key practices in fostering a supportive school environment.

P4 remarked that *“A positive school culture doesn’t happen on its own; it requires intentional leadership and a shared vision. From the very beginning, we worked together to create a culture where collaboration, respect, and mutual support are at the heart of everything we do”*. On the same basis, P5 mentioned that *“It’s not just about merely having a set of values posted on the wall for the sake of showing it to the public, it’s about living those values every day through the actions of everyone in the school. We set clear expectations for behaviour, communication, and engagement, and we make sure that all stakeholders are part of the process. The important practice has been professional development for teachers, where we focus on building strong relationships, not only within the classroom but throughout the entire school community”*.

In this context, P2 stated that *“When teachers collaborate effectively, they encourage the same behaviour in students. In the long run, it opens new ways for them to learn from one another, growing professionally in a positive and supportive school environment. Encouraging teacher collaboration and student engagement makes our school a community rather than just an education organization. One of the biggest changes we have made so far is shifting the focus from individual success to collective success”*.

Similarly, P3 added that *“When the teachers collaborate and share best practices, they not only grow as professionals but also set an example for our students. Collaboration fosters a sense of belonging because it shows that no one is left alone in their efforts. We have also made it a point that students should have leadership opportunities, either through peer*



*mentoring, or classroom responsibilities. We strongly believe that when students have a stake in the school's culture, they take ownership and are more engaged”.*

P4 further added that *“When students are given more authority in voicing out their views, they feel like active participants in their learning and in shaping the environment around them. This engagement doesn't just happen in the classroom, but it extends to extracurricular activities and school-wide initiatives that encourage students to contribute positively to the school community. The proof is our students have excelled more in curriculum and co-curricular activities in the past three years compared to six years ago”.*

This notion is also shared by P1 as he stated that *“When staff, students, and parents feel valued, they contribute positively to the school's success. I've always believed that a thriving school culture starts with people feeling appreciated and respected. If staff feel supported and empowered, they are more likely to bring their best selves to their work. Similarly, when students feel like they matter, whether it's through their academic achievements, their personal growth, or their participation in co-curricular activities, they become more responsible in their own success. And when parents are actively involved in school related matters, it strengthens the connection between home and school, thus creating a stronger foundation for student achievement. Our leadership team has worked hard to build open communication channels with parents, ensuring they feel included in the decision-making process and that their concerns and ideas are heard”.*

The deliberate cultivation of shared values and collaborative culture reflects inspirational motivation, which is a key component of transformational leadership. The principals here articulate a clear, values-based vision that inspires collective ownership. On top of that, by living their values every single day, they demonstrate idealized influence which reinforces ethical behaviour in their organization.

Ethical leaders infuse moral principals into daily actions (Toytok and Kapusuzoglu, 2016) which fosters trust and a positive environment thus setting an example for the school community to be truthful and honest in their day-to-day activities. Effective ethical leadership is built on pillars of integrity, transparency and resilience (Woods, 2020) which pave ways for a positive school culture. The school environment becomes positive and conducive when the leaders consistently place the welfare of pupils and teachers at the forefront, have good relationship with the parents and community by emphasizing on shared values and effective communication thus improving teacher morale, student engagement and parents' involvement.

#### **4. Community Engagement and Stakeholder Collaboration**

Another emerging theme was the emphasis on engaging with the broader community and collaborating with stakeholders, including parents, local organizations, and policymakers. School principals highlighted the importance of transparent communication and collective decision-making to ensure alignment between school goals and community expectations.

P4 shared that *“A strong partnership with parents and the community enhances student learning and well-being. I've always believed that when the school and the broader community work together, the students benefit hugely. Parents are a crucial part of the educational process because they know their children better than anyone else and can provide insights that help us support their learning and development. My team has put in a lot of effort to build strong, open lines of communication with parents, whether through regular newsletters, parent-*

*teacher meetings, or informal meetings. The more parents feel their voices are heard and taken into consideration, the more invested they are in their child's education”.*

Additionally, P2 stated that *“But it's not just about keeping parents informed; there's more to it. It's about actively listening to their views and concerns and involving them in decision-making. When parents feel connected to the school matters, they become more involved in supporting initiatives that promote their children's social and emotional well-being. That sense of partnership extends to the local community, too. By collaborating with local organizations, we can tap into additional resources and opportunities that enrich the students' educational experience, whether it's academic or extracurricular programs”.*

Similarly, P5 added that *“Engaging with local businesses and organizations provides additional resources and opportunities for our students. One of the most rewarding aspects of my leadership has been the opportunity to build relationships with local businesses and community organizations. These collaborations provide our students with experiences that extend beyond the classroom learning and help them connect their learning to real-world applications. For example, we've partnered with small medium enterprises to provide fundings for green the environment and save the animals projects. These partnerships not only offer valuable learning opportunities but also show our students how their education is connected to the community”.* P2 also strongly believe that *“Collaborating with the external organizations allows us to bring in experts and resources that we might not have access to otherwise, whether it's in the form of guest speakers, workshops, or even donations of supplies and equipment.*

In accordance with this, P1 added that *“...collaboration with external stakeholders strengthens our educational impact. It's crucial to recognize that the success of a school is not just merely about what happens within its walls. We are part of a larger ecosystem, and the support and involvement of external stakeholders are essential for our students' success. This type of collaboration also helps us stay informed about local issues that may affect our students. In turn, we can adapt our educational programs to better prepare students for what lies ahead. But... collaboration also involves transparency and communication. We make sure to update our community regularly about the challenges we face, the progress we have made, and the areas where we need support. By being transparent, we build trust and ensure that everyone is on the same page”.*

These leaders' engagement with parents, policymakers and the larger community echo the intellectual stimulation component of Transformational Leadership Theory, whereby they search for creative ways to integrate external insights into school development. Moreover, their transparent and participatory leadership style is a strong example of inspirational motivation, as it aligns school and community under a shared moral and development vision.

Families and community partners are the ever-helping hands of schools if engaged wisely. Thus, ethical leaders could always engage with these partners in ups and downs if they practice transparency and instil trust in these bodies. Effective ethical leaders, apart from listening to what the community members say, have the tendency to observe matters from their perspective and act accordingly.

Schools with strong community engagement communicate openly about their goals and actions; and not forgetting updating them about the challenges and setbacks regularly. Ethical

leaders create a sense of collective responsibility by letting the community members and stake holders play a crucial role in addressing local issues and lead the initiatives. In short, leaders should ensure the community's voices are heard, address their needs and let them participate in discussions and problem solving for the best interest of the students and the organization.

## Conclusion

This study explored the school principals' perceptions regarding values espoused by their leadership practice . It highlights the crucial role of ethical leadership in fostering integrity, student-centred leadership, positive school culture, and community engagement within educational institutions. These dimensions collectively contribute to effective school leadership, improving student outcomes, enhancing teacher motivation, and strengthening institutional cohesion.

The findings of this study are strongly aligned with Transformational Leadership Theory (Burns, 1978; Bass, 1985), which emphasizes moral leadership, vision, and follower development. The principals' actions strongly anchored in ethical integrity, student-centredness, collaborative culture, and community engagement demonstrate a strong enactment of values-driven leadership, reinforcing the value of transformational leadership in the Malaysian school context.

Ethical integrity remains a fundamental principle in school leadership. Findings suggest that school leaders who uphold transparency, fairness, and moral responsibility cultivate an environment of trust and respect, which significantly enhances organizational effectiveness. In the Malaysian school context, integrity is very much embedded in the leaders' spirituality whereby they often relate integrity to the religious law and trust in God. Decision-making is considered as a very important matter for an ethical leader. All decisions should be made transparently in the best interest of the students, teachers and the larger community.

The prioritization of student welfare and academic success emerged as a defining trait of values-driven leadership. Leaders who embed student-centred policies create inclusive, supportive, and high-achieving educational environments. School leaders should lead by example, showcase ethical practices, enhance communication about ethics and rewarding ethical conduct to create a positive school environment and encourage teachers' and students' engagement in honest behaviours.

Strong partnerships between educational institutions and their surrounding communities are essential for sustainable school development. Effective stakeholder collaboration with parents, policymakers, and local organizations enhances the quality of education and ensures a supportive learning ecosystem.

## Recommendations

To further develop ethical leadership within educational settings, policymakers, researchers, and practitioners should,

- **Enhance leadership development programs** with a stronger focus on ethical decision-making and moral leadership to produce human capital instilled with honesty and integrity.

- **Implement structured mentorship initiatives** to support emerging school leaders in navigating complex educational landscapes.
- **Encourage reflective leadership practices** that promote continuous professional growth and adaptive learning.
- **Strengthen transparent community-school partnerships** to foster ethical collaborative approach to educational governance and student well-being

Future research should expand on this study by exploring how ethical leadership manifests in various educational settings and cultural contexts. Longitudinal studies assessing the sustained impact of ethical leadership on institutional performance would provide deeper insights into its long-term effectiveness.

By consistently improving and implementing values-driven leadership models, educational institutions can maintain ethical integrity, boost student success with high moral values, foster a progressive learning environment that collaborates with the community to sustain academic excellence and produce human capital with high integrity that will drive the nation towards excellence.

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# INFLUENCER LEADERSHIP, PERFORMANCE, AND ISLAMIC DEDICATION: REALIZING EXCELLENT MADRASAHS AS SUPPORTERS OF *EDUCATION FOR SUSTAINABLE DEVELOPMENT* (ESD) AT MA'ARIF EDUCATIONAL INSTITUTIONS IN MALANG

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**Abstract:** *The leadership of madrasah principals, teacher performance, and dedication are of particular concern in today's education world. All three play an important role in achieving quality education goals for sustainable development in this digital age. Influencer leadership, Islamic performance, and Islamic dedication can be supporting factors in realizing quality Islamic education. Excellent madrasahs are one of the vehicles for producing an intellectual and characterful Islamic generation. This study aims to examine and assess the extent of the influence of influencer leadership, Islamic performance, and Islamic dedication on the formation of excellent madrasahs in supporting Education for Sustainable Development (ESD) at the Maarif Education Institution in Malang Regency. The research approach uses a quantitative approach with a correlational type. The population in this study were teachers at private Madrasah Tsanawiyah in Malang Regency, which are under the guidance of the Maarif Institute in Malang Regency, totalling 27 madrasahs in East Java Province. The sampling technique used was purposive sampling. Data collection was carried out using a questionnaire measured using a Likert scale. The validity test was calculated by comparing the *r*-table value at a significance level of 0.05 with the degree of freedom ( $n-2$ ). The reliability test was conducted using Cronbach's Alpha. Data analysis used Partial Least Square to analyse the Out Model, In Model, and Bootstrapping. SEM analysis was used as a benchmark in the research conclusion. The results showed that influencer leadership had a significant positive effect on the formation of excellent madrasahs. Islamic performance and Islamic dedication also had a significant positive impact on the formation of excellent madrasahs. Another finding was that influencer leadership had an effect on Islamic performance and Islamic dedication in forming excellent madrasahs in supporting Education for Sustainable Development (ESD).*

*Keywords: Influencer Leadership, Islamic Performance, Islamic Dedication, Excellent Madrasah, ESD*

## Introduction

The era of globalization requires Islamic educational institutions to be adaptive, creative, and innovative. One innovative program that can be implemented in Islamic Educational

Institutions is to strive for synergy between all elements of the institution to improve the efficiency, effectiveness, productivity, and accountability of the performance of those involved in education. The quality of education remains an important part of achieving the goals of National Education. National Education has the main objective of educating the nation<sup>1</sup>. In the context of Islamic education, Islamic schools and madrasas have the heavy task of creating a generation that is ready for the future in accordance with the objectives of *the Sustainable Development Goals* (SDGs). Schools and madrasas should not only focus on the quantity of students but must also be competitive and have a culture of competition in order to improve performance and shape character at the global level<sup>2</sup>. Madrasahs that have competitive advantages and are able to be competitive and have a competitive culture are expected to be able to equip students to face life sustainably by achieving success in this world and salvation in the hereafter. Primary and secondary education has a strategic role in the era of globalization. Education can shape quality, innovative, and competitive human resources while contributing to the achievement of global development goals (SDGs)<sup>3</sup>. Of the 17 sustainable development goals, quality education is the fourth goal that has been set and must be achieved globally. *Education for Sustainable Development* (ESD) is a key pillar in improving the quality of education to achieve global sustainable development by 2030.

Quality education is expected to be able to alleviate poverty, reduce inequality, promote gender equality, provide decent jobs and balanced economic growth, and protect the environment consciously<sup>4</sup>. The implementation of SDGs in Indonesia can be realized and pursued earnestly, one of which is by building and creating excellent Islamic schools or madrasas. These excellent madrasahs can later become model madrasahs and reference madrasahs. Excellent madrasahs can synergize with other madrasahs, both in their immediate environment and in different regions, so that they can jointly achieve better quality education with a higher category/status. Not only that, the formation of organizational culture and the working climate of madrasahs are also supporting factors for successful quality education. One aspect that can build an excellent school is the involvement of a leader in managing the institution properly, purposefully, and with good social skills. School leaders who are digitally literate and have many brilliant ideas are increasingly recognized and needed by educational institutions<sup>5</sup>. Such leaders have the ability to inspire and encourage the holistic development of the entire school community (teachers, educators, and students) to face the changes of the 21st century. Educational leaders in this era face the challenge of becoming agents of change and being ready

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<sup>1</sup> Preamble to the 1945 Constitution, fourth paragraph. Text of the 1945 Constitution, Jakarta

<sup>2</sup> Mario Emilzoli, 2021. *Infusion of Education for Sustainable Development in the Micro Curriculum of Integrated Thematic Learning Courses*. Indonesia University of Education. repository.upi.edu. library.upi.edu, p. 1

<sup>3</sup> Indira Kartika Rahayu, 2021. *Implementation of Education for Sustainable Development (ESD) and Achievements of Students' Life Skills at Independent Adiwiyata School*. Indonesia University of Education | repository.upi.edu | perpustakaan.upi.edu

<sup>4</sup> J. Sachs et al., 2019. "Six Transformations to Achieve the Sustainable Development Goals," *Nature Sustainability*, 1–10, <https://doi.org/10.1038/s41893-019-0352-9>.

<sup>5</sup> Wakhid Nuryanto, Tri Joko Raharjo, and Titi Prihatin, (2020) *"The Leadership Strategy of Madrasah Head in*

with various solutions to solve problems so that they are trusted by all their subordinates and students, thereby advancing the schools they lead and achieving quality education<sup>6</sup>.

This quality education is one of the main objectives of the WHO program known as *Sustainable Development Goals* (SDGs). The fourth pillar of the SDGs is *Education for Sustainable Development* (ESD), which is a form of follow-up to the Sustainable Development Goals that can be considered as a driver for achieving the Sustainable Development Goals in the field of education. Educational institutions, both schools and private madrasas, face challenges that must be addressed immediately, namely how Islamic educational institutions can compete, maintain, and improve their quality from year to year. The quality of education will be optimally achieved if all supporting components within the school work together to make it happen<sup>7</sup>.

The important factors after leadership are performance and dedication. The performance and dedication of the principal, teachers, and educational staff are important factors in achieving the quality of education that the institution aspires to. Research by Kapur I (2019) explains that great schools place students at the center of the design process, focusing on holistic outcomes that support academic achievement and psychosocial well-being. They encourage creativity, critical thinking, and personal growth, preparing students for future success and social contribution. In line with previous research, Mujtahid (2020) also states that the formation of excellent madrasas in Islamic educational institutions has several important components, namely (1). An effective organizational culture and excellent climate (reflected in its human resources, including educators, educational staff, and students), (2). Complete facilities and adequate resources to support graduates who are knowledgeable, skilled, and technologically competent (3). Spiritual strength (faith and/or Islam), and (4). Shaping individuals with noble personalities and high dedication. Research by Suci Hidayati et al (2024) entitled "The Influence of *Influencer* Leadership, Digital Transformation and Social Climate on Improving Teacher Performance in Building Excellent Madrasahs" with a quantitative approach and using SEM analysis tools also shows that (1) there is a significant positive influence between *influencer* leadership and improving teacher performance; (2) there is a significant positive influence between digital transformation and the improvement of teacher performance, and (3) there is no significant positive influence between social climate and the improvement of teacher performance<sup>8</sup>. This means that the role of *influencer* leaders in this digital era can have a positive influence on improving teacher competence and individual behavior in carrying out

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<sup>6</sup> Li, X. (2020). Transforming Our World: The 2030 Agenda for Sustainable Development: An Appeal for Global Cooperation in Building a Green Civilization. *Green Civilization*. [https://doi.org/10.1007/978-981-15-7812-0\\_2](https://doi.org/10.1007/978-981-15-7812-0_2).

<sup>7</sup> Mujtahid, (2020), Development of Madrasah and Leading Islamic Schools. *el-Hikmah Journal*, Faculty of Tarbiyah, UIN Malang

<sup>8</sup>Suci Hidayati, Munirul Abidin, Aini Rizqoh, & Shofhatul Maulidiyah Hasanah. (2025). Assessing the Influence of Influencer Leadership, Digital Transformation and Social Climate on Improving Teacher Achievement in Building Excellent Madrasahs. *International Journal Of Social Science Humanity & Management Research*, 04(01), 186–191. <https://doi.org/10.5281/zenodo.14716106>



work in institutions. Furthermore, referring to the research by Santi Auliana et al. (2023), which was conducted using data analysis using Partial Least Square in analyzing the External Model, Internal Model, and Bootstrapping, the results show that (1) the leadership of the madrasah principal has a significant positive effect on work motivation, (2) the work environment has a significant positive impact on teacher work motivation, (3) and madrasah leadership also has a significant positive impact on teacher performance<sup>9</sup>. This means that the teacher's work environment has a negative and insignificant influence on teacher performance, while work motivation has a small positive impact on teacher performance. In the context of education, dedication is a form of loyalty and sacrifice in the world of education. Research on dedication highlights its role in motivation, performance, and the benefits provided by each individual to their actions or creations within an educational institution that is a place for implementing quality education<sup>10</sup>.

Madrasahs, in facing the complex challenges and opportunities of the current digital era, need to reaffirm the role of leaders in bringing about change in line with the times and technological advances. Therefore, the role of leaders who can encourage the community to be technologically savvy and forward-thinking is very important. One of the appropriate leadership models in developing quality education today is *influencer* leadership. This type of leader has the characteristics mentioned above, so it is hoped that they will succeed in achieving quality education goals by realizing sustainable educational development in producing graduates who have a balance between intellectual intelligence (thinking), empathy (feeling), and physical health (sports). Education that integrates general knowledge and Islamic values is expected to produce a generation that is intelligent, healthy, caring, aware (*wearnes*), and noble in character<sup>11</sup>. Not only that, improving the quality of performance and dedication of teachers with Islamic values can also solve problems in madrasahs in creating a conducive and prosperous climate. This will have an impact on the growth of individual awareness and responsibility so that they are fully committed to carrying out their duties and functions to achieve comprehensive quality education. According to Borman and Motowidlo (1993), as cited by Kaswan (2015), improving competency and work behavior are important elements in teacher performance from the perspective of human resource development (SDM), especially in the digital era<sup>12</sup>. This can be interpreted to mean that performance can have an impact on increasing the professionalism and high dedication of a teacher in an educational institution.

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<sup>9</sup> S Auliana, AS Supriyanto, S Harini (2021) Understanding teacher performance through leadership role, work environment, and work motivation. - MANAGERIA: Journal of Islamic Education Management. 6 (2). pp. 155-168. ISSN 2502-9223; 2503-4383. t: <http://ejournal.uin-suka.ac.id/tarbiyah/manageria>

<sup>10</sup> Lev, B. (2001). *Intangibles: Management, Measurement, and Reporting*. Brookings Institution Press.

<sup>11</sup> Nurul Zubaidah. (2025). *Striving for International Quality Education*, Ministry of Religious Affairs Holds Follow-up Meeting on the Establishment of Excellent State Madrasahs ([https://www.instagram.com/pendidikan\\_madrasah/](https://www.instagram.com/pendidikan_madrasah/))

<sup>12</sup> Kaswan. (2015). *Human Resource Development*. Bandung: Alfabeta.

Based on this background, this study aims to analyze the extent to which *influencer* leadership, performance, and Islamic dedication influence the formation of excellent madrasas in supporting *Education for Sustainable Development* (ESD) at the Maarif Educational Institution in Malang Regency. From the research objectives, the researcher formulated four hypotheses, namely:

**H<sub>1</sub>** : *Influencer* leadership has a positive effect on the formation of superior madrasas.

**H<sub>2</sub>** : Islamic performance has a positive effect on the establishment of excellent madrasas

**H<sub>3</sub>** : Islamic dedication has a positive effect on the formation of excellent madrasas

**H<sub>4</sub>** : *Influencer* leadership, Islamic performance, and Islamic dedication have a positive effect on the formation of excellent madrasas

## Literature Review

*Leadership* is defined as someone who is able to lead, direct, and motivate. The word "leadership" in Indonesian comes from the word "pimpin," which means to guide or lead. From the word *pimpin* comes the verb "memimpin," which means to guide and lead<sup>13</sup>. Leadership provides a link between strategic planning and its implementation<sup>14</sup>. Strategic planning is a logical, rational, and methodical process that involves people to achieve set goals. This means that the role of leaders in Islamic educational institutions is a fundamental factor in achieving quality education and the success of the educational process in these institutions.

The current digital era requires leaders who can learn more about all developments in digital technology according to needs, ranging from communication tools and the business industry to digital wallets and *e-commerce* (Kohtamäki et al., 2020)<sup>15</sup>. The digital era has given rise to various opinions from the general public that being a leader provides many opportunities to bring about change and renewal in line with the increasing need for development. Syafrida Hafni (2020) argues that *leadership* is a process of activities carried out by a person to organize, direct, move, influence, motivate, and lead others to follow their wishes in order to achieve the desired goals<sup>16</sup>. Chazienul Ulum also states in his book that *leadership* is required to bring about the development of an organization over time.

### 1. *Influencer* Leadership

*Influencer* leadership actually originates from transformational leadership. *Influencer* leadership is often referred to as digital leadership, which involves interactions between leaders and members of an organization that are mostly conducted virtually using digital media,

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<sup>13</sup>Bappeda Kobar, (2024) Good Leadership as an Influencer. <http://Goginbaratkab.go.id>. Accessed on May 20, 2025, at 6:15 p.m.

<sup>14</sup> Kulshreshtha, K., & Sharma, G. (2021). Understanding e-leadership: Please mind the gap. *Technological Forecasting and Social Change*, 168. <https://doi.org/10.1016/j.techfore.2021.120750>

<sup>15</sup> Yusuf, Muhammad (2016) *The Concept of Islamic Performance*. E-Book, Educational Management, pp. 20-21

<sup>16</sup>Syafrida Hafni Sahir, et.al., *Effective Managerial Skills*, (North Sumatra: Kita Menulis Foundation, 2020), p. 78

eliminating the need for face-to-face meetings and providing flexibility in terms of space and time. *Influencer* leaders can be the first important figures to take the initiative for change and communicate it to followers to get a positive response. Meanwhile, followers are actors who do the same thing (make changes) to achieve goals, albeit with different roles.

In the context of education, *influential* leaders have characteristics that can be directly felt by their members/subordinates, such as: technological savvy, critical thinking, fostering problem solving, caring and awareness, professionalism, and confidence. The character of an *influential* leader can be interpreted as the actions of a leader who is able to influence and motivate others, effectively enabling cross-border collaboration, empowering teams, and encouraging wise participatory decision-making.

## 2. Islamic Performance

Work is performance, often referred to as performance appraisal. So, the phrase "sayarallâhu 'amalukum wa rasûluhû wal mu'minûn" is actually a performance appraisal. It should be noted that the words "Allah, Rasul, and Mukmin" (which in Arabic use 'rab rafa', as the subject) mean that the assessors are not only Allah, but also involve other parties, namely the Rasul and the Mukmin. What is meant in the Qur'an about working is as Allah says in the Qur'an, which means: "*When you have performed the prayer, then spread out in the land and seek Allah's bounty, and remember Allah much so that you may be successful.*"

This verse indicates that as Muslims, after completing our prayer obligations, we should work hard to earn a living. This shows that a Muslim's efforts to work and earn a living in a good and proper manner are part of worship<sup>17</sup>.

According to Ali & Al-Owaihian (2008), Islamic performance is an orientation that shapes and influences the involvement or participation of subordinates or followers in a work environment<sup>18</sup>. The initial concept of Ali & Al-Owaihian (2008) on Islamic performance is based on the Qur'an and Hadith, which contain four main concepts, namely effort, competition, transparency, and responsible behavior.<sup>19</sup> Overall, this concept implies the development and empowerment of an organizational work with minimum restrictions or no restrictions at all.

In educational institutions, Islamic performance is an attitude used as a tool to assess or measure the quality of the actions of a principal or teacher based on rational thinking. Islamic performance leads to Islamic work ethics that are oriented towards shaping and influencing the involvement of the entire community within the institution. Islamic performance can be used as a set of values or a belief system derived from the Qur'an and Hadith regarding work and hard work, which is built on four basic concepts, namely effort, competition, transparency, and

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<sup>17</sup> Abbas J. Ali and Al-Owaihian, A. (2008), "Islamic work ethic: a critical review", *Cross Cultural Management: An International Journal*, Vol. 15 No. 1, pp.5- 19.

<sup>18</sup> Mahmud Yusuf. (2016) *Islamic Performance*, LAFADZ JAYA pp. 18-20. Jakarta Email: lafadzjaya@gmail.com Website: www.publishing.my.id

<sup>19</sup> Abbas J. Ali and Al-Owaihian, A. (2008), "Islamic work ethic: a critical review", *Cross Cultural Management: An International Journal*, Vol. 15 No. 1, pp.5- 19.

responsible behavior<sup>20</sup>. Citra et al. (2018) also argue that if a worker has high Islamic work ethics, then that worker will perform their best work, thereby improving their performance<sup>21</sup>. This means that Islamic performance can make the achievement of organizational goals a certainty. Performance can also be interpreted as what is done and how it is done.

### 3. Elements of Performance

Performance has three important elements, namely: (a) The element of time, in the sense that the results achieved by certain efforts are assessed in a single cycle of time, often referred to as a period. The period can be measured in hours, days, months, or years. (b) The element of results, in the sense that these results are the average results at the end of the period. This does not mean that half of the period must necessarily yield half of the overall results. (c) Method element, in the sense that an employee must have a thorough understanding of and be willing to follow the predetermined guidelines, namely effective and efficient work methods. In addition, the employee must work enthusiastically and diligently without having to work excessively beyond their capabilities.

In assessing performance, there are five factors used as references, namely 1) quality of work, including: accuracy, precision, appearance, and acceptance of output; 2) quantity of work, including: volume of output and contribution; 3) supervision required, including: advice, direction, and improvement; 4) attendance, including: regulation, reliability, and punctuality; 5) conservation, including: prevention of waste, damage, and equipment maintenance<sup>22</sup>.

### 4. Islamic Dedication

The theory of dedication in education explores how the commitment and involvement of teachers and students affect the quality of education, motivation, and professional identity<sup>23</sup>. Field research conducted by Abdullah Munir in his book has examined in depth the factors that drive dedication, its impact on educational outcomes, and the challenges faced in maintaining high levels of dedication in the educational environment. The references used as the main guidelines in his research are 1) "Spiritual Teaching" (containing teachers' dedication to their work), written by Abdullah Munir, and 2) "Quality and Competitive Education" written by Dedi Mulyasa. The results of the study state that there are three forms of teacher devotion or dedication, namely: 1) having the will and willingness to sacrifice (energy, thoughts, and time) to improve the quality of education, 2) teachers' trust and sincerity in doing their best to improve the quality of education, 3) teachers have a strong spirit, patience, and determination to achieve quality education.<sup>24</sup> A key role in dedication is often acting as a mediator between

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<sup>20</sup> Ghada A. El-Kot and Ronald J. Burke. (2014), "*The Islamic Work Ethic among Employees in Egypt*", Vol. 7 No. 2, pp. 228-235

<sup>21</sup> Layaman, & Jumalia, M. (2018). The influence of work culture and Islamic work ethic on employee performance. *Indonesian Journal Of Strategic Management*, 1(1), 70–8

<sup>22</sup> Husaini Usman, Management, Human Resources (Jakarta: Bumi Aksara, 2010), p. 489

<sup>23</sup> Abidin, M. (2020). The Role of Educator Dedication in Developing a Quality Education Base. , 2, 1-19. <https://doi.org/10.54396/ALFAHIM.V2I1.67>

<sup>24</sup> Iraola-Real, I., Nolberto-Quispe, L., Bravo-Cunza, J., & Blas-Atencia, C. (2019). Dedicated and Effective: Predictive Research in Students of Elementary Education Career. 2019 IEEE World Conference on Engineering Education (EDUNINE), 1-5. <https://doi.org/10.1109/EDUNINE.2019.8875815>

organizational or social factors and outcomes such as *happiness*, *performance*, and civic behavior, which improve performance, *well-being*, and the meaning of actions in various fields that culminate in dedication<sup>25</sup>.

Dedication is often understood as multidimensional, including affective (emotional), normative (moral obligation), and continuous (long-term commitment) components<sup>26</sup>. Previous research examining the relationship between the level of dedication and commitment of teachers to their profession and their attitudes towards the teaching profession, on a research sample of 477 teachers using the indicators 'Teaching Profession Involvement Scale', 'Teaching Profession Dedication Scale' and 'Teaching Profession Attitude Scale', found that the teachers who participated in the study had high levels of professional dedication, professional commitment, and attitudes towards the teaching profession. It was also found that the level of professional commitment and professional dedication of female teachers was in the sub-dimension, and their level of professional attitude was higher than that of male teachers.<sup>27</sup>

## 5. Excellent Madrasah

The concept of an 'excellent school' involves innovation, quality management, and integration between religious and contemporary knowledge to meet the needs of students and the community. One of the advantages that can be assessed by the community is that effective service management is important, involving careful planning, implementation, evaluation, and follow-up. This includes aligning the curriculum with education policy, offering additional subjects, and providing a variety of information services. Success and excellence are measured by increased community interest and institutional achievement, with continuous improvement based on feedback received.

Excellent schools prioritize professional educators, comprehensive facilities, and modern and transparent management systems. They also invest in infrastructure such as libraries, laboratories, and dormitory facilities to support the holistic development of students. Related to the growth of excellent schools, research conducted by Toyyibah et al. explains that socio-cultural factors and students' beliefs about nature can optimize students' intrinsic and extrinsic motivation for the advancement of their academic resilience in science subjects, so that in the future they can think critically and excel in academic fields. Within the Ministry of Religious Affairs, the definition of a leading school is a school that has a leading program born from a desire to have madrasahs that are capable of achieving at the national and global levels in the mastery of science and technology, supported by good character.

## 6. Education for Sustainable Development (ESD)

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<sup>25</sup> Tyree, A. (1996). Conceptualizing and Measuring Commitment to High School Teaching. *Journal of Educational Research*, 89, 295-304. <https://doi.org/10.1080/00220671.1996.9941331>.

<sup>26</sup> Türk, E., & Korkmaz, Ö. (2022). Teachers' Levels of Dedication and Commitment to Their Professions and Attitudes to Their Professions. *Participatory Educational Research*. <https://doi.org/10.17275/per.22.101.9.5>

<sup>27</sup> Toyyibah, T., & Suci, D. (2019). Are We Islamic Young Scholars? Profiling Excellent Students at Madrasah. *Al-Ta lim Journal*. <https://doi.org/10.15548/JT.V26I2.565>

Sustainable education is an educational approach that aims to develop students, schools, and communities with values and motivation to take action for sustainability, in their personal lives, within their communities, and globally, now and in the future<sup>28</sup>. Sustainable education for sustainable development. Sustainable education is a general term used to describe quality education (ESD) that will remain central in the future. Sustainable education in the future focuses on caring for and raising awareness about the environment while promoting a more ecological and socially just society through responsible behavior<sup>29</sup>. This means that as students and learners, we must be able to take steps to promote a more sustainable lifestyle that involves the interconnection between environmental, social, cultural, and economic systems. This approach enables all individuals to acquire the knowledge, skills, attitudes, and values necessary to build a sustainable future. Society and the educational community need to become more aware of the need to redirect education to achieve sustainability. Society and the educational community need to become more aware of the need to redirect continuing education to enhance teachers' professional awareness in order to support and realize the five pillars of sustainable development in action<sup>30</sup>.

Educational institutions are expected to bridge the achievement of sustainable development, especially in improving quality (excellent) education. Education can be strong if it builds individuals who are intelligent, skilled, and have noble character. In addition, the role of nature and a healthy social environment in meeting the daily needs of human life is also an asset in improving the quality of education<sup>31</sup>.

## Research Method

This research uses a descriptive quantitative approach, which is carried out based on numbers, data in the form of numbers (scores or values, rankings, or frequencies), and analyzed using statistical tools aimed at answering specific research questions or hypotheses<sup>32</sup>. Given the descriptive and verificative nature of this research, the research methods used are descriptive survey and explanatory survey methods. The type of investigation in this research is causality. The unit of analysis used in this research is individuals, namely teachers at Maarif Private Madrasah Tsanawiyah (MTsS) in Malang Regency, which consists of five madrasahs, using a sample of 275 respondents. The time horizon in this study is cross-sectional, where information from a portion of the population (respondent sample) is collected directly from the location

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<sup>28</sup> Tavanti, M., & Wilp, E. A. (2015). Globally responsible management education: From principled challenges to practical opportunities. In D. Palmer (Ed.), *Handbook of research on business ethics and corporate responsibilities* (pp. 196-220). Hershey: IGI Global

<sup>29</sup> Leiserowitz, A. (2006). Climate Change Risk Perception and Policy Preferences: *The Role of Affect, Imagery, and Values. Climatic Change*, 77(1), 45-72.

<sup>30</sup> Jindal-Snape, D., Davies, D., Collier, C., Howe, A., Digby, R., & Hay, P. (2013). The impact of creative learning environments on learners: A *systematic literature review. Improving Schools*, 16(1), 21-31

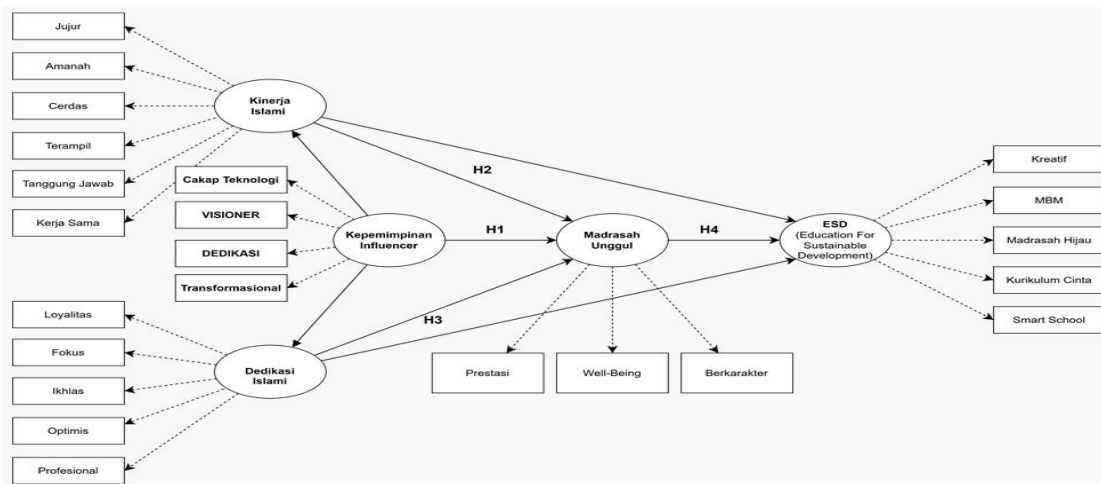
<sup>31</sup> Goodland, R. (2002). Sustainability: Human, social, economic and environmental. *Encycl. Glob. Environ. Change* 5, 481-491.

<sup>32</sup> Sugiyono (2017) *Quantitative Research: Theory and Practice*. Jakarta: Rosdakaya

empirically, with the aim of finding out the opinions of a portion of the population (sample) regarding the object being studied.

PLS-SEM is used to examine the measurement and structural models of the Smart-PLS 3.0 program, which can later reveal that factors such as *influencer* leadership, performance, and Islamic dedication have a significant influence on the formation of excellent madrasahs and vice versa. In addition, the significant interrelationship between the four endogenous variables will confirm their involvement, which will then reveal that several constructs mediate the correlation between the dependent and independent variables.

The design/methodology of *influencer* leadership, performance, and Islamic dedication was tested using confirmatory factor analysis with data collected from madrasah principals and teachers at leading madrasahs under the auspices of the Maarif Education Institution in Malang Regency. The relationship between variables was examined through path analysis. The following is a diagram depicting the relationship between dependent and independent variables:



Data collection was carried out using a questionnaire. The questionnaire was designed based on indicators for each variable to be studied. The questions in the questionnaire were comprehensive in nature and tailored to the needs and indicators. A questionnaire is a set of written questions used to obtain information from respondents in terms of reports about themselves or things they know.

**Results and Discussion**

The SEM-PLS analysis results obtained can be seen in the table below:

**a. F-Square Value**

	Islamic Dedication	Influencer Leadership	Islamic Performance	Excellent Madrasah
Islamic Dedication				0.153
Influencer Leadership				0.122
Islamic Performance				0.152
Excellent Madrasah				

f-Square is a value that measures the magnitude of the effect of the influence between the variables studied. The  $f^2$  value is used to determine how much influence one independent variable has on the dependent variable. The  $f^2$  value can be interpreted as follows:

- $f^2 = 0.153$  for the Islamic dedication variable in the moderate category
- $f^2 = 0.122$  for the influencer leadership variable in the low category, and
- $f^2 = 0.152$  for the Islamic performance variable in the moderate category

The  $f^2$  values above can provide information about the extent of the influence between the variables of influencer leadership, performance, and Islamic dedication on each other, whether the effect is significant or not, and whether the independent variables have a substantial influence on the dependent variables or not.

#### b. Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Islamic Dedication	0.868	0.879	0.898	0.589
Influencer Leadership	0.842	0.856	0.880	0.614
Islamic Performance	0.757	0.734	0.803	0.672
Excellent Madrasah	0.887	0.895	0.908	0.618

The second stage examines the results of Cronbach's Alpha and *Average Variance Extracted* (AVE) values. Cronbach's Alpha is useful for measuring internal reliability and determining how well the indicators used to measure a construct correlate with each other in forming a consistent scale. A Cronbach's Alpha value ( $\alpha \geq 0.9$ ) can be interpreted as indicating that the reliability of the variance is very good and can be explained by the construct of the indicators. The AVE value is a measure used to determine the convergent validity of a construct being studied. The AVE value can be interpreted as follows  $AVE \geq 0.5$  falls into the category of good convergent validity, meaning that more than 50% of the variance can be explained by the construct.

From the AVE table, it can be seen that the AVE value of influencer leadership is 0.614, Islamic performance is 0.672, Islamic dedication is 0.589, and madrasah excellence is 0.618. From the SEM analysis results obtained, these variables have a significant influence and fall into the good category because more than 50% of the variance has a positive influence.



### c. Fornell-Larcker Criterion

	Islamic Dedication	Influencer Leadership	Islamic Performance	Excellent Madrasah
Islamic Dedication	0.748			
Influencer Leadership	0.362	0.717		
Islamic Performance	0.370	0.415	0.820	
Excellent Madrasah	0.488	0.479	0.514	0.706

From the Fornell-Larcker Criterion table, we can see that the excellent madrasah shows a value of 0.706, which means that the construct value of the excellent madrasah variable has good discriminant validity because  $\sqrt{AVE}$  (0.706) is greater than the correlation (0.6). This criterion in the SEM model is assessed as good. The Fornell-Larcker Criterion value that meets the criteria is when the square root of AVE is greater than the correlation between constructs.

The results of the analysis obtained in this study are in line with Sutermeister's opinion that the level of productivity of an organization/institution is determined by individual performance and the accompanying technology. Employee performance also depends on two things, namely individual ability or competence and individual motivation. In line with Sutermeister, Gibson also describes the factors that influence performance, namely: 1) Individual variables, including abilities, skills, mental and physical health, family background, social status, experience, and demographics (age, origin, gender); 2) Organizational variables, including resources, leadership, rewards, and job design structure; 3) Psychological variables, including perception, attitude, personality, learning, and motivation<sup>33</sup>.

From the results of research and supporting theories found by previous researchers, it can be concluded that leadership and performance factors provide greater value than Islamic dedication in this discussion. Dale Furtwengler states that the factors that greatly influence performance are interpersonal skills, the mentality for success, openness to change, creativity, communication skills, and initiative<sup>34</sup>.

Muhlisin states that teacher performance is greatly influenced by several factors, including: (1) Personality and high dedication can determine a teacher's success in carrying out their duties. (2) Teacher professional development is very important because their duties and roles are not only to provide scientific knowledge but also to shape attitudes and spirits that can survive in an era of hypercompetition. (3) Teachers' teaching abilities reflect their mastery of their competencies; (4). Relationships and communication in the work environment provide support for the smooth running of teachers' duties at school; (5) The welfare factor provides appropriate incentives as a means of improving teachers' welfare to prevent them from skipping work to seek additional income to meet their daily needs; and (6) A conducive work climate gives teachers hope to work more calmly in accordance with the school's objectives<sup>35</sup>.

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<sup>33</sup> Suharsaputra, Uhar. *Research Methods: Quantitative, Qualitative, and Action*. (Bandung: PT. Refika Aditama. 2012)., p.147

<sup>34</sup> Furtwengler, Dale. *Performance Evaluation: Mastering the Skills You Need in Ten Minutes*. (Yogyakarta: Andi. 2002)., pp. 90-92

<sup>35</sup> Muhlisin, *Professionalism in Future Teacher Performance*, (Jakarta: Puskom, 2008)., p. 97

## Conclusion

Influencer leadership is a leadership style that is highly sought after by educational institutions in this digital age. The role of leaders is still quite relevant as an important factor in advancing educational institutions in their efforts to achieve quality and sustainable educational goals. Leadership, performance, and Islamic dedication are key in developing an excellent madrasa that supports sustainable education. The integration of Islamic values, management innovation, and collaboration becomes the main foundation in educational transformation at the Ma'arif Malang Educational Institution. Overall, it can be explained that the three factors studied in this research, namely influencer leadership, Islamic performance, and Islamic dedication, have a positive effect on madrasah excellence and have proven that hypotheses 1, 2, 3, and 4 in this study can be proven.

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# RETHINKING ASSESSMENT: EVALUATING THE USE OF AUTHENTIC TASKS FOR SPEAKING AND WRITING IN ESL CLASSROOMS

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**Abstract:** *This study aimed to evaluate the effectiveness of authentic tasks as a classroom assessment tool for improving speaking and writing skills among low-proficiency Form 4 ESL students in a Malaysian secondary school. These students, transitioning from Form 3, faced persistent difficulties in speaking and writing tasks. The study sought to determine whether real-world, meaningful tasks could better support their language development. Authentic tasks, including role plays, interviews, collaborative projects and functional writing activities such as emails and reports, were designed in alignment with CEFR descriptors. Tasks were scaffolded to increase complexity, incorporating formative feedback, peer evaluation and self-reflection. Data collection involved pre- and post-assessment rubrics, classroom observations as well as teacher field notes. The findings revealed marked improvements in students' speaking fluency, confidence and use of cohesive devices, alongside enhanced writing accuracy, organisation and task fulfilment. Students demonstrated greater motivation and engagement, with many reporting a clearer understanding of English usage in real-life communication contexts. Authentic assessment provided a supportive platform for low-proficiency learners to develop productive language skills. The integration of real-world tasks fostered higher learner participation and bridged the gap between classroom instruction and practical language use. This approach is recommended for ESL classrooms, particularly for learners struggling under conventional assessment models, as it promotes both skill development and communicative competence.*

*Keywords: Authentic assessment, ESL classroom, Speaking skills, Writing skills*

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## 1.0 Introduction

Form 4 ESL students who transition from lower secondary often encounter persistent difficulties in developing their speaking and writing skills (Aziz et al., 2021; Nordin et al., 2023). Many show limited fluency, weak organisation, and lack of confidence when engaging in classroom tasks, which affects their ability to communicate effectively (Aziz et al., 2021). Conventional assessment practices, which focus heavily on accuracy and summative testing, do little to encourage meaningful language use or learner participation (Singh et al., 2021). This situation highlights the need for alternative approaches that not only assess performance but also support learning.

This study investigates the use of authentic tasks as a form of classroom assessment to improve students' productive skills. The research addresses two questions:

- a) How far do authentic tasks help in developing the speaking skills of low proficiency Form 4 ESL students?

- b) To what extent do authentic tasks affect the writing performance of low proficiency Form 4 ESL students?

The objectives are to evaluate the effectiveness of authentic tasks in enhancing fluency, accuracy, and organisation in speaking, and to examine their impact on accuracy, organisation, and task fulfilment in writing.

## 2.0 Literature Review

Classroom assessment in English language learning has experienced notable transformation, shifting from an emphasis on traditional testing practices to more formative and authentic approaches (Price et al., 2014). Traditional testing, often dominated by summative examinations, has been criticised for narrowing the scope of assessment to accuracy and recall rather than supporting learning as an ongoing process (Price et al., 2014; Singh et al., 2021). In contrast, formative and authentic assessment strategies focus on continuous feedback, learner engagement and the development of communicative competence (Hill & Worth, 2019; Yusupalieva, 2024; Ghafar et al., 2025).

Speaking and writing, commonly referred to as productive skills, remain particularly underdeveloped among students with lower proficiency levels (Field, 2002; Medina & Bajana, 2024). In ESL contexts, these learners frequently encounter challenges in fluency, vocabulary, grammar, and organisation, which hinder their ability to express ideas effectively (Medina & Bajana, 2024). Traditional assessment methods do little to address these gaps because they primarily highlight errors rather than providing opportunities for meaningful practice and growth (Aziz et al., 2021). This gap has prompted educators and researchers to advocate for assessment that mirrors real-life communication and supports learner progress through feedback and reflection (Villaroel et al., 2018; McArthur, 2023; Villaroel et al., 2020).

Theories of formative assessment underscore the importance of integrating assessment into teaching so that it informs both the learner and the teacher about current progress and next steps (Aziz et al., 2020; Sokhanvar et al., 2021). Similarly, the concept of communicative competence highlights that language learning extends beyond grammatical accuracy to include the ability to use language appropriately in diverse contexts (Osman, 2023; Pohan & Ikawati 2022; Yusupalieva, 2024). Task-based learning complements these perspectives by emphasising learning through the performance of purposeful, contextually meaningful tasks. Together, these theoretical underpinnings suggest that authentic assessment which engages learners in real-world speaking and writing activities provides a more effective means of enhancing both competence and confidence among ESL learners, particularly those at lower levels of proficiency.

## 2.1 Challenges in Speaking and Writing among Low Proficiency Learners

Speaking and writing are complex skills that require both linguistic accuracy and communicative effectiveness. Low proficiency learners often struggle to achieve this balance. In speaking, students typically encounter difficulties with fluency, hesitation, limited vocabulary, and a lack of confidence when expressing themselves (Nordin et al., 2023). Anxiety is also a key barrier that reduces classroom participation (Aziz & Kashinathan, 2021). Writing presents a different but related set of challenges. Learners with weak grammar and vocabulary frequently produce disorganised texts, showing little coherence or task fulfilment

(Farooq et al., 2020). These challenges are particularly evident in secondary school students transitioning to higher forms, where expectations for extended discourse and academic writing increase (Aziz & Kashinathan, 2021; Yahaya & Madzlan, 2021; Ghulamudin et al., 2021). Low proficiency students often rely heavily on memorisation and translation, which results in limited communicative use of English (Aziz & Kashinathan, 2021). The gap between classroom learning and real-life communication further compounds these challenges, as many students cannot transfer classroom knowledge to authentic contexts. Such limitations highlight the necessity of assessment strategies that focus not only on evaluating correctness but also on fostering growth in communication, organisation, and confidence.

## **2.2 Traditional Assessment Practices and their Limitations**

For decades, language assessment in schools has been dominated by summative examinations, written tests, and grammar-focused tasks (Meylani, 2024). These methods prioritise accuracy, recall, and measurable outputs, often in controlled and artificial conditions (Elsayary, 2021). While summative assessment provides accountability and benchmarks, it is limited in its ability to capture progress in communicative competence (Ghafar et al., 2025). For speaking, oral tests are sometimes reduced to structured interviews with limited scope for authentic interaction. For writing, assessment tends to focus on surface errors rather than the process of planning, drafting, and revising. These limitations are especially problematic for low proficiency learners (Putri et al., 2019). Summative tasks often highlight weaknesses without offering a pathway for improvement. Feedback, if provided, is frequently delayed and corrective in nature, giving little insight into how learners can develop their skills (Putri et al., 2019; Singh et al., 2021; Villaroel et al., 2020). Moreover, the focus on one-off performance creates anxiety, discourages risk-taking, and widens the gap between high and low performers. As a result, traditional approaches often fail to motivate learners or to support sustained growth in speaking and writing (Sattarova, 2024).

## **2.3 The Shift Towards Formative and Authentic Assessment**

The limitations of traditional practices have led researchers and educators to advocate for more formative approaches, where assessment is integrated into the teaching and learning cycle. Formative assessment emphasises feedback, learner involvement, and continuous monitoring of progress (Singh et al., 2021; Osman, 2023). Authentic assessment, in particular, has gained attention for its focus on real-world tasks that mirror the ways language is used outside the classroom (Aziz et al., 2021; Singh et al., 2022). Instead of being judged solely on correctness, learners engage in tasks that require them to perform, create, or solve problems in meaningful contexts (Singh et al., 2022). Authentic assessment recognises that learning occurs most effectively when students apply knowledge in practical situations (Gulikers et al., 2004). It includes a variety of task types, such as role plays, presentations, collaborative projects, journals, portfolios, and problem-solving activities. These tasks align more closely with the communicative aims of language education, encouraging learners to use language for real purposes (Gulikers et al., 2004). For low proficiency learners, authenticity can provide a sense of relevance and reduce anxiety, as the tasks are situated within contexts they can relate to (Koh, 2017).

## **2.4 Authentic Tasks and Speaking Skills**

Research indicates that authentic tasks play a significant role in improving speaking proficiency. By engaging in activities such as role plays, interviews, and group discussions, students are exposed to spontaneous language use, which develops fluency and confidence (Ruzigul, 2024). Authentic speaking tasks create opportunities for negotiation of meaning, turn-taking and use of appropriate vocabulary in context. They also encourage learners to listen actively and respond meaningfully, thus integrating multiple sub-skills of oral communication (Nhan, 2024). For low proficiency learners, authentic speaking tasks offer scaffolding that gradually reduces reliance on memorised responses (Ruzigul 2024; Nhan, 2024). When supported by peer and teacher feedback, students can reflect on their strengths and areas for improvement (Aziz et al., 2020). Moreover, authentic speaking tasks often include collaborative elements, which lower anxiety and promote participation. The communicative and interactive nature of these tasks aligns with the real purposes of language learning, making speaking less intimidating and more engaging.

## **2.5 Authentic Tasks and Writing Skills**

In writing, authentic tasks emphasise purposeful communication over rote correctness. Tasks such as writing emails, blogs, reports, and reflections simulate real-world purposes, helping learners understand how writing functions beyond the classroom (Zhao, 2024). For low proficiency learners, authentic writing tasks are valuable because they link language learning with contexts that are meaningful and motivating (Patel & Kaur, 2023). This relevance can increase engagement and persistence in improving writing skills. Authentic writing tasks also allow for process-oriented assessment (Santos, 2019). Students are encouraged to plan, draft, edit, and revise their work, with opportunities to receive feedback at multiple stages. This contrasts with traditional writing tests, which typically assess only the final product (Zhao, 2024; Santos, 2019). Portfolios are a common form of authentic writing assessment, enabling students to document growth over time. Such approaches not only improve accuracy and organisation but also enhance learners' sense of ownership and pride in their work.

## **2.6 The Role of Feedback, Peer Assessment and Reflection in Authentic Assessment**

A key element of authentic assessment is the integration of feedback loops that involve both teachers and peers (Aziz et al., 2020). Feedback in authentic tasks is often descriptive, constructive, and immediate, helping learners make connections between performance and improvement (Panadero & Broadbent, 2018). Peer assessment allows students to critically evaluate one another's work, which builds analytical skills and a deeper understanding of assessment criteria (Pohan & Ikawati, 2022). Self-reflection is also a central feature, encouraging learners to monitor their own progress and set goals for improvement. For low proficiency learners, reflection provides a means of recognising small but significant achievements, which can boost motivation (Carless & Boud, 2018). Together, feedback, peer assessment, and reflection ensure that assessment becomes a process of learning rather than merely a measure of outcomes.

## **2.7 The Relevance of Authentic Assessment in Malaysian ELT Classrooms**

The Malaysian education system has increasingly promoted student-centred learning and CEFR-aligned assessment (Razak & Jalil, 2022). However, classroom realities show that many

teachers still rely on traditional methods, especially for speaking and writing (Aziz et al., 2020; Nordin et al., 2023; Othman & Ismail, 2020). This reliance often disadvantages learners who need more practical opportunities to use language meaningfully. Authentic assessment, therefore, holds promise as it aligns with national reforms while addressing the specific needs of low proficiency students (Aziz et al., 2020). Form 4 represents a critical stage as students transition into upper secondary with higher academic demands. Introducing authentic assessment at this stage allows learners to build stronger foundations in productive skills before facing the challenges of examinations and real-life communication beyond school ( Razak & Jalil, 2022). Thus, exploring the impact of authentic tasks in this context is both timely and necessary.

## **2.8 Summary**

While traditional assessment practices are limited in supporting language growth, authentic assessment provides meaningful alternatives that focus on real-world use of language. Authentic tasks in speaking and writing have been shown to improve fluency, accuracy, organisation and learner motivation. They encourage feedback, collaboration and reflection, which are especially beneficial for low proficiency learners. In Malaysian ESL classrooms, authentic assessment aligns with current educational reforms and responds to the pressing need to bridge the gap between classroom performance and practical communication. This study builds on these insights by evaluating the impact of authentic tasks on Form 4 students' speaking and writing, offering evidence for how assessment can be rethought to better serve low proficiency learners.

## **3.0 Methodology**

This study adopted a classroom-based quasi-experimental design with a mixed-methods approach. The quasi-experimental design was selected as it enabled the researcher to examine the effects of authentic tasks on students' speaking and writing performance within their natural classroom setting, without random assignment (Benhady, 2021). The use of mixed methods allowed both quantitative and qualitative data to be collected, providing a more holistic understanding of how authentic assessment shaped students' learning (Taheerdost, 2021). Quantitative data from pre- and post-assessment rubrics measured improvements in performance, while qualitative data from observations, journals, and field notes captured student engagement, and classroom dynamics (Taheerdost, 2021; Strijker et al., 2020; Soleimani, 2020).

The study spanned eight weeks and was integrated into the existing English language curriculum (Jiang et al., 2021). Authentic tasks were gradually introduced and scaffolded, with each task designed to build upon previous learning experiences. The design ensured that assessment was not an isolated event but part of the continuous teaching and learning cycle (Gulikers et al., 2004).

The study involved 30 Form 4 students from a Malaysian secondary school. The students came from diverse socio-economic backgrounds, but all shared a common profile of struggling with productive language skills. Their proficiency levels ranged from A2 to low B1 on the CEFR scale, indicating difficulties with fluency, accuracy, and extended communication in both speaking and writing. The chosen sample size was manageable within the classroom context and allowed for close observation of individual and group progress.



Several instruments were employed to collect both quantitative and qualitative data in this study. The speaking rubric, developed in alignment with CEFR descriptors, assessed fluency, accuracy, organisation, and interaction, while the writing rubric, also CEFR-aligned, focused on grammar accuracy, vocabulary use, organisation of ideas, coherence and task fulfilment. To complement these, an observation checklist was used by the teacher-researcher to record student engagement, participation, and confidence during speaking and writing activities. In addition, students kept weekly reflective journals, which encouraged them to articulate their experiences, challenges and perceived progress over the course of the intervention. The teacher-researcher also maintained systematic field notes documenting classroom events, student behaviours and observations on the effectiveness of the tasks. Together, these instruments provided a comprehensive set of data sources, ensuring triangulation that enhanced the reliability and validity of the findings. The data collection process was organised into three phases as shown in the table one below :

**Table 1: Data Collection Process in Three Phases**

<b>Phase</b>	<b>Procedures</b>
Pre- assessment Phase	Students completed a baseline speaking test and a writing task, both assessed using the rubrics. This established initial proficiency levels.
Intervention Phase	Over the course of eight weeks, students participated in authentic tasks including role plays, interviews, collaborative projects, and functional writing tasks such as emails, blogs, and reports. Each task was scaffolded to increase complexity. Peer feedback and teacher guidance were incorporated throughout. Observation checklists, reflective journals, and field notes were collected during this phase.
Post-assessment Phase	At the end of the intervention, students completed a final speaking test and writing task, assessed with the same rubrics as the pre-assessment.

Since, the study employed both quantitative and qualitative analysis techniques, quantitative data from the pre- and post-assessments were analysed using descriptive statistics to calculate mean scores and percentage improvements (Jiang et al., 2021; Creswell, 1999; Almeida, 2018) . A paired sample t-test was applied to determine whether the differences in performance before and after the intervention were statistically significant.

As for the qualitative part, the qualitative data from journals, observations and field notes were subjected to thematic analysis (Creswell, 1999). Responses were coded to identify recurring themes related to learner motivation, confidence, engagement and perception of authentic tasks. The use of triangulation across data sources provided a richer understanding of how authentic assessment influenced not only performance but also attitudes towards language learning.

The combined rigour of quantitative measurement with the depth of qualitative exploration, the research design provided evidence of measurable improvement, while the inclusion of reflective and observational data offered insights into how and why changes occurred. By targeting low proficiency learners and embedding authentic tasks within the classroom, the study sought to demonstrate the potential of authentic assessment as a tool for bridging the gap between classroom instruction and real-world language use.

#### 4.0 Data Analysis

The first research question focused on how authentic tasks influenced the speaking performance of low proficiency Form 4 students. Data were collected through pre- and post-tests assessed with a CEFR-aligned rubric. Table 2 presents the mean scores before and after the intervention.

**Table 2: Pre- and Post- Test Mean Scores for Speaking**

Speaking Criteria	Pre-Test Mean Score	Post – Test Mean Score	Score Improvement
Fluency	2.1	3.4	+61.9%
Accuracy	1.9	3.1	+63.1%
Organisation	2.0	3.2	+60.0%
Interaction	2.0	3.6	+56.5%
<b>Overall</b>	<b>2.1</b>	<b>3.3</b>	<b>+57.1%</b>

The results indicate noticeable improvements across all four criteria. Fluency and accuracy showed the highest gains, with mean scores increasing by over 60 percent. Organisation and interaction also recorded significant progress. The overall mean score rose from 2.1 to 3.3, suggesting that authentic speaking tasks encouraged greater confidence, reduced hesitation, and improved the ability to sustain meaningful communication.

The second research question explored how authentic tasks affected students' writing. Table 3 summarises the pre- and post-test mean scores across five criteria.

**Table 3: Pre- and Post- Test Mean Scores for Writing**

Speaking Criteria	Pre-Test Mean Score	Post – Test Mean Score	Score Improvement
Grammar Accuracy	2.0	3.2	+60.0%
Vocabulary Use	2.1	3.3	+57.1%
Organisation	1.8	3.0	+66.7%
Coherence	2.0	3.1	+55.0%
Task Fulfilment	1.9	3.2	68.4%
<b>Overall</b>	<b>2.0</b>	<b>3.2</b>	<b>+60.0%</b>

The findings show that students made substantial gains in writing. The highest improvement was in task fulfilment (+68.4%), indicating that learners became more capable of addressing prompts and meeting task requirements. Organisation also showed a strong increase (+66.7%), reflecting progress in structuring ideas logically. Gains in grammar accuracy and vocabulary use were equally encouraging, suggesting that authentic writing activities supported both linguistic and organisational development.

To confirm the reliability of these improvements, paired sample t-tests were conducted for both speaking and writing scores. Results indicated statistically significant differences ( $p < 0.05$ ) between pre- and post-test means, confirming that authentic assessment tasks had a measurable positive effect on students' performance.

In addition to numerical data, qualitative evidence from observation checklists, student reflective journals, and teacher field notes provided deeper insights into how authentic tasks

influenced learners' experiences. Thematic analysis generated four recurring themes, each supported by observed classroom behaviours and learner reflections.

Students demonstrated greater confidence in speaking tasks as the intervention progressed. During early sessions, many hesitated, spoke in fragmented sentences, or avoided eye contact. However, by the fourth week, the observation checklist showed more students volunteering to participate without being prompted. Student A wrote in her journal:

*“I was very nervous to speak before, but after doing the interview task with my friend, I felt I could talk more without stopping so much.”*

Teacher field notes confirmed this trend, noting that previously quiet learners became more willing to share ideas in group discussions. This increase in confidence corresponded with the quantitative gains in fluency and interaction.

Authentic tasks also appeared to stimulate student interest and motivation. Learners reported enjoying activities such as role plays, email writing, and collaborative projects because they felt relevant and practical. A journal entry read:

*“I liked writing the email because it is something I will use outside the classroom.”*

The observation checklist also revealed improved engagement, as students were more attentive and eager to complete tasks compared to traditional grammar exercises. Teacher notes indicated that learners often requested to repeat or extend activities they found enjoyable, suggesting that authentic assessment fostered intrinsic motivation to use English meaningfully.

Peer assessment and group-based authentic tasks encouraged stronger collaboration among students. During role plays and project presentations, students frequently supported each other by offering vocabulary suggestions or helping peers organise their ideas. Observation notes documented instances of students negotiating roles and responsibilities during group tasks, showing greater teamwork compared to their usual reluctance to interact in English. A reflective journal captured this shift:

*“Working with my group helped me feel less scared, because we tried to help each other with words and sentences.”*

Teacher field notes echoed this finding, emphasising that collaboration created a more supportive classroom environment for low proficiency learners.

Students recognised the practical value of the tasks, which enhanced their sense of purpose in learning English. Writing reports, emails, and blogs, for example, were seen as directly applicable to real-life communication. One learner wrote:

*“When I wrote the blog, I felt it is something people really read. It made me want to do better.”*

Observations also showed that students approached these tasks with greater seriousness than routine writing drills. Teacher notes highlighted that learners asked more context-based questions during authentic tasks, such as how to address an email recipient politely or how to

introduce themselves formally in a role play. This indicated an awareness of English as a tool for authentic communication, not just for examination purposes.

Authentic assessment significantly improved students' speaking and writing skills. Quantitative results showed notable gains in fluency, accuracy, organisation, and task fulfilment, while qualitative findings highlighted increased confidence, motivation, collaboration, and awareness of real-life relevance. Together, these outcomes demonstrate that authentic tasks foster measurable language growth and positive learner attitudes in low proficiency ESL classrooms.

## 5.0 Discussion

This study set out to evaluate the effectiveness of authentic assessment in improving the speaking and writing skills of low proficiency Form 4 ESL students. The results provided both quantitative and qualitative evidence of progress, demonstrating that authentic tasks can positively influence learner performance and attitudes. This discussion interprets the findings in relation to existing research and considers their implications.

The findings revealed significant improvement in students' speaking performance, particularly in fluency, accuracy and interaction. Students who initially struggled to express themselves showed greater willingness to participate in oral tasks as the intervention progressed. This suggests that authentic speaking activities, such as role plays and interviews, provided safe yet meaningful spaces for students to practise language. The reduction in anxiety, supported by journal reflections and observations, highlights that authentic assessment not only develops language competence but also builds confidence in communication (Ghaffar et al., 2025; Osman, 2023; Singh, 2022).

Students also demonstrated considerable gains in writing, especially in organisation and task fulfilment. Writing emails, reports, and blogs encouraged learners to pay attention to context, audience, and purpose. Unlike traditional grammar drills, these tasks demanded logical sequencing and coherent presentation of ideas. Journals revealed that students enjoyed writing tasks when they felt relevant, and teacher field notes confirmed increased investment in revising drafts. These results indicate that authentic writing assessment encourages learners to move beyond error correction to meaningful written communication (Singh, 2022; Ismail et al., 2023; McArthur, 2023).

The intervention also had a strong impact on student motivation and collaboration. Learners reported higher levels of interest and enjoyment, particularly in tasks that mirrored real-life communication (Field, 2002). Observation checklists showed more active participation, while peer assessment fostered teamwork and collective responsibility for learning. This reflects the principles of task-based learning, where interaction and cooperation enhance both linguistic development and social skills. For low proficiency learners, collaboration provided a supportive environment that reduced isolation and encouraged risk-taking in language use (Nordin, 2022; Elsayary, 2021; Farouq, 2021; Hill & Worth, 2019).

A key theme emerging from the data was the perceived relevance of authentic tasks. Students recognised the practical value of preparing emails or engaging in role plays that reflected real communication contexts. This recognition not only increased engagement but also shifted their perspective of English from a purely academic subject to a practical tool. Such a shift is vital

for sustaining long-term motivation, especially for learners who might otherwise disengage due to repeated difficulties in traditional assessments.

Taken together, the outcomes highlight that authentic assessment improved both performance and attitudes among low proficiency Form 4 ESL learners. Quantitative gains demonstrated measurable growth in speaking and writing, while qualitative evidence explained how confidence, motivation, collaboration, and relevance contributed to these improvements. Although limited by sample size and duration, the study provides strong evidence that authentic tasks bridge the gap between assessment and learning, offering both academic and affective benefits.

## 6.0 Conclusion and Recommendations

This study explores the effectiveness of authentic assessment in enhancing the speaking and writing skills of low proficiency Form 4 ESL students. The results revealed that authentic tasks not only improved measurable aspects of performance, such as fluency, accuracy, organisation, and task fulfilment, but also influenced students' attitudes toward learning. Learners became more confident, motivated, and engaged, and they recognised the relevance of tasks that mirrored real-life communication. These outcomes confirm that authentic assessment is not simply an evaluation tool but a powerful instructional strategy that fosters both academic progress and positive learner dispositions.

The study suggests that classroom assessment should be reoriented toward tasks that are purposeful, contextual, and meaningful. For teachers, this implies the need to integrate activities such as role plays, interviews, collaborative projects, and functional writing exercises into regular practice. Rather than focusing narrowly on correctness, assessment should provide opportunities for learners to use language in authentic contexts where feedback and reflection are part of the process. For curriculum designers, the findings highlight the importance of aligning assessment frameworks with CEFR descriptors while ensuring that tasks reflect real communication needs. Policymakers are also urged to invest in professional development that equips teachers with the knowledge and skills to design and implement authentic assessment effectively.

Although limited in scope and duration, this study adds to the growing evidence that authentic tasks can bridge the gap between classroom learning and practical language use. Future research could extend these findings by examining larger and more diverse student populations, conducting longitudinal studies, and exploring the use of digital platforms to support authentic assessment. Ultimately, the study concludes that authentic assessment offers a promising pathway for supporting low proficiency learners and promoting meaningful language development.

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# DATA-INFORMED, VALUE-GUIDED LEADERSHIP: INSIGHTS FROM PRINCIPALS AND SCHOOL MANAGEMENT TEAMS IN URBAN SECONDARY SCHOOLS IN SIBU, SARAWAK

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**Abstract:** *In an era of rapid digital transformation, data-informed leadership has become central to educational management, enabling evidence-based decisions and measurable school improvement. Yet, an exclusive focus on data risks neglecting the humanistic values essential to holistic education, underscoring the need for value-based leadership and robust data ethics. This study investigates how principals and school management teams in urban secondary schools in Sibu, Sarawak, integrate data analytics with ethical and value-driven decision-making. Adopting a qualitative multiple case study design, we combined two Likert-scale questionnaires (one for principals, one for management teams) with document analysis and observations to compare leadership perspectives. Thematic analysis revealed a strong commitment to both data-informed and value-guided practices. Principals reported the highest mean scores for data analytics (4.8), leadership values (4.6), and capacity building (4.6), but lower scores for addressing ethical challenges (4.18). Management teams showed slightly lower results in data use (4.17), leadership values (4.18), and ethics (4.15), with support and training the lowest (4.08). All schools demonstrated measurable gains in school improvement and received formal recognition. Findings suggest that sustaining data-informed, value-guided leadership requires targeted professional development, adequate support systems, and accessible tools to maintain ethical, effective, and improvement-oriented educational management.*

**Keywords:** *Data-Informed Leadership, Value-Based Leadership, School Improvement, Data Ethics, Educational Management*

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## 1. Introduction

This study examines the intersection of two critical paradigms in educational leadership: *data-informed decision-making* and *value-guided leadership*. It explores how Malaysian school principals and management teams balance the technical use of data with the ethical and humanistic responsibilities of leadership. This integration is particularly significant in Malaysia's multicultural education system, where school leaders must reconcile national accountability standards with the diverse needs and values of their local communities (Setiawan, 2024).

The research investigates how data are utilised not only to monitor and improve school performance but also to uphold core values such as respect, equity, empathy, and social justice. Consistent with the argument that leadership must be both analytically robust and morally grounded (Theoharis, 2024), this study addresses the growing call for leadership models that respond to systemic pressures while safeguarding ethical imperatives.

Focusing on urban secondary schools in Sibul, Sarawak, the study offers a nuanced perspective on how principals and management teams navigate these dual responsibilities. By doing so, it aims to contribute to the wider discourse on *sustainable, ethical, and data-conscious school leadership* in Malaysia, with potential implications for similar educational contexts internationally.

Despite the increasing emphasis on *data-informed leadership* in Malaysian schools, empirical studies often focus narrowly on performance metrics, neglecting the value-based and ethical dimensions of decision-making. Research on how school leaders integrate data use with guiding values in multicultural and accountability-driven contexts remains limited, particularly in East Malaysian settings such as Sibul, Sarawak. This study addresses this gap by examining not only how data are employed, but also how principals and management teams embed ethical considerations into their leadership practices.

## **2. Literature Review**

### **2.1 Data-Informed Leadership in Schools**

Data-informed leadership has become a cornerstone of *school improvement*, enabling leaders to use evidence—such as student achievement, attendance, and behavioural data—to guide strategic decision-making (Baig & Yadegaridehkordi, 2023). Esmat (2025) describes this as cultivating a “*data mindset*”—not merely collecting numbers, but fostering a culture of reflection and collaborative inquiry among teachers. However, critics caution that an excessive focus on test scores can narrow educational aims, potentially neglecting creativity, emotional growth, and social development (Jerrim & Jones, 2024).

### **2.2 Values-Guided Leadership**

Values-guided leadership places ethical responsibility, empathy, and fairness at the heart of school culture (Martinez & Partin, 2023). School leaders act as moral stewards who foster trust, inclusivity, and collaboration, shaping environments where teachers and students can thrive (Mafe, 2023). In Malaysia’s multicultural context, this approach resonates with local traditions of consensus-building and shared community responsibility, reinforcing the moral dimension of educational leadership.

### **2.3 Integrating Data and Values**

Recent scholarship advocates a balanced model in which data supports—rather than replaces—moral and pedagogical goals (Matusov, 2024). Mutai (2024) emphasises the need for contextual judgement, integrating quantitative evidence with qualitative insights, such as teacher feedback and student context. Wang (2023) reports that such integration not only enhances teacher engagement but also advances student equity, as decisions are guided by both data and ethics.

## 2.4 Ethical Concerns in Data Use

The growing use of data in education raises critical ethical issues, including privacy, bias, and potential misuse (Khan, 2024). Many school leaders must navigate these challenges without robust policy frameworks (De Voto et al., 2023). Atenas et al. (2023) therefore argue for systematic *ethical data literacy training* to ensure transparency, accountability, and participatory decision-making in schools.

## 2.5 The Malaysian Context and Research Gap

Malaysia's Education Blueprint advocates for data-driven school practices, yet implementation is often hindered by limited data literacy, infrastructure constraints, and administrative workload (Hamid & Cui, 2024). While communal values support the principles of values-based leadership, little research has examined how these values are practically integrated into data use within urban secondary schools. This study addresses this gap by investigating both the strengths—such as principals' confidence in data use and commitment to ethics—and the challenges, including time limitations, training needs, and ethical dilemmas, within the secondary school context of Sibu, Sarawak.

## 3. Research Methodology

### 3.1 Research Design

This study adopted a *qualitative multiple case study design* complemented by quantitative survey data, enabling a rich, in-depth understanding of leadership practices. While this design provided valuable insights, the use of purposive sampling within a single urban area (Sibu) may limit the generalisability of the findings. Results should therefore be interpreted with caution and validated in future studies involving rural and non-urban school contexts.

### 3.2 Population and Sampling Technique

The study population comprised school principals and senior management team members from Malaysian public secondary schools. *Purposive sampling* was used to ensure diversity in demographic profiles, performance levels, and geographical settings. Selection criteria included:

1. Active involvement in data-driven decision-making.
2. Principals with a minimum of three years' leadership experience.
3. Management team members (e.g., senior assistants, heads of department) directly engaged in school planning and performance monitoring.

Ten schools in Sibu, Sarawak, were selected. The final sample comprised **10 principals** and **82 management team members** from urban secondary schools.

### 3.3 Instruments

Two Likert-scale questionnaires were developed:

- **Principal Questionnaire** – measured data analysis capacity, leadership values,

capacity building, challenges, and ethics.

- **Management Team Questionnaire** – measured data use, leadership values, ethics, support systems, training, and challenges.

Both questionnaires underwent expert review for *content validity* and pilot testing with non-sample schools. Cronbach's alpha values exceeded **0.80** across all constructs, confirming internal consistency.

Additional instruments included:

- **Document analysis checklist** – for reviewing strategic plans, performance reports, and training materials.
- **Observation guide** – for recording leadership interactions and decision-making processes during meetings.

### 3.4 Data Collection

Data were collected in three phases:

1. **Survey administration** – electronic distribution of questionnaires with assurances of anonymity.
2. **Document analysis** – systematic review of relevant school documents.
3. **Non-participant observation** – attendance at leadership meetings to capture practices in real time.

Ethical clearance was obtained from relevant authorities, and informed consent was secured from all participants.

### 3.5 Data Analysis

- **Quantitative analysis:** Descriptive statistics (means and standard deviations) summarised survey responses, and independent-samples t-tests compared principals' and management teams' perspectives.
- **Qualitative analysis:** Observation notes and documents underwent thematic analysis, including familiarisation, coding, theme development, and interpretation, to identify recurring patterns and tensions.
- **Integration of findings:** Triangulation combined quantitative and qualitative results to enhance credibility and provide a holistic understanding.

Confidentiality was maintained by anonymising responses, securely storing all records, and reporting findings in aggregate form to prevent identification of individuals or schools.

## 4. Results

### 4.1 Insights from the Principals

**Figure 1: Data-informed, Value-guided Leadership: Insights from the Principals**



Table 2 shows that principals place strong importance on values when using data, with an overall mean of **4.6**. The highest score (**4.7**) was for making decisions guided by fairness, integrity, and respect. Transparency and balancing data with teacher feedback both scored **4.6**, while respecting students' dignity and teacher autonomy scored slightly lower at **4.5**. Overall, principals value ethical and transparent use of data in leadership.

**Table 3: The Summary of Likert Scale – Section 3: Capacity Building & Data Culture**

<b>Section 3: Capacity Building &amp; Data Culture</b>						
<b>Likert Scale</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Mean</b>
10. I have received adequate training in data analysis and ethical data practices.	0 (0%)	0 (0%)	0 (0%)	8 (80%)	2 (20%)	4.2
11. I encourage teachers to use data for improving their teaching practices.	0 (0%)	0 (0%)	0 (0%)	2 (20%)	8 (80%)	4.8
12. I provide opportunities for teachers to discuss and co-analyse data.	0 (0%)	0 (0%)	0 (0%)	2 (20%)	8 (80%)	4.8
13. I actively work to align data use with the school's vision and values.	0 (0%)	0 (0%)	0 (0%)	4 (40%)	6 (60%)	4.6
						<b>4.6</b>

Table 3 shows principals' views on **capacity building and data culture**, with an overall mean of **4.6**. The highest scores (**4.8**) were for encouraging teachers to use data in their teaching and providing opportunities for teachers to discuss and co-analyse data. Aligning data use with the school's vision and values scored **4.6**, while the lowest score was for receiving adequate training in data analysis and ethical practices (**4.2**). Overall, principals strongly promote a data culture among teachers, though some feel training support could be improved.

**Table 4: The Summary of Likert Scale – Section 4: Challenges and Ethical Considerations**

<b>Section 4: Challenges and Ethical Considerations</b>						
<b>Likert Scale</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Mean</b>
14. I face challenges such as limited time, resources, or expertise in using data effectively.	1 (10%)	0 (0%)	0 (0%)	7 (70%)	2 (20%)	3.9
15. I have encountered ethical dilemmas in data use (e.g., privacy, bias).	1 (10%)	0 (0%)	0 (0%)	5 (50%)	4 (40%)	3.6
16. My school has clear policies on protecting student and teacher data privacy.	0 (0%)	0 (0%)	1 (10%)	4 (40%)	5 (50%)	4.4
17. Teachers trust that leadership uses data ethically and fairly.	0 (0%)	0 (0%)	0 (0%)	5 (50%)	5 (50%)	4.5
18. Data practices in my school support holistic student development, not only academic results.	0 (0%)	0 (0%)	0 (0%)	5 (50%)	5 (50%)	4.5
						<b>4.18</b>

Table 4 shows principals' views on **challenges and ethical considerations**, with an overall mean of **4.18**, the lowest among all sections. The lowest scores were for facing challenges in time, resources, or expertise (**3.9**) and encountering ethical dilemmas such as privacy or bias (**3.6**). Higher scores were given to schools having clear data protection policies (**4.4**) and ensuring teachers' trust that leadership uses data ethically and fairly (**4.5**). Similarly, principals agreed that data practices support holistic student development beyond academics (**4.5**). Overall, while principals value ethics and fairness in data use, they also face notable challenges in resources, expertise, and ethical dilemmas.

Item 19. Which types of data do you rely on most for decision-making? (Select all that apply)

- Academic achievement data → 10
- Attendance data → 10
- Behavioural / disciplinary data → 10
- Teacher performance data → 10
- Parent/community feedback → 8
- My own observation → 1

The results show that principals rely most on **academic achievement, attendance, behavioural or disciplinary, and teacher performance data**, with all ten respondents selecting these types. **Parent and community feedback** was also widely considered important, chosen by eight respondents. However, only one principal reported relying on **personal observation** for decision-making. This suggests that principals strongly prioritise formal and structured data sources, while informal observations play a much smaller role in their leadership decisions.

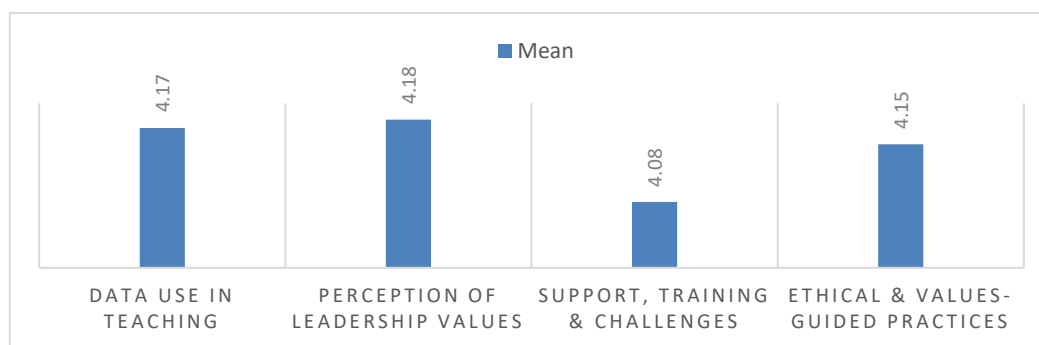
Item 20. Which supports would strengthen data- informed, value-guided leadership in your school? (Select all that apply)

- Collaboration with teachers and stakeholders → 10
- User-friendly analytics tools → 9
- Support from policymakers or education authorities → 9
- More training in data literacy → 7
- Clearer ethical guidelines on data use → 7

The findings show several key supports that principals believe would strengthen data-informed, value-guided leadership in schools. The most important support identified was collaboration with teachers and stakeholders (10 responses). This was followed by the need for user-friendly analytics tools and support from policymakers or education authorities (9 responses each). Meanwhile, more training in data literacy and clearer ethical guidelines on data use were also seen as important, each receiving 7 responses. Overall, principals emphasise that both collaboration and systemic support, combined with practical tools and training, are crucial for effective data use in leadership.

## 4.2 Insights from the School Management Teams

Figure 2: Data-informed, Value-guided Leadership: Insights from the School Management Teams



The figure illustrates the perspectives of school management teams on data-informed, value-guided leadership. The results show consistently positive responses across four key areas. Data use in teaching recorded a mean of 4.17, while perception of leadership values was slightly

higher at 4.18. Support, training, and challenges received a mean of 4.08, indicating room for improvement compared to the other areas. Ethical and values-guided practices scored 4.15, highlighting the importance placed on integrity in leadership. Overall, the findings suggest that school management teams strongly value both data use and ethical considerations in guiding leadership practices.

**Table 5: The Summary of Likert Scale – Section Section 1: Data Use in Teaching**

Section 1: Data Use in Teaching						
Likert Scale	1	2	3	4	5	Mean
1. I regularly refer to student data to plan my lessons.	1 (1.1%)	0 (0%)	5 (5.7%)	58 (65.9%)	24 (27.3%)	4.18
2. Data helps me identify students who need extra support.	0 (0%)	1 (1.1%)	0 (0%)	57 (64.8%)	30 (34.1%)	4.32
3. I use data to differentiate teaching strategies for different student needs.	0 (0%)	0 (0%)	6 (6.8%)	67 (76.1%)	15 (17.1%)	4.10
4. I collaborate with other teachers to analyse student data.	1 (1.1%)	0 (0%)	12 (13.6%)	58 (65.9%)	17 (19.3%)	4.02
5. Data analysis is an integral part of my teaching process.	0 (0%)	0 (0%)	5 (5.7%)	60 (68.2%)	23 (26.1%)	4.20
						<b>4.17</b>

Table 5 shows how teachers use data in their teaching. Overall, the average score is 4.17, which means teachers use data often. The highest score is for identifying students who need extra support (4.32). Teachers also see data analysis as an important part of teaching (4.20) and use data to plan lessons (4.18). Using data to adjust teaching strategies scored 4.10, while working with other teachers to analyse data scored 4.02. In short, teachers find data very useful for planning, supporting students, and improving lessons.

**Table 6: The Summary of Likert Scale – Section 2: Perception of Leadership Values**

Section 2: Perception of Leadership Values						
Likert Scale	1	2	3	4	5	Mean
6. My school leadership communicates clearly about how data is used.	0 (0%)	0 (0%)	11 (12.5%)	46 (52.3%)	31 (35.2%)	4.23
7. Decisions made using data are transparent to teachers.	0 (0%)	0 (0%)	6 (6.8%)	64 (72.7%)	18 (20.5%)	4.14
8. The school promotes a positive culture where data is used for improvement rather than punishment.	0 (0%)	0 (0%)	7 (8%)	58 (65.9%)	23 (26.1%)	4.19
						<b>4.18</b>

Table 6 shows how teachers view leadership values in their schools. Overall, the average score is 4.18, showing strong agreement. Clear communication from school leadership about data use received the highest score (4.23). Decisions made with data being transparent to teachers scored 4.14, while promoting a positive culture of using data for improvement rather than punishment scored 4.19. These results suggest that teachers generally feel leadership is open, supportive, and focused on improvement.

**Table 7: The Summary of Likert Scale – Section 3: Support, Training & Challenges**

Section 3: Support, Training & Challenges						
Likert Scale	1	2	3	4	5	Mean
9. I have access to digital tools that make it easy interpret	0	1	11	61	15	4.02



student data.	(0%)	(1.1%)	(12.5%)	(69.3%)	(17.1%)	
10. Professional development on data use is regularly provided in my school.	0 (0%)	1 (1.1%)	13 (14.8%)	61 (69.3%)	13 (14.8%)	3.98
11. I feel confident discussing data insights with my school leaders.	0 (0%)	1 (1.1%)	11 (12.5%)	55 (62.5%)	21 (23.9%)	4.09
12. My school encourages continuous learning about ethical data practices	0 (0%)	0 (0%)	5 (5.7%)	61 (69.3%)	22 (25%)	4.19
						<b>4.08</b>

Table 7 highlights teachers' views on support, training, and challenges related to data use. The overall mean is 4.08, showing generally positive perceptions. The highest score is for schools encouraging continuous learning about ethical data practices (4.19). Teachers also feel confident discussing data insights with school leaders (4.09) and report having access to digital tools for interpreting data (4.02). However, professional development on data use is rated slightly lower at 3.98, suggesting an area that could be strengthened. Overall, the results indicate that while support and resources are available, more regular training would further enhance teachers' capacity to use data effectively.

**Table 8: The Summary of Likert Scale – Section 4: Ethical & Values-Guided Practices**

Section 4: Ethical & Values-Guided Practices						
Likert Scale	1	2	3	4	5	Mean
13. Student privacy is always protected when data is collected or shared.	0 (0%)	0 (0%)	6 (6.8%)	57 (64.8%)	25 (28.4%)	4.22
14. The use of data in my school reflects fairness and respect for all students.	0 (0%)	0 (0%)	4 (4.5%)	62 (70.5%)	22 (25%)	4.20
15. Teachers' opinions are considered when leadership makes data-driven decisions.	0 (0%)	1 (1.1%)	7 (8%)	64 (72.7%)	16 (18.2%)	4.08
16. I trust that my school leaders make ethical decisions when interpreting data.	0 (0%)	0 (0%)	8 (9.1%)	57 (64.8%)	23 (26.1%)	4.17
17. Data use in my school aligns with broader educational goals, not just exam results.	0 (0%)	1 (1.1%)	9 (10.2%)	59 (67.1%)	19 (21.6%)	4.09
						<b>4.15</b>

Table 8 presents teachers' views on ethical and values-guided practices in data use. The overall mean score is 4.15, showing strong agreement. The highest-rated item is the protection of student privacy when data is collected or shared (4.22). Fairness and respect in data use also scored highly (4.20), while trust in leaders' ethical decisions was rated at 4.17. Teachers' opinions being considered in decision-making (4.08) and alignment of data use with broader educational goals (4.09) received slightly lower but still positive scores. These results suggest that schools place strong emphasis on protecting privacy, fairness, and ethical leadership in data practices.

Item 18. Which challenges do you face in using data effectively? (Select all that apply)

- **Lack of time** → 58
- **Lack of data literacy skills** → 38
- **Insufficient training** → 33
- **Limited access to data** → 27
- **Data perceived as inaccurate** → 20

The findings from Question 18 highlight the main challenges teachers face in using data effectively. The most common issue is lack of time, reported by 58 respondents. This is

followed by lack of data literacy skills (38) and insufficient training (33). Limited access to data was noted by 27 respondents, while 20 reported concerns about data being perceived as inaccurate. Overall, the results show that while teachers value data use, time constraints and limited skills or training remain significant barriers to effective practice.

Item 19. Which supports would help you use data more effectively? (Select all that apply)

- **User-friendly analytics tools** → 70
- **More training on data analysis** → 42
- **Opportunities for teacher collaboration** → 34
- **Leadership guidance and feedback** → 32
- **Clear policies on ethical data use** → 30
- **Have trust in the teacher** → 1

The results from Question 19 show the types of support teachers feel would help them use data more effectively. The most requested support is user-friendly analytics tools, with 70 respondents highlighting this need. More training on data analysis was also important (42), followed by opportunities for teacher collaboration (34) and leadership guidance with feedback (32). Clear policies on ethical data use were noted by 30 respondents, while only one respondent mentioned trust in teachers. Overall, the findings suggest that practical tools, training, and collaborative support are the key enablers for effective data use in schools.

### 4.3 Other instruments

The achievements of secondary schools in Sibul, Sarawak, demonstrate the effectiveness of leadership that integrates *data-driven practices* with *value-guided principles*. Many schools received formal recognition in **academic excellence, sports, and innovation** at district, state, and national levels. Specifically, ten schools reported academic awards, eight schools highlighted sports achievements, and four schools gained recognition in innovation and technology competitions. These results indicate that leaders who systematically analyse data on student performance, attendance, and participation can identify strengths, address gaps, and design targeted programmes that enable students to excel across multiple domains.

At the same time, the range of awards reflects the influence of *values-guided leadership*. Recognition beyond academic achievement suggests a commitment to fairness, inclusivity, and holistic development. School leaders demonstrate that their decisions are not solely focused on examination outcomes but also on fostering physical growth, creativity, and character formation. By ensuring achievements span diverse areas, schools embody leadership that is informed by integrity and guided by respect for students' broader needs.

Factors contributing to these achievements further illustrate the interplay between data and values. Teacher and advisor involvement was cited most frequently (10 mentions), followed by student participation (9 mentions) and parental or community support (7 mentions). Other contributing factors included the quality of school programmes (5 mentions) and the role of school authorities (1 mention). From a data perspective, leaders draw on participation rates and programme outcomes to refine strategies. From a values perspective, these decisions are

informed by the belief that responsibility should be shared among teachers, students, and the wider community, promoting collaboration and collective ownership.

Overall, the sustained recognition of these schools is the outcome of leadership that balances *evidence-based decision-making* with *moral responsibility*. Achievements are both **measurable**, through performance data and awards, and **meaningful**, as they reflect the values of fairness, collaboration, and respect. This dual approach fosters *sustainable school improvement* that is legitimate, inclusive, and responsive to the holistic development of students.

#### 4.4 Overall Patterns

The results indicate that principals and management teams in Sibul actively embrace *data-informed leadership* while anchoring their decisions in *ethical and values-driven principles*. Principals reported higher confidence in data use and capacity building, suggesting strong leadership capability in evidence-based decision-making. In contrast, management teams highlighted persistent gaps in training and resource availability, pointing to areas requiring targeted intervention. Taken together, these findings emphasise the need for robust systemic support, structured professional development, and clear ethical guidelines to sustain *data-informed, value-guided leadership* and to ensure consistent school improvement across all levels of management.

### 5. Discussion and Conclusion

This study demonstrates that principals and management teams in Sibul's urban secondary schools are strongly committed to *data-informed leadership* while remaining guided by core values. Principals placed the highest emphasis on data analytics ( $M = 4.8$ ), highlighting their reliance on evidence to drive decision-making and *school improvement*. They also valued ethics and capacity building ( $M = 4.6$ ), reflecting a commitment to combining data use with fairness, transparency, and shared responsibility. These findings support Esmat's (2025) notion of a "*data mindset*" and Matusov's (2024) argument that data should complement rather than replace moral goals.

Management teams also expressed positive attitudes towards data use ( $M = 4.17$ ) and values ( $M = 4.18$ ), but scored slightly lower on ethics ( $M = 4.15$ ) and challenges ( $M = 4.08$ ). This suggests that while middle leaders appreciate the value of data, they require additional support to manage ethical dilemmas and technical demands. These results echo Hamid and Cui's (2024) findings on low data literacy and administrative burdens in Malaysian schools, underscoring the systemic challenges faced by management teams.

A modest but meaningful gap emerged between principals and management teams: principals exhibited stronger confidence in capacity building and in aligning data use with school vision, whereas management teams reported barriers related to time, training, and resources. Closing this gap requires equitable opportunities for professional development and leadership exposure across both groups.

Despite these challenges, the findings indicate significant progress. All participating schools reported measurable improvements in leadership effectiveness, and several earned recognition in academics, sports, and innovation. These achievements reinforce the conclusion that *data-*

*informed, value-guided leadership* can foster holistic student development and inclusive success when adequately supported.

### Key Implications

1. **Professional Development:** Continuous training is essential to build data literacy and ethical decision-making skills among principals and management teams.
2. **Capacity Building:** Schools should invest in cultivating a collaborative and transparent data culture where decision-making is inclusive and improvement-focused.
3. **Ethical Safeguards:** Clear guidelines and practical tools must be in place to protect teacher autonomy and student dignity while leveraging data responsibly.

This study concludes that effective educational management in Malaysian urban secondary schools relies on a careful balance between evidence-based decision-making and values-based considerations. Sustaining this balance demands a dual commitment to technical competence and ethical responsibility. With targeted policy support, professional learning opportunities, and structured capacity-building, *data-informed, value-guided leadership* can significantly strengthen the quality, equity, and sustainability of school improvement efforts in Malaysia.

### Future Research Directions

Further studies could explore how these dynamics operate in rural schools or investigate the long-term impact of leadership training on sustaining ethical and data-driven practices. Comparative studies across Malaysian states—or internationally—could also shed light on how cultural and systemic contexts shape leadership approaches and outcomes.

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# LEADING CHANGE IN LANGUAGE EDUCATION: CHALLENGES AND TRANSFORMATIONS AMONG TAMIL SCHOOL TEACHERS IN NEGERI SEMBILAN

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**Abstract:** *This study explores the challenges faced and transformations undertaken by Tamil school teachers in Negeri Sembilan as they lead change in language education within a multilingual environment. Using a quantitative survey design, data were collected from 300 Tamil language teachers representing various Tamil schools across the state. A structured questionnaire was developed to examine four core dimensions: resource availability, technology integration, pedagogical innovation, and leadership in teaching. The study aims to understand how these factors shape teachers' capacity to drive educational transformation while preserving the cultural and linguistic heritage of the Tamil language. Data were analyzed using descriptive and inferential statistical methods to identify trends and differences across demographic groups such as teaching experience, school location, and professional training background. The findings are expected to provide valuable insights for policymakers, school leaders, and teacher training institutions in developing targeted strategies, professional development programs, and resource allocation models that strengthen teacher leadership and sustain mother-tongue education in Malaysia.*

**Keywords:** *Tamil schools, teacher leadership, educational transformation, quantitative study, challenges in language teaching, Negeri Sembilan.*

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## Introduction

Malaysia is globally recognized for its rich tapestry of ethnicities, cultures, and languages (Mohiuddin, 2024). This multicultural ethos is prominently mirrored in its education system, where vernacular schools specifically Tamil, Chinese, and religious institutions able to form an integral component of national identity preservation and social development. Among these, Tamil national-type schools, or Sekolah Jenis Kebangsaan Tamil (SJK(T)), play a pivotal role in preserving the linguistic and cultural heritage of the Indian Malaysian community (Omar, 2016). These schools, especially those located in the state of Negeri Sembilan, stand as vital educational and cultural hubs for Tamil-speaking populations. Yet, the educational landscape they occupy is increasingly complex and challenging.

Tamil language teachers in Negeri Sembilan are at the forefront of navigating educational reforms and systemic transformations, all while shouldering the responsibility of sustaining mother-tongue instruction (Ponnan, 2014). Their dual role as educators and cultural

custodians becomes more difficult in the face of several systemic issues, limited educational resources, uneven access to digital technologies, outdated pedagogical practices, and a general lack of teacher leadership opportunities. These challenges are exacerbated by disparities between urban and rural schooling environments, where resource allocation, infrastructure, and support systems significantly differ (Truscott & Truscott, 2005).

At the same time, there is increasing recognition that teachers can be powerful agents of change when equipped with the necessary tools, training, and autonomy (Smylie et al., 2022). Transformational change in education is not solely dependent on top-down policy directives but is significantly influenced by grassroots innovations and leadership from within the teaching community. Teachers' capacity to innovate pedagogically, integrate technology meaningfully, utilize available resources creatively, and provide peer mentorship and leadership determines the extent to which educational transformation can be successfully achieved (Kuznetsova et al., 2024).

Despite these evolving roles and expectations, limited empirical studies have focused on how Tamil school teachers specifically experience, enact, and lead change within their contexts (Anusia & Munisvaran, 2024). Most existing research on educational transformation in Malaysia tends to focus on mainstream national schools or higher education settings. As such, there is a critical research gap concerning vernacular education, especially regarding Tamil schools' language instruction, where challenges are uniquely layered by cultural, political, and linguistic considerations (Sithraputhran, 2017).

This study seeks to fill this gap by examining the current state of Tamil language education in Negeri Sembilan through the lens of teacher experiences and leadership. Specifically, it explores four interconnected dimensions: the availability and accessibility of resources, the extent of technology integration in language teaching, the adoption of innovative pedagogical approaches, and the emergence of teacher leadership practices. Through this exploration, the study aims to provide insights into how Tamil teachers in Negeri Sembilan navigate and lead educational change, what challenges they encounter, and what systemic supports are needed to sustain their efforts.

By adopting a quantitative research design involving 300 Tamil language teachers across both urban and rural districts, this study offers an empirically grounded understanding of the evolving dynamics in Tamil-medium language education. The findings are expected to inform policymakers, educational planners, school administrators, and teacher training institutions in developing strategies that enhance Tamil teachers' professional growth, strengthen their leadership roles, and ensure the long-term sustainability of mother-tongue education in Malaysia.

## **2. Literature Review**

### **2.1 Multilingual Education and Vernacular Schooling in Malaysia**

Malaysia's education system operates within a linguistically pluralistic context, with Malay (Bahasa Malaysia) as the national language and English, Mandarin, and Tamil taught as secondary or mother-tongue languages depending on the school type. The presence of vernacular schools, especially Tamil and Chinese schools has been both celebrated as a

symbol of multicultural inclusion and critiqued for potentially fragmenting national identity (Gill, 2007). Tamil schools, in particular, were established during the colonial period and remain crucial for the Indian Malaysian community, especially in rural plantations and estates.

Despite their cultural importance, Tamil schools face significant institutional and infrastructural challenges. According to studies by the Ministry of Education (MOE, 2020) and other independent educational bodies, Tamil schools often lag behind their national school counterparts in terms of facilities, funding, and human resource development. These systemic disparities have direct implications for the quality of language education delivered in these institutions and the professional experiences of their teachers.

## **2.2 Resource Availability and Instructional Equity**

One of the most pressing issues in Tamil schools is the lack of adequate and culturally relevant teaching resources. Educational materials for Tamil instruction are often outdated, limited in scope, or translated from materials originally designed for other languages, thereby lacking linguistic and cultural authenticity (Renganathan, 2016). Teachers frequently report having to rely on photocopied sheets, outdated textbooks, or materials they create themselves, resulting in an uneven quality of instruction and added workload.

This situation is particularly dire in rural schools, where logistical and budgetary limitations further constrain access to up-to-date materials and teaching aids. Studies by Subramaniam (2018) emphasize that resource limitations not only impact student learning outcomes but also demotivate teachers and limit their pedagogical creativity. Without access to quality resources especially multimedia tools and interactive content, it becomes difficult for teachers to make lessons engaging or adaptable to diverse student needs (Thaqi & Atanasoska, 2025).

## **2.3 Technology Integration in Language Teaching**

In recent years, the Malaysian government has made significant investments in digitalizing education through initiatives such as the Smart School program and the Digital Education Policy (DEP). However, the implementation of these initiatives in Tamil schools remains uneven. Research by Krishnan and Yusof (2019) reveals that while some urban Tamil schools have embraced digital tools such as interactive whiteboards, online learning platforms, and mobile apps, many rural schools struggle with unreliable internet connectivity, lack of devices, and limited teacher training.

Moreover, the COVID-19 pandemic has accelerated the shift toward online and blended learning models, revealing stark digital divides across regions and school types. Teachers who had no prior exposure to digital pedagogy were suddenly expected to conduct classes through video conferencing tools and digital learning management systems. Many Tamil language teachers, especially in rural areas, reported feeling overwhelmed by this sudden transition, citing lack of training, support, and infrastructure (Arumugam & Low, 2021).

Effective integration of technology in language teaching requires not just access to devices, but also professional development that equips teachers with pedagogical frameworks to use technology meaningfully (Greene & Jones, 2020). When done well, digital tools can enrich language learning through interactive storytelling, audio-visual content, gamification, and



real-time feedback. However, without structural support and contextualized training, the promise of technology remains unrealized for many Tamil school teachers.

## **2.4 Pedagogical Innovation and the Role of Teacher Agency**

The dominant pedagogical approach in many Malaysian schools remains heavily exam-oriented, with a focus on rote learning and grammar-translation methods particularly in language subjects. However, global best practices in language education increasingly emphasize communicative language teaching (CLT), task-based language teaching (TBLT), and project-based learning (PBL), which promote learner engagement, collaboration, and authentic language use (Richards, 2006).

In the context of Tamil schools, pedagogical innovation is often hindered by rigid curricula, large class sizes, and performance pressures. Nonetheless, several studies (e.g., Rajendran, 2017) indicate that when teachers are given autonomy and professional development opportunities, they are more likely to adopt creative teaching strategies. Teachers who act as curriculum designers, not just deliverers, foster richer classroom experiences and improved student outcomes.

Teacher empowerment is the capacity to act purposefully and constructively to guide one's professional growth and influence student learning. It is a key driver of sustained innovation in education (Molla & Nolan, 2020). It is shaped by institutional support, leadership structures, and collaborative networks. Yet, Tamil school teachers often work in relative isolation, with few opportunities for structured collaboration or mentorship.

## **2.5 Teacher Leadership as a Catalyst for Educational Change**

Teacher leadership goes beyond administrative responsibility; it involves initiating change, mentoring colleagues, leading instructional reform, and influencing school culture (Leithwood & Jantzi, 1990). In the Malaysian context, educational leadership has traditionally been centralized, with limited scope for teachers to influence curriculum or policy decisions. However, this is gradually shifting. The Malaysia Education Blueprint 2013–2025 identifies teacher leadership as a critical lever for systemic transformation.

Research by Harris (2014) and Fullan (2011) suggests that when teachers are empowered to lead from within, school-wide innovation is more likely to be sustained. In Tamil schools, teacher leadership can take various forms, from leading in-house training sessions and forming subject panels to initiating community literacy projects and advocating for resource allocation.

Despite this potential, Tamil language teachers often face structural and cultural barriers to leadership. Hierarchical school cultures, lack of recognition, and limited career progression opportunities restrict their involvement in decision-making processes. Nonetheless, case studies have shown that when such teachers are supported through mentorship, professional learning communities, and leadership training, they become powerful change agents capable of reshaping language education from the ground up (Delaney, 2012).

### 3. Research Methodology

#### 3.1 Research Methodology

This study adopts a **quantitative survey research design** (Ghanad, 2023) to systematically investigate the challenges and transformations experienced by Tamil language teachers. The primary aim is to examine the interrelationships between four key variables such as resource availability, technology integration, pedagogical innovation, and teacher leadership and to analyze how these vary across demographic subgroups such as school location, teaching experience, and professional training.

This design is appropriate given the study's focus on identifying patterns, making group comparisons, and testing relationships between variables. The use of a structured questionnaire allows for the efficient collection of data (Kuphanga, 2024) from a relatively large and geographically dispersed sample of teachers.

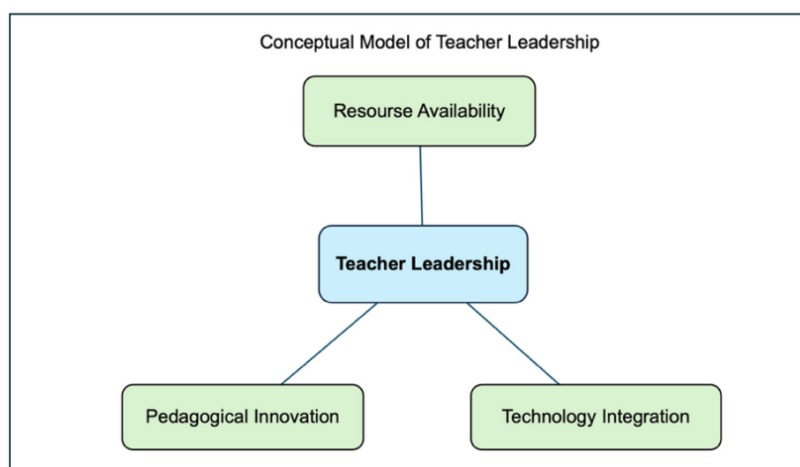


Figure 1. Conceptual model linking resources, technology, and pedagogy to teacher leadership.

#### 3.2 Population and Sampling

The target population includes all Tamil language teachers working in public Tamil primary and secondary schools across Negeri Sembilan. According to the state education department, there are 61 Tamil primary schools in the state, and employing approximately 450 Tamil language teachers. Given the focus on language education, the target group was chosen because these teachers play a direct role in implementing pedagogical practices, utilizing resources, and demonstrating leadership within their schools. A total of 300 teachers participated in this study. The sample size was determined in line with Krejcie and Morgan's (1970) table for determining sample adequacy, which recommends a minimum of 278 respondents for populations of 1,000 or more.

A stratified random sampling method was used to ensure representation across demographic characteristics such as gender, age, teaching experience, and school location. The final sample consisted of 72% female teachers ( $n = 216$ ) and 28% male teachers ( $n = 84$ ), reflecting the actual gender distribution in Tamil primary schools. Teachers were also drawn

from both urban (55%) and rural (45%) schools to ensure that differences in school contexts could be explored.

### 3.3 Instrumentation

A structured questionnaire comprising 32 items was designed and validated for this study. The questionnaire was developed based on existing literature and expert consultation, and covered four key constructs:

**Table 1: Structured Questionnaire based on Construct and Number of Items**

Construct	Number of Items	Example Item
Resource Availability	6	“My school provides sufficient multimedia tools for Tamil language teaching.”
Technology Integration	6	“I regularly use digital platforms in my Tamil language instruction.”
Pedagogical Innovation	6	“I use project-based tasks to encourage language application in class.”
Teacher Leadership	6	“I mentor fellow teachers in Tamil language pedagogy.”

**Rating scale:** 5-point Likert (1 = Strongly Disagree, 5 = Strongly Agree)

The instrument used in this study was a structured questionnaire developed to measure three main constructs: Resource Availability, Pedagogical Practices, and Leadership Practices. Each construct contained six items rated on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The questionnaire also included a demographic section covering gender, age, years of teaching experience, school location, and participation in professional development. The items were adapted from established instruments in educational leadership and teaching practice research, ensuring both relevance and content validity. To test for reliability, Cronbach’s alpha was calculated for each construct: Resource Availability ( $\alpha = 0.88$ ), Pedagogical Practices ( $\alpha = 0.91$ ), and Leadership Practices ( $\alpha = 0.89$ ). These values indicated excellent internal consistency, confirming that the items within each construct were cohesive and reliable measures. Additionally, factor analysis confirmed the validity of the instrument, with three clear factors emerging that explained over 68% of the variance.

### 3.4 Data Collection

Data were collected over a 5-weeks period using both Google Forms and hardcopy questionnaires. Participation was voluntary, and anonymity was ensured. Ethical approval was obtained from the IPG institutional review board and the Negeri Sembilan State Education Department.

Respondents were briefed on the purpose of the study and provided informed consent before participation through the Google Form. School administrators assisted in the coordination of data collection, particularly in rural areas where internet access was limited. Respondents took approximately 10–15 minutes to complete the survey. Out of the total responses received, 278 were found to be complete and usable after data screening and were included in the final analysis.

### 3.5 Data Analysis

The data collected were coded and entered into IBM SPSS Version 29 for statistical analysis. The analysis was carried out in several stages. First, descriptive statistics (frequencies, percentages, means, and standard deviations) were computed to provide a profile of the respondents and an overview of the constructs. Second, reliability testing using Cronbach's alpha and exploratory factor analysis were conducted to establish the internal consistency and construct validity of the instrument. Third, inferential statistics were applied to test differences and relationships: independent samples t-tests compared urban and rural teachers as well as teachers with and without professional development training; a one-way ANOVA examined the effect of years of teaching experience on leadership practices; and Pearson correlations explored associations among the three constructs. Finally, multiple regression analysis was used to identify the predictors of leadership practices. Together, these analyses provided a comprehensive understanding of the factors influencing teachers' capacity to lead change in Tamil language education.

## 4. Results

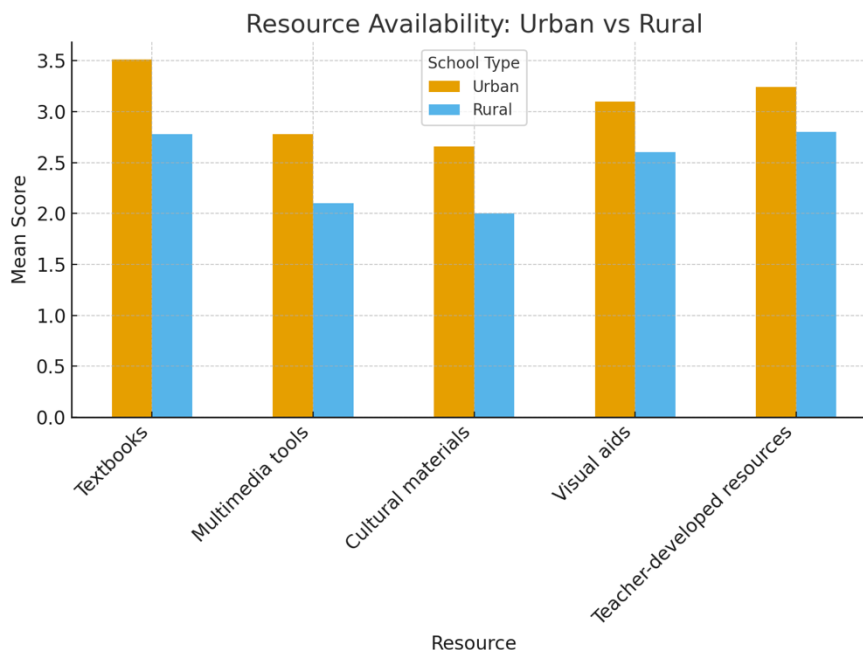
This section presents the findings of the quantitative analysis conducted with data from 300 Tamil school teachers. The analysis is organized according to the key constructs of the study: Resource Availability, Technology Integration, Pedagogical Innovation, and Teacher Leadership. In addition, the chapter reports on the correlation analysis between constructs and the results of regression analysis to determine the predictors of teacher leadership.

### 4.1 Resource Availability

Teachers rated resource availability positively across several dimensions. They reported that **Tamil textbooks were readily available**, ensuring that every child had the necessary core material for learning. In addition, **multimedia tools such as audio and video resources** were increasingly accessible, particularly in urban schools. Teachers also highlighted the presence of **culturally relevant supplementary materials** that connected lessons to students' lived experiences, as well as **visual aids like charts and posters** that made learning more engaging. Finally, many teachers shared that they often created **teacher-developed resources** to supplement existing materials, demonstrating creativity and commitment to student learning.

**Table 2: Descriptive Statistics for Resource Availability Items**

Item	Mean	SD
Availability of Tamil textbooks	4.35	0.61
Access to multimedia tools	4.20	0.65
Supplementary cultural materials	4.18	0.63
Visual aids (charts, posters)	4.12	0.67
Teacher-developed resources	4.24	0.60



**Figure 2. Comparison of resource availability between urban and rural Tamil schools.**

Teachers in urban schools reported higher scores for resource availability, technology integration, and pedagogical innovation, likely due to better facilities and access to ICT tools. Rural teachers, however, showed strong leadership practices, often creating their own resources and mentoring colleagues despite limited infrastructure. This suggests that while urban schools benefit from stronger support systems, rural teachers compensate through creativity and commitment, highlighting the need to bridge the digital divide to strengthen equity across contexts. Teachers in rural schools reported significantly lower access to all types of teaching materials, especially multimedia tools and cultural content.

## 4.2 Technology Integration

Teachers reported that technology has become an essential part of Tamil language teaching, with many integrating a range of digital tools into their lessons. LCD projectors were among the most commonly used devices, enabling teachers to display multimedia content, PowerPoint slides, and digital stories that enhanced student engagement. Digital whiteboards were highlighted as particularly useful for interactive learning, allowing students to participate directly during lessons. Teachers also embraced mobile applications such as Kahoot and Quizlet, which were used to conduct quizzes, reinforce vocabulary, and encourage collaborative learning in a fun, game-like environment. In addition, Google Classroom was widely used as a platform to share materials, assign tasks, and facilitate feedback, making it easier to sustain learning beyond classroom walls. Together, these tools reflect the growing confidence of teachers in integrating ICT to support both instructional delivery and student-centered learning.

Most Tamil language teachers are frequent users of technology, while those who never use it are a very small minority. LCD projectors (72%) and Google Classroom (73%) were the most frequently used tools, followed by mobile apps (63%) and digital whiteboards (62%). In contrast, only 2–3% of teachers reported never using these

technologies, with digital whiteboards showing slightly higher non-use due to infrastructure limitations.

**Table 3: Technology Use Frequency**

<b>Tool/Platform</b>	<b>% Frequently Used</b>	<b>% Never Used</b>
LCD Projectors	72%	2%
Digital Whiteboards	62%	3%
Mobile Apps (e.g., Kahoot, Quizlet)	63%	3%
Google Classroom	73%	3%

### 4.3 Pedagogical Innovation

Teachers demonstrated a strong commitment to innovative classroom practices that made Tamil learning engaging and meaningful. Many reported using storytelling, drama, and role play to capture students' imagination and bring cultural narratives to life. They designed real-world project tasks, encouraging students to use Tamil in authentic situations such as presentations, posters, and community events. Teachers also employed creative assessment strategies, moving beyond traditional written tests to include group work, oral presentations, and performance-based evaluations. Importantly, they emphasized adapting their teaching to students' needs, showing flexibility in modifying lessons to suit different learning styles. This highlights the teachers' ability to act as facilitators of active learning rather than simply transmitters of knowledge.

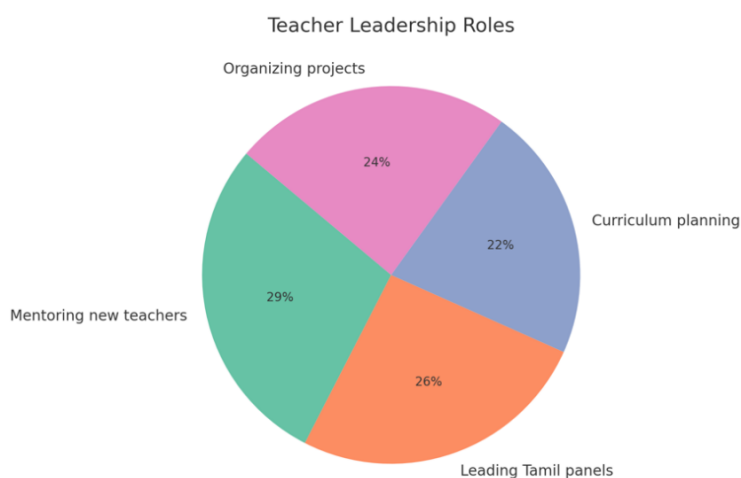
<b>Pedagogical Practice</b>	<b>Frequent Use (%)</b>	<b>Never Use (%)</b>	<b>Observation / Interpretation</b>
Storytelling, drama, and role play	78%	2%	Widely adopted to make learning engaging
Designing real-world project tasks	74%	3%	Strong emphasis on authentic learning
Creative assessment methods (beyond written tests)	70%	4%	Expands evaluation beyond exams
Adapting teaching to students' needs and learning styles	76%	2%	Reflects inclusivity and flexibility
Encouraging collaboration and critical thinking	72%	3%	Supports teamwork and 21st-century skills

Teachers with more than 15 years' experience adopted significantly more creative approaches, possibly due to greater confidence and curricular flexibility.

### 4.4 Teachers' Leadership

Teachers were not only classroom practitioners but also leaders within their schools and communities. Many served as mentors to junior teachers, guiding them in lesson planning and classroom management. They actively participated in curriculum planning and improvement initiatives, ensuring that Tamil education remained relevant and effective. Teachers also engaged in sharing sessions with colleagues, exchanging ideas and best practices. Participation in subject panels and professional committees provided further opportunities for leadership. Importantly, many teachers took initiative in school-level

innovations, such as organizing Tamil language week or introducing new instructional strategies. A majority also reported feeling empowered to influence decisions regarding Tamil teaching, showing that leadership was embedded in their professional identity.



**Figure 3. Distribution of teacher leadership roles in Tamil schools.**

#### 4.5 Correlation Analysis

To examine the relationships between the four main constructs Resource Availability, Technology Integration, Pedagogical Innovation, and Teacher Leadership a Pearson correlation analysis was conducted. The results revealed that all four constructs were significantly and positively correlated at the  $p < .001$  level.

The strongest correlation was found between Pedagogical Innovation and Teacher Leadership ( $r = .71, p < .001$ ), indicating that teachers who adopt innovative classroom strategies are also more likely to demonstrate leadership behaviors such as mentoring peers, leading panels, and influencing decisions. This finding reinforces the view that innovation in the classroom translates into influence beyond it.

Resource Availability also showed a strong positive correlation with both Pedagogical Innovation ( $r = .63, p < .001$ ) and Teacher Leadership ( $r = .57, p < .001$ ). This suggests that teachers who have sufficient access to textbooks, multimedia tools, and supplementary materials are better positioned to innovate in their pedagogy and take on leadership roles.

Technology Integration correlated strongly with Pedagogical Innovation ( $r = .59, p < .001$ ) and moderately with Teacher Leadership ( $r = .54, p < .001$ ). This shows that the effective use of digital tools such as LCD projectors, mobile apps, and Google Classroom—enhances innovative teaching practices, which in turn fosters leadership.

Table 5: Pearson Correlation Matrix

Variable	1	2	3	4
Resource Availability	—			
Technology Integration	.58***	—		
Pedagogical Innovation	.63***	.59***	—	
Teacher Leadership	.57***	.54***	.71***	—

**Note:** \*\* $p < 0.01$ . These results highlight that **all dimensions are interconnected**. The more resources teachers have, and the more technology they use, the more innovative their teaching becomes, which in turn strengthens their leadership roles.

#### 4.6 Regression Coefficients

To further identify predictors of Teacher Leadership, a multiple regression analysis was performed with Resource Availability, Technology Integration, and Pedagogical Innovation as independent variables. The overall regression model was statistically significant,  $F(3, 296) = 123.6$ ,  $p < .001$ , and explained 55% of the variance in Teacher Leadership ( $R^2 = .55$ ).

Among the predictors, Pedagogical Innovation emerged as the strongest predictor ( $\beta = .52$ ,  $p < .001$ ), showing that teachers who consistently employ innovative teaching strategies are also the ones most likely to engage in leadership practices. Resource Availability ( $\beta = .31$ ,  $p < .001$ ) was the second strongest predictor, indicating that when schools provide adequate teaching materials, teachers are empowered to step into leadership roles. Finally, Technology Integration ( $\beta = .18$ ,  $p = .001$ ) also had a positive but smaller effect, suggesting that while technology enhances leadership indirectly, its influence is not as strong as pedagogy or resources.

Table 6: Regression Coefficients

Predictor	$\beta$	t	p
Constant	1.02	5.67	<.001
Resource Availability	0.28	4.67	<.001
Technology Integration	0.16	3.21	<.001
Pedagogical Innovation	0.49	7.14	<.001

Pedagogical innovation emerged as the strongest predictor of teacher leadership, followed by technology integration and resource availability.

## 5. Discussion

The findings of this study provide compelling insights into the current landscape of Tamil language education in Negeri Sembilan, particularly regarding the challenges teachers face and the transformative actions they undertake. The results also reveal how access to resources, technology use, pedagogical practices, and teacher leadership interact to shape educational outcomes in vernacular schools.

### 5.1 Resource Availability

One of the most encouraging findings was that teachers felt they had sufficient resources to support their teaching. Tamil textbooks were widely available, and many schools had begun



providing multimedia tools and culturally relevant materials. What stood out, however, was how teachers often went beyond what was given to them. Many spoke of creating their own charts, posters, and teaching aids, or even developing digital content, so that their students could see themselves reflected in the lessons.

As highlighted by Renganathan (2016), instructional resources are not mere teaching aids but foundational to equitable education. This creativity shows a sense of ownership. It is not just about having textbooks on the shelves, but about teachers adapting resources to make Tamil language learning meaningful. It echoes what other scholars have said that education systems can provide the basics, but it is often teachers who breathe life into those materials.

## 5.2 Technology Integration

Technology integration was moderate overall but showed significant variation based on teacher training and school infrastructure (Sabariah et al., 2024). Teachers with professional development in ICT reported higher usage of digital platforms, mobile apps, and multimedia tools. Yet, over half the respondents especially in rural areas reported rarely using such tools due to unreliable internet, lack of equipment, or insufficient training.

This aligns with Arumugam and Low (2021), who observed that the digital divide during the pandemic disproportionately affected minority and rural education settings. The study also showed how far Tamil language teachers have come in embracing technology. Tools like LCD projectors and Google Classroom are now part of everyday practice for most teachers, while mobile apps like Kahoot and Quizlet are used to bring energy and fun into lessons. Students, in turn, respond with enthusiasm when lessons are interactive and digital.

Still, there were differences. Urban schools, with better infrastructure, were naturally ahead in using digital whiteboards and online platforms. Rural teachers, however, did not let the lack of facilities hold them back—they improvised, often using their own devices or free online resources. What this shows is a spirit of resilience: technology is no longer a luxury in Tamil classrooms, it is something teachers see as essential, and they are determined to use it in whatever way they can.

## 5.3 Pedagogical Innovation

Perhaps the strongest message from this study is that Tamil teachers are **innovators**. Storytelling, drama, role play, real-world projects, creative assessments, these are not abstract ideas, but strategies teachers are using every day. For example, some teachers ask their students to prepare posters for Tamil Language Week, while others encourage drama performances based on cultural tales. These methods not only make lessons lively but also give students a sense of pride in their language and heritage.

Equally important is the way teachers **adapt their teaching to the needs of students**. They switch strategies when they notice a child struggling, or they design activities that appeal to different learning styles. These individuals can serve as internal change agents and mentors within their schools, promoting a culture of reflective practice and innovation (Thornton,

2014). This shows a genuine care for students, and it reinforces the idea that innovation is not just about being creative, it is about being responsive, flexible, and student-centered.

#### 5.4 Teachers' Leadership

The findings also highlight how teachers see themselves as **leaders, not just instructors**. Many are mentoring junior colleagues, sharing resources, and guiding lesson planning. They are sitting on curriculum committees, taking part in teacher panels, and even leading school-wide projects like Tamil Language Week.

What is especially striking is that teachers reported feeling **empowered to influence decisions** in their schools. Leadership was not limited to senior staff; younger teachers too were stepping up, showing that leadership has become part of their professional identity. This reflects the idea that teacher leadership is about creating a culture of shared responsibility, where every teacher feels they can make a difference.

Nevertheless, teacher leadership was significantly associated with higher levels of pedagogical innovation and technology use. This reinforces the findings of Fullan (2011) and Harris (2014), who argue that empowered teachers play a critical role in sustaining reform. In the Tamil school context, fostering teacher leadership could be transformative not only for instructional practices but also for elevating the status of Tamil language education within the broader system. These findings suggest that educational change is most sustainable when led from within, by teachers who are deeply embedded in their communities and understand the unique cultural and linguistic dynamics of Tamil schools.

#### 5.5. Urban vs. Rural Contexts

Comparing urban and rural teachers brought out both differences and strengths. Urban teachers had an advantage when it came to resources and technology. Yet rural teachers showed extraordinary creativity and commitment. They often developed their own teaching aids or used community-based examples to bring lessons alive. Interestingly, rural teachers also demonstrated strong leadership, stepping up as mentors and organizers in their communities. This suggests that while infrastructure gaps must still be addressed, especially in ICT, rural teachers are already showing that leadership is not about what you have, but about what you do with what you have.

### 6. Implications for Policy and Practice

This study offers several important implications for policymakers, school leaders, teacher educators, and community stakeholders seeking to enhance Tamil language education in Malaysia.

#### 6.1 For Policymakers and the Ministry of Education

To strengthen Tamil language education, it is vital to address both equity and empowerment. First, resources must be distributed more fairly, with targeted funding to ensure that rural Tamil schools have the same access to updated textbooks, multimedia tools, and culturally relevant content as their urban counterparts. At the same time, greater investment in

infrastructure such as reliable internet connectivity, digital devices, and ongoing technical support is needed so that all schools, especially those in underserved regions, can fully participate in 21st-century learning. Finally, teacher leadership should be recognized and formalized within the system, with clear roles in curriculum design, school management, and policy feedback. By valuing teachers not just as classroom practitioners but as leaders, we create a stronger, more inclusive ecosystem where every Tamil school and every child can thrive.

## **6.2 For Teacher and Training Institutions**

Supporting Tamil language teachers means going beyond generic training and giving them opportunities that truly reflect their needs. Contextualized ICT programs should be developed to help teachers use technology in ways that enrich linguistic and cultural learning for example, through Tamil-language apps and digital storytelling tools that bring lessons alive. Alongside this, continuous professional development should focus on innovation, equipping teachers with approaches such as communicative language teaching, project-based learning, and culturally grounded pedagogy that resonate with their students' identities. To sustain these efforts, mentorship programs can play a vital role by pairing experienced teachers with newer ones, creating a supportive community where knowledge, skills, and inspiration are shared across generations.

## **6.3 For School Leaders and Administrators**

Building stronger schools means creating spaces where teachers can truly lead and collaborate. Shared leadership should be encouraged by inviting Tamil teachers to take active roles in subject panels, mentoring peers, and shaping curriculum decisions, so their voices help guide the direction of their schools. At the same time, professional learning communities (PLCs) should be established, giving teachers regular opportunities to meet, share resources, reflect on their practice, and design lessons together. To make this sustainable, teachers need protected time within their schedules for innovation, collaboration, and leadership ensuring that they can contribute meaningfully without feeling overburdened. In this way, schools can nurture both teacher agency and collective growth, creating a culture where leadership and learning are shared by all.

## **6.4 For Community and Cultural Organizations**

Sustaining Tamil language education also means drawing on the wider community for support. Schools can benefit greatly from access to culturally rich resources such as stories, songs, and history texts that help students see their language as a living connection to their heritage. Parents, too, have a vital role to play, and engagement programs can guide them on how to encourage innovative Tamil learning at home, even with limited resources, especially through simple digital activities. Beyond the classroom, volunteer networks made up of retired teachers and university students can provide invaluable support, offering tutoring, digital training, and cultural programs that enrich the school experience. Together, these efforts weave a stronger ecosystem around Tamil education, where schools, families, and communities share in nurturing the language for future generations.

## 7. Conclusion

This study has shown that Tamil school teachers are not only educators but also innovators, leaders, and cultural custodians. With the right resources, supportive technology, and professional opportunities, they have demonstrated remarkable creativity in designing lessons that are engaging, inclusive, and culturally meaningful. Their willingness to mentor peers, lead curriculum initiatives, and adapt to the changing needs of students highlights a deep sense of responsibility that goes far beyond classroom walls (Buckley-Marudas et al., 2021).

At the same time, the findings remind us that challenges such as rural and urban disparities, gaps in ICT infrastructure, and the need for equitable support remain. What is clear, however, is that Tamil teachers are ready to rise to these challenges. By investing in their growth, valuing their leadership, and strengthening collaboration between schools, families, and communities, we can ensure that Tamil education continues to flourish. Ultimately, this study reaffirms that teachers are the heartbeat of educational change, and when empowered, they not only transform classrooms but also safeguard the future of the Tamil language for generations to come.

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# LEVEL OF DISTRIBUTIVE LEADERSHIP PRACTICE IN IMPROVING ACHIEVEMENTS IN KELANTAN MATRICULATION COLLEGE

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**Abstract:** *Quality leadership is one of the aspirations outlined by the Ministry of Education Malaysia in the Malaysia Education Blueprint (PPPM) 2013–2025. Leaders in educational institutions are responsible for planning and managing all institutional tasks. Distributive leadership is a leadership style that contributes to the development of a structured, systematic, and high-quality education system. This study aims to identify the level of distributive leadership practices in enhancing the performance of Kelantan Matriculation College. A quantitative approach was employed, utilising a validated and reliable questionnaire distributed via Google Forms. The instrument consisted of 35 items categorised into seven elements: college organisation, college vision, college culture, teaching programs, artefacts, lecturers' leadership, and department heads' leadership. A total of 76 lecturers from the Department of Professional Literature, the Department of Science, and the Department of Mathematics participated in the study. Descriptive and inferential analyses were conducted using SPSS version 26. Findings revealed high levels of distributive leadership practices across all elements, with mean scores ranging from 3.78 to 4.16. A one-way ANOVA showed no significant differences in distributive leadership practices across different departments,  $F(3,71) = 1.690, p > 0.05$ . The findings suggest that strong distributive leadership practices positively contribute to institutional performance and may enhance leadership capacity and job satisfaction among educational leaders and lecturers.*

*Keywords: distributive leadership, institutional performance, educational leadership, matriculation college*

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## 1. Introduction

### 1.1 Problem Statement

The Malaysia Education Blueprint (PPPM) 2013–2025 focuses on leadership quality, teaching quality, and student outcomes, aiming to improve the national education system so that it can compete globally in line with 21st-century advancements (KPM, 2013). Every leader appointed to head an organisation must be wise in influencing their subordinates through actions and decisions that are easy to understand. Continuous efforts to develop knowledge, skills, and understanding must be emphasised to inspire and motivate subordinates in a meaningful way (Eacott, 2007), especially when facing future leadership challenges due to various educational transformations (Karnan & Marimuthu, 2021).

Distributive leadership is a behavioural process that is shared collectively, where the involvement of all members within an organisation is a priority. Its development today is seen as an alternative to the traditional leadership styles previously practised (Harris, 2008). This form of leadership is gaining attention, particularly in educational organisations, as it is not only focused on top-level leadership but is practised across the entire organisation (Bolden, 2011). This situation indirectly highlights distributed leadership as a more balanced leadership

model that is not influenced by changing work environments and organisational structures (Khalip, 2021).

As stated in the PPPM 2013–2025, distributed leadership is seen as a suitable tool for transforming the education sector in Malaysia (Don, Ghazali, Said, Raman, & Ismail, 2015). According to Burk (2020), the practice of distributed leadership can enhance organisational effectiveness, especially in improving excellence, performance, and quality in educational management. This view is supported by Hari (2020) and Barattucci, Lo Presti, Bufalino, Jønsson, Teresi, & Pagliaro (2020), who found that distributed leadership practices can improve educational management effectiveness in various aspects, particularly in commitment, trust, job satisfaction, and problem-solving.

However, the practice of distributive leadership has also been found to create discomfort and can lead to imbalances within an organisation. According to Mayrowetz (2008), the collaborative decision-making process that involves all members of the organisation may not be entirely appropriate and could result in negative outcomes for the organisation and its people. Furthermore, distributed leadership is not fully aligned with existing practices, as the traditional top-down leadership culture still dominates (Bush & Ng, 2019). This raises the question: why is distributed leadership promoted as a leadership tool in the PPPM 2013–2025 if it has the potential to impact organisations negatively? Are there elements of distributed leadership that are unsuitable for implementation in educational management?

The implementation of distributive leadership must consider all aspects of the organisation to ensure its relevance and the achievement of intended goals. Despite differing views on the impact of distributed leadership, most existing studies support it as a driver for enhancing excellence, performance, and effectiveness in educational management. Therefore, this study aims to explore the level of distributive leadership practice and assess its effectiveness in improving performance at Kelantan Matriculation College. The need for this research aligns with the goals outlined in the PPPM 2013–2025 and is in line with best leadership practices implemented internationally. It is also hoped that this study will address the gap in empirical research on distributive leadership in Malaysia (Rosnarizah & Hussien, 2015).

## 1.2 Objectives and Research Questions

This study aims to identify the level of distributive leadership practices in enhancing the achievement of Kelantan Matriculation College.

Specifically, the study seeks to answer the following research questions:

- i. What is the level of distributive leadership practice in the college's organisational structure in relation to achievement?
- ii. What is the level of distributive leadership practice in the college's vision in relation to achievement?
- iii. What is the level of distributive leadership practice in the college's culture in relation to achievement?
- iv. What is the level of distributive leadership practice in teaching programs in relation to achievement?
- v. What is the level of distributive leadership practice in college artefacts in relation to achievement?
- vi. What is the level of distributive leadership practice among lecturers in relation to achievement?

- vii. What is the level of distributive leadership practice among heads of departments in relation to achievement?

### 1.3 Hypothesis

The null hypothesis of this study is:

**H<sub>0</sub>:** There is no significant difference in the practice of distributive leadership based on departmental diversity in relation to achievement at Kelantan Matriculation College.

### 1.4 Significance of the Study

This study is important for identifying the level of distributive leadership practices concerning the college organisation, college vision, college culture, teaching programs, artefacts, lecturer leadership, and head of department leadership in enhancing student and institutional achievement. The study provides scholarly contributions that can help leaders improve and enhance distributed leadership practices at Kelantan Matriculation College.

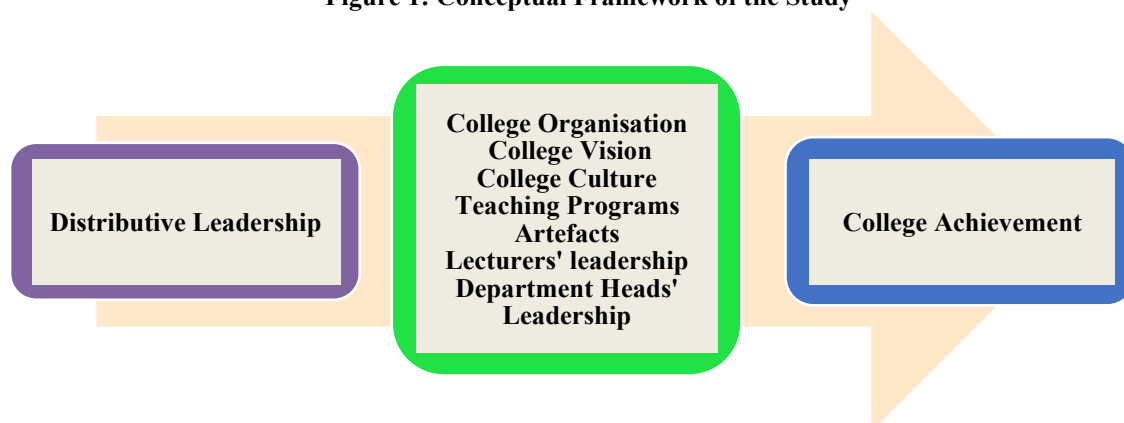
### 1.5 Scope and Limitations of the Study

This study is conducted solely at Kelantan Matriculation College. The research instrument used is a questionnaire, answered by 76 lecturers from four departments: the Department of Social Sciences and Humanities, the Department of Science, the Department of Mathematics, and the Student Affairs Department.

### 1.6 Conceptual Framework of the Study

The conceptual framework of this study was developed to facilitate understanding and guide the research process. Figure 1 illustrates that distributed leadership consists of seven elements as independent variables, while student and institutional achievement are the dependent variables. This study seeks to determine the extent to which distributed leadership practices impact the achievement of students and Kelantan Matriculation College.

**Figure 1: Conceptual Framework of the Study**



Sources: Gronn (2002), Davis (2009), Mayan & Mahaliza (2021)



## **2. Literature Review**

The Ministry of Education Malaysia introduced the Education Development Plan Policy (PPPM 2013-2025). Based on the fifth shift in this plan, which is “Ensuring High-Performing Leadership is Placed in Every School,” leadership competence is believed to lead to student success and foster higher-order thinking skills. Previous researchers have found that educational leadership is a key factor in the excellence of an educational organisation (KPM, 2013). Therefore, leaders of learning organisations must continually strive to face various challenges of organisational change and meet the expectations of higher authorities who have an interest in educational development.

Hence, Harris (2002) argues that educational leadership that practices distributed leadership can build a culture of accountability in carrying out tasks, which subsequently develops leadership competence. Distributed leadership is an informal form of leadership that adapts task distribution methods, mutual trust among members, and a sense of responsibility towards tasks (Azhar et al., 2016). Elmore (2002), a pioneer of distributed leadership, conducted research stating there is a relationship between the concept of distributed leadership and teacher performance as well as school achievement. There are five suggested elements of distributed leadership: sharing direction, school culture, shared responsibility for professional development, and leadership practices.

Distributive leadership is a leadership approach that integrates various expert resources at all leadership levels within a school to create opportunities for improvement. Organisational structure is closely related to the practice of distributed leadership, and if the structure is lateral or flexible and supported by strong leadership, it directly affects the institution’s innovation (Harris, 2014). Furthermore, effective leadership can also prevent problems such as teacher absenteeism, unmet school goals, lack of harmonious relationships between leaders and teachers, and teacher dissatisfaction with school management (Kuppan & Ahmad Zabidi, 2021).

## **3. Research Methodology**

### **3.1 Research Design**

This quantitative study was conducted through a survey using a questionnaire distributed via the Google Form platform. The data were analysed descriptively and inferentially using the Statistical Package for Social Sciences (SPSS) version 26.

### **3.2 Population & Sample**

This study involved lecturers from Kelantan Matriculation College (KMkt) across four different departments, namely the Department of Social Sciences, Student Affairs Department, Mathematics Department, and Science Department. The sample was selected using simple random sampling, involving 76 respondents. The sample size was determined based on Krejcie & Morgan (1970).

### **3.3 Instrument**

The research questionnaire used a nominal scale for respondent demographics and an ordinal scale for elements 1 through 7. A five-point Likert scale was used in this study. The items were

rated based on the following scale scores: 1 (Strongly Disagree), 2 (Disagree), 3 (Somewhat Agree), 4 (Agree) and 5 (Strongly Agree). This scale is suitable for measuring the intended dimensions and responses that are homogeneous in distinguishing scale categories.

The questionnaire consists of 35 items. The respondent demographic section contains one item, which is the department type. The elements of distributed leadership examined include College Organisation (6 items), College Vision (5 items), College Culture (6 items), Teaching Program (2 items), Artefacts (4 items), Lecturer Leadership (6 items), and Head of Department Leadership (5 items).

**Table 1: Elements in the Questionnaire Items**

No	Element Details	Number of Items
Respondent Demographics	Department	1
Element 1	College Organisation	6
Element 2	College Vision	5
Element 3	College Culture	6
Element 4	Teaching Program	2
Element 5	Artefacts	4
Element 6	Lecturer Leadership	6
Element 7	Head of Department Leadership	5
	Total	35

Source: Davis M.W. (2009), with slight modifications

### 3.4 Data Analysis

The findings from the distributed questionnaire were analysed to determine frequency, percentage, mean, and standard deviation. The interpretation of mean scores consists of three levels: low (1.00 to 2.33), moderate (2.34 to 3.66), and high (3.67 to 5.00) (Landell, K., 1977; Pallant, 2011). In addition, to analyse the differences in the practice of distributed leadership based on different departments at Kelantan Matriculation College, a one-way ANOVA test was used involving the four departments.

### 3.5 Data Collection

The researchers distributed the questionnaire via Google Forms, and the data were analysed descriptively using SPSS.

### 3.6 Reliability & Validity Testing

The questionnaire instrument was tested for reliability using the reliability test by comparing the Cronbach's Alpha coefficient with the reliability level of each element. A random pilot study was conducted on 30 respondents. The reliability of the questionnaire instrument was at a very good level, with an overall Cronbach's Alpha value of 0.975. The reliability values for each element were also at a very good level. Therefore, this questionnaire instrument is deemed suitable for use, as it has a Cronbach's Alpha value exceeding 0.60. The Cronbach's Alpha values for each element are shown in the table below.

**Table 2: Reliability Values of Each Element**

No	Element Description	Cronbach's Alpha Value
Element 1	College Organisation	0.932
Element 2	College Vision	0.945
Element 3	College Culture	0.855
Element 4	Teaching Programs	0.732
Element 5	Artifacts	0.920
Element 6	Lecturer Leadership	0.875
Element 7	Head of Department Leadership	0.967
	Overall Value	0.975

## 4. Results

### 4.1 Respondents' Demographics

This quantitative study utilised frequency distribution analysis to examine the demographic background of the respondents. The researcher distributed questionnaires to lecturers at Kelantan Matriculation College. Table 3 presents the percentage distribution of respondent demographics.

Out of a total of 76 respondents, the majority were from the Science Department, accounting for 41% or 31 respondents. Meanwhile, 34% or 26 respondents were from the Social Sciences and Humanities Department, followed by 14% or 11 respondents from the Mathematics Department, and the remaining 11% or 8 respondents were from the Student Affairs Department.

**Table 3: Respondents' Demographics**

No	Department	Frequency	Percentage (%)
1	Social Sciences and Humanities	26	34
2	Student Affairs	8	11
3	Mathematics	11	14
4	Sciences	31	41
	Total	76	100

### 4.2 Level of Distributive Leadership Practice in College Organisation

Based on Table 4, Item 1 recorded the highest mean score of  $4.11 \pm 0.92$ , followed by Item 2 ( $3.84 \pm 0.83$ ), Item 6 ( $3.76 \pm 0.94$ ), Item 3 ( $3.71 \pm 0.87$ ), and Item 4 ( $3.67 \pm 0.85$ ). Item 5 showed a moderate level with a mean score of  $3.59 \pm 0.83$ . Overall, Element 1: College Organisation is at a high level, with an average mean score of  $3.78 \pm 0.87$  and a Cronbach's Alpha value of 0.932, indicating excellent reliability.

**Table 4: Element 1 – College Organisation**

No	Statement	Mean Score	Standard Deviation	Level
1	The college's daily and weekly schedules provide time for lecturers to collaborate on teaching-related issues.	4.11	0.92	High
2	There is a formal structure at the college that allows lecturers and professional staff to participate in teaching-related decision-making at the college level.	3.84	0.83	High
3	Lecturers in leadership roles at the college have sufficient time to make meaningful contributions.	3.71	0.87	High

4	Lecturers in leadership roles at the college have sufficient resources to make meaningful contributions.	3.67	0.85	High
5	The college's weekly or monthly schedule provides time for grade-level teams to meet with administrators to discuss teaching issues.	3.59	0.83	Moderate
6	Lecturers who provide teaching guidance are given sufficient time to help colleagues improve their teaching strategies.	3.76	0.94	High
Overall		3.78	0.87	High

These findings suggest that the structure and practices within the college organisation support distributed leadership, particularly in areas of time allocation and collaborative opportunities among lecturers, though some improvements may be needed in scheduling regular teaching issue discussions with administration.

### 4.3 Level of Distributive Leadership Practice in College Vision

The results show that the overall mean score for the five items under Element 2: College Vision is  $4.04 \pm 0.87$ , which falls within the high-level category. According to Table 5, among the five items, Item 3 ("The college's goals are aligned with the goals of the Matriculation Division") recorded the highest mean score of  $4.21 \pm 0.80$ , followed by Item 5 ( $4.18 \pm 0.81$ ), Item 1 ( $4.02 \pm 0.93$ ), and Item 4 ( $3.96 \pm 0.94$ ). Item 2, which states that "Lecturers can clearly explain the college's vision," recorded the lowest mean score of  $3.84 \pm 0.89$ , but it still falls within the high level category.

**Table 5: Element 2 – College Vision**

No	Statement	Mean Score	Standard Deviation	Level
1	The college has a clear vision statement.	4.02	0.93	High
2	Lecturers can clearly explain the college's vision.	3.84	0.89	High
3	The college's goals are aligned with the goals of the Matriculation Division.	4.21	0.80	High
4	The college shares a common set of values in guiding institutional improvement.	3.96	0.94	High
5	The college has a clearly written mission statement.	4.18	0.81	High
Overall		4.04	0.87	High

### 4.4 Level of Distributive Leadership Practice in College Culture

The findings indicate that the overall mean score for the six items under Element 3: College Culture is  $4.16 \pm 0.73$ , which is categorised as high. As shown in Table 6, Item 6 ("All students, regardless of economic status or race, are expected to achieve at a high level") recorded the highest mean score of  $4.58 \pm 0.54$ . This is followed by Item 5 ( $4.38 \pm 0.63$ ), Item 2 ( $4.21 \pm 0.77$ ), Item 3 ( $4.11 \pm 0.81$ ), and Item 1 ( $3.95 \pm 0.81$ ). Item 4, which concerns mutual respect and trust between the college administration and staff, recorded the lowest mean score of  $3.72 \pm 0.79$ , although it still falls within the high-level category.

**Table 6: Element 3 – College Culture**

No	Statement	Mean Score	Standard Deviation	Level
1	It is evident that many lecturers at my college can take on leadership roles.	3.95	0.81	High
2	Lecturers at my college discuss and support each other in solving problems.	4.21	0.77	High
3	Mutual respect and trust exist among staff.	4.11	0.81	High
4	Mutual respect and trust exist between the college administration and staff.	3.72	0.79	High
5	Lecturers have high teaching and learning expectations for their students.	4.38	0.63	High
6	All students, regardless of economic status or race, are expected to achieve at a high level.	4.58	0.54	High
	Overall	4.16	0.73	High

These results suggest a strong and supportive culture exists within the college, particularly in terms of inclusivity and academic expectations. However, the slightly lower score in **Item 4** suggests that **mutual trust between the administration and staff** could be further strengthened to enhance a collaborative leadership culture.

#### 4.5 Level of Distributed Leadership Practice in Teaching Programs

As shown in Table 7, the analysis of Element 4: Teaching Programs reveals that both items under this element fall within the high level category. Item 2 ("Permanent lecturers regularly meet with peers or instructional experts to discuss the support needs of specific students") recorded the highest mean score of  $4.25 \pm 0.67$ . Meanwhile, Item 1 ("Lecturers and administrators share accountability for students' academic performance") recorded a slightly lower mean score of  $4.05 \pm 0.54$ , but still within the high category. The overall mean score for this element is  $4.15 \pm 0.61$ , indicating a high level of distributed leadership practice in the implementation of teaching programs.

**Table 7: Element 4 – Teaching Programs**

No	Statement	Mean Score	Standard Deviation	Level
1	Lecturers and administrators share accountability for students' academic performance.	4.05	0.54	High
2	Permanent lecturers regularly meet with peers or instructional experts to discuss the support needs of specific students.	4.25	0.67	High
	Overall	4.15	0.61	High

These results reflect a strong culture of collaboration and shared responsibility in enhancing student outcomes through continuous professional discussions and joint accountability.

#### 4.6 Level of Distributed Leadership Practice in Artefacts

Based on Table 8, the overall mean score for Element 5: Artefacts is  $3.96 \pm 0.89$ , which is categorised as high. Among the four items, Item 4 ("Lecturers use feedback from classroom observations and evaluations by the administration to improve their teaching") recorded the highest mean score of  $4.06 \pm 0.92$ . This is followed by Item 2 ( $4.01 \pm 0.96$ ), Item 1 ( $4.00 \pm 0.88$ ), and Item 3, which recorded the lowest mean score of  $3.75 \pm 0.78$  but remains in the high category.

**Table 8: Element 5 – Artefacts**

No	Statement	Mean Score	Standard Deviation	Level
1	The college uses assessment results from the Matriculation Division to evaluate the teaching programs.	4.00	0.88	High
2	The college uses lecturers' assessment outcomes to evaluate the teaching programs.	4.01	0.96	High
3	The college reviews and discusses samples of students' work.	3.75	0.78	High
4	Lecturers use feedback from observations and evaluations by the administration to improve their classroom teaching.	4.06	0.92	High
Overall		3.96	0.89	High

These findings suggest that the use of various assessment artefacts from both internal and external sources is effectively integrated into the college's teaching evaluation and improvement process. However, the relatively lower score for **reviewing student work** (Item 3) points to an area that may benefit from more emphasis to enhance reflective teaching practices.

#### 4.7 Level of Distributed Leadership Practice in Lecturer Leadership

The analysis of Element 6: Lecturer Leadership shows that the overall mean score is  $4.05 \pm 0.87$ , which falls into the high-level category. Based on Table 9, Item 6 ("Lecturers at my college discuss and support each other in solving problems") recorded the highest mean score of  $4.30 \pm 0.87$ , followed closely by Item 5 ( $4.25 \pm 0.83$ ), and Item 3 ( $4.11 \pm 0.92$ ). Item 2 and Item 4 also showed high levels, with mean scores of  $4.05 \pm 0.78$  and  $3.82 \pm 0.84$ , respectively. Item 1, which measures lecturers' interest in taking on leadership roles, recorded the lowest mean score of  $3.75 \pm 0.96$ , but remains at a high level.

These findings suggest that a strong culture of collaboration and peer support exists among lecturers. However, the slightly lower score in Item 1 indicates a potential need to encourage and nurture more interest among lecturers to actively engage in formal leadership roles within the college.

**Table 9: Element 6 – Lecturer Leadership**

No	Statement	Mean Score	Standard Deviation	Level
1	Lecturers are interested in participating in leadership roles within the college.	3.75	0.96	High
2	Informal leaders at the college play an important role in improving peer performance.	4.05	0.78	High
3	Informal leaders at the college play an important role in improving student achievement.	4.11	0.92	High
4	The college has developed its capacity by providing formal opportunities for professional staff to take on leadership roles.	3.82	0.84	High
5	Lecturers at my college discuss strategies and share teaching materials.	4.25	0.83	High
6	Lecturers at my college discuss and support each other in solving problems.	4.30	0.87	High
Overall		4.05	0.87	High

#### 4.8 Level of Distributed Leadership Practice in Head of Department Leadership

The results show that the overall mean score for Element 7: Head of Department (HoD) Leadership is  $4.04 \pm 0.89$ , which falls within the high-level category. Based on Table 10, the

highest mean score was recorded for Item 3 ("The goals of the Head of Department are aligned with those of the Matriculation Division") at  $4.15 \pm 0.95$ . This is followed by: Item 5 ( $4.06 \pm 0.94$ ): "The Head of Department provides structures that encourage all lecturers to participate in improving academic achievement." Item 4 ( $4.02 \pm 0.87$ ): "The Head of Department provides leadership to improve academic achievement." Item 2 ( $4.00 \pm 0.98$ ): "The Head of Department is knowledgeable about teaching issues at the college." Item 1 recorded the lowest score at  $3.96 \pm 0.69$ , but it still falls within the high range.

**Table 10: Element 7 – Head of Department Leadership**

No	Statement	Mean Score	Standard Deviation	Level
1	The HoD actively participates with lecturers in unit and departmental teaching meetings.	3.96	0.69	High
2	The HoD is knowledgeable about teaching-related issues at the college..	4.00	0.98	High
3	The HoD's goals are aligned with the goals of the Matriculation Division.	4.15	0.95	High
4	The HoD provides leadership in improving academic achievement.	4.02	0.87	High
5	The HoD provides structures that encourage lecturer participation in academic improvement.	4.06	0.94	High
Overall		4.04	0.89	High

These findings reflect that Heads of Department are perceived to be effective leaders who support academic goals and encourage lecturer involvement. The slightly lower score in Item 1 suggests room for improvement in the active participation of HoDs in teaching-related meetings, which could enhance collaboration and shared decision-making at the departmental level.

#### 4.9 Differences in Distributed Leadership Practices Based on Departmental Factors

To examine whether there are **significant differences** in distributed leadership practices based on different departments, a **one-way ANOVA** was conducted.

**Table 11: One-way ANOVA for Distributed Leadership Practices Based on Department**

Department	N	Mean	Std. Dev.	df <sub>1</sub>	df <sub>2</sub>	F
Department of Arts & Social Sciences	26	3.94	0.71	3	72	0.997
Student Affairs Department	8	3.78	0.96			
Mathematics Department	11	3.95	0.58			
Science Department	31	4.16	0.69			
Overall	76	4.01	0.64			

$p > 0.05$

The highest mean score was from the Science Department ( $4.16 \pm 0.69$ ), followed by Mathematics ( $3.95 \pm 0.58$ ), Arts & Social Sciences ( $3.94 \pm 0.71$ ), and the lowest mean score was from the Student Affairs Department ( $3.78 \pm 0.96$ ). Levene's Test for Homogeneity of Variance yielded a p-value of 0.399 ( $> 0.05$ ), indicating that the assumption of homogeneity of variances

was met. The ANOVA test result showed  $F(3,72) = 0.997$ ,  $p = 0.399$ , which is not statistically significant.

Since the p-value is greater than 0.05, we fail to reject the null hypothesis ( $H_0$ ). This means that there is no significant difference in the practice of distributed leadership among lecturers across different departments at Kolej Matrikulasi Kelantan. While some departments (like Science) show slightly higher mean scores, these differences are not statistically meaningful. Thus, distributed leadership appears to be practised consistently across all departments.

## 5. Discussion and Conclusion

The findings based on inferential analysis indicate that there is no significant difference in the practice of distributed leadership across different departments, with a value of  $F(3,72) = 0.997$ ,  $p > 0.05$ . Meanwhile, the descriptive analysis shows the levels of distributed leadership practices as follows: college organization ( $3.78 \pm 0.92$ ), college vision ( $4.04 \pm 0.87$ ), college culture ( $4.16 \pm 0.73$ ), teaching programs ( $4.15 \pm 0.61$ ), artifacts ( $3.96 \pm 0.89$ ), lecturer leadership ( $4.05 \pm 0.87$ ), and head of department leadership ( $4.04 \pm 0.89$ ) in enhancing the performance of Kelantan Matriculation College.

These findings are supported by a study conducted by Mayan and Mahaliza (2021), which also showed high levels of distributed leadership practices and teacher efficacy in national schools in Selangor. Similarly, distributed leadership practices were found to be at a high level in Kuala Lumpur (Mayan & Mahaliza, 2020). Muammar Shah (2020), in his study, also found that distributed leadership was practised at a high level in vocational colleges. This suggests that vocational college principals need to understand their role as distributed leaders to enhance teacher motivation and realise college excellence.

Leadership success involves three critical elements: i) leaders' trust in others, ii) shared decision-making, and iii) a collaborative culture among organisation members (Khalip, 2021; Kennedy et al., 2011). Leadership also has a significant positive relationship with teachers' commitment to change (Thien & Tan, 2019). Distributed leadership has proven effective in supporting educational management operations (Rabindarang & Arjunan, 2021). This clearly shows that distributed leadership, teacher commitment, and school climate are closely linked to organisational effectiveness (Norliza et al., 2021). Additionally, distributed leadership can influence conflict management within learning organisations (Zuraidah et al., 2016).

Distributive leadership has a substantial impact on teachers and the overall school organisational system (Nur Syukri & Mohd Izham, 2020). College administrators must understand and apply distributed leadership styles, as leaders are the key drivers in improving college performance. The alignment of the college's mission, vision, and goals is crucial so that lecturers perform their duties in accordance with a shared direction to enhance institutional performance.

Distributive leadership also encourages lecturers to share experiences and new knowledge, as well as to collaboratively solve student learning issues, thus improving student achievement. The practice of sharing opinions and power between leaders and lecturers helps to strengthen relationships, uncover potential, and nurture talents. Leaders who care for lecturers' needs can foster a sense of appreciation and increase their commitment to enhancing college performance and delivering more effective teaching and learning. This study is hoped to contribute to the



improvement and strengthening of distributed leadership practices among leaders at Kelantan Matriculation College.

In conclusion, distributed leadership plays an important role in enhancing student achievement and the effectiveness of learning organisations. The elements of distributed leadership should be considered in the process of improving and developing leadership within learning organisations so that they can be understood and effectively practised. The implementation of distributed leadership practices needs to be emphasised to strengthen human capital towards realising the vision of *Sekolahku Sejahtera* (My Prosperous School).

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# PRINCIPAL TRANSFORMATIONAL LEADERSHIP PRACTICES AND THEIR IMPLICATIONS ON COUNSELING TEACHER ORGANIZATIONAL COMMITMENT IN MALAYSIA

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**Abstract:** *Principals' transformational leadership is critical in shaping the organizational commitment of counseling teachers, particularly in the increasingly complex and demanding school environment. This study investigates the direct influence of four transformational leadership dimensions (charisma, intellectual stimulation, individualized consideration, and inspirational motivation) on the organizational commitment of counseling teachers in Malaysian secondary schools. A quantitative cross-sectional survey design was employed, involving 466 counseling teachers selected through stratified random sampling across all states in Malaysia. Data were collected using the Multifactor Leadership Questionnaire (MLQ) and the Organizational Commitment Questionnaire (OCQ). Structural Equation Modeling (SEM) with AMOS was utilized to assess model fit and analyze the hypothesized relationships. The findings reveal that "charisma" has a significant and positive direct effect on counseling teachers' organizational commitment, emerging as the strongest predictor. In contrast, the other three dimensions (intellectual stimulation, individualized consideration, and inspirational motivation) showed no significant direct effects. Collectively, the four leadership dimensions explained "16% of the variance" in organizational commitment. The SEM results demonstrated good model fit indices, affirming the robustness of the tested model. The study underscores the importance of cultivating charismatic leadership traits among principals, such as articulating a compelling vision, demonstrating professional competence, and inspiring confidence among staff. These findings carry practical implications for leadership training, policy development, and professional learning programs within the Ministry of Education and the Aminuddin Baki Institute. Future research is encouraged to examine mediating variables such as job satisfaction and work engagement, and to extend the study across primary, boarding, and international school contexts.*

*Keywords:* Transformational Leadership, Organizational Commitment, Principal, Counselling Teacher

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## 1. Introduction

In the increasingly challenging and dynamic era of contemporary education, the role of school leadership is no longer limited to administrative management alone. Instead, administrators are now required to act as strategic change agents in ensuring the effectiveness of the entire education ecosystem, including the emotional well-being of school staff, the building of a

positive work culture and continuous professional development among teachers (Mohd Zainuddin et al., 2021).

One important element in this landscape is the ability of principals to practice transformational leadership that can inspire school staff, especially counselling teachers, to provide high organizational commitment. According to Burns (in Buil, Martínez, & Matute, 2019), transformational leadership is defined as the ability of leaders to influence followers through charisma, individual consideration, inspirational motivation and intellectual stimulation, towards the achievement of extraordinary goals. This is supported by Bushra et al. (2011) who found that transformational leadership has a significant impact on staff loyalty and work motivation.

In the Malaysian context, counselling teachers are the mainstay in supporting students' psychosocial well-being, but the burden of non-counselling tasks, such as data management, activities outside the counselling room, and clerical work, is reported to be increasing every year (Ministry of Education Malaysia [KPM], 2023). This issue undermines the actual functioning of guidance and counselling units in schools and has the potential to undermine the organizational commitment of counselling teachers (Sulaiman et al., 2014; Florence, 2007).

Furthermore, the COVID-19 pandemic has exposed the lack of psychosocial support systems in schools, thus highlighting the importance of the role of counselling teachers and the leadership of principals in supporting student interventions (OECD, 2021). Although the allocation in the 2023 Budget shows the government's commitment of RM55.6 billion to the education sector, including leadership training through the Aminuddin Baki Institute (Ministry of Finance Malaysia, 2023), the implementation of this policy requires monitoring of effectiveness at the grassroots level.

Critically, there is still a gap in understanding among school administrators regarding the actual function of the guidance and counselling unit, resulting in counselling teachers facing work pressure and role ambiguity (Andriani, Kesumawati, & Kristiawan, 2018). In fact, past studies have also shown that school leadership factors and institutional support play an important role in determining the level of teacher organizational commitment (Meyer & Allen, 1991; Bello, 2012; Nazari & Emami, 2012).

This study aims to identify principals' transformational leadership practices and their relationship with organizational commitment among secondary school counselling teachers in Malaysia. This study is important in bridging the gap in existing findings which are mostly conceptual in nature and do not explain the effectiveness of implementation in the field.

Therefore, this study is important in providing answers to the following questions and hypotheses:

i. To study the direct effect of principals' transformational leadership practices on the organizational commitment of secondary school counselling teachers in Malaysia.

H01: There is no significant direct effect between principal charisma and organizational commitment of secondary school counselling teachers in Malaysia.

H02: There is no significant direct effect between individual consideration of principals and organizational commitment of secondary school counselling teachers in Malaysia.

H03: There is no significant direct effect between intellectual stimulation of principals and organizational commitment of secondary school counselling teachers in Malaysia.

H04: There is no significant direct effect between inspirational motivation of principals and organizational commitment of secondary school counselling teachers in Malaysia.

- ii. Identify the transformational leadership elements that are the main predictors of organizational commitment of secondary school counselling teachers in Malaysia.
- iii. Develop a model of the relationship between transformational leadership practices of principals according to four elements on organizational commitment of secondary school counselling teachers in Malaysia

## **2. Literature Review**

Transformational leadership has been identified as an effective leadership style in improving organizational performance through its influence on the values, attitudes and beliefs of organizational members (Bass & Avolio, 1994). In the context of education, principals who practice transformational leadership are able to build a professional work culture that supports emotional well-being and motivation among counselling teachers, thus strengthening their organizational commitment (Florence, 2007; Sulaiman, 2014).

### **2.1 Transformational Leadership**

Transformational leadership is a leadership approach that emphasizes the ability of leaders to influence followers to go beyond personal interests in order to achieve the collective goals of the organization (Bass, 1985). This leadership style is based on the values of empathy, social sensitivity, moral encouragement and high motivation in building positive relationships and instilling a progressive work culture (Jin, 2010; Stinglhamber et al., 2015). For example, transformational leaders inspire followers to pioneer change and implement significant innovations in an educational organization (Asodike & Adieme, 2015). In the context of education, such leaders not only act as role models but also provide ongoing guidance and empower staff through recognition and trust (Aydin, Sarier, & Uysal, 2013).

### **2.2 Transformational Leadership Theory and Model**

#### **2.2.1 Bass's Transformational Leadership Theory**

According to Bass (1985), there are four main dimensions in transformational leadership known as the 4 'I's, namely: (i) Idealized influence, (ii) Inspirational motivation, (iii) Intellectual stimulation, and (iv) Individualized consideration. These four dimensions work synergistically to produce exceptional performance among organizational members and instill deep commitment to strategic change.

#### **2.2.2 Slocum and Hellriegel's Leadership Model**

The model by Slocum and Hellriegel (2007) details the charismatic element as the core of transformational leadership. Charismatic leaders demonstrate high moral integrity, are ethical and are willing to sacrifice self-interest for the well-being of the organization. Next, the dimension of individual consideration emphasizes the importance of understanding the personal needs of organizational members and valuing their views inclusively to build productive understanding. These two dimensions complement each other in creating a work culture based on trust and accountability.

### **2.3 Teacher Commitment**

In general, teacher commitment plays an important role in contributing to the improvement of students' achievements in terms of curriculum, co-academic, co-curricular, and personality. This commitment not only reflects dedication to the profession but also influences teachers' behaviour in facing the challenges of today's education. According to Dayangku Rodzianah and Mohd Izham (2021), committed teachers will exhibit high professionalism and adhere to strong values and work ethics in an organization.

Furthermore, Mart (2003) explained that teacher commitment is a form of emotional bond between teachers and schools. This bond will encourage teachers to devote more time, energy, and effort to ensuring that student outcomes can be achieved optimally. In other words, teacher commitment creates a conducive learning environment and supports the development of student potential (Altun, 2017). Therefore, highly committed teachers usually meet organizational expectations and actively contribute to the achievement of school goals.

### **2.3.1 Organizational Commitment Theory**

Meyer and Allen (1991), as described in the study by Amalina, Fatimah and Wan Shahrazad (2017), define “organizational commitment” as a psychological construct that describes the relationship between employees and the organization, which ultimately influences their decision to continue serving in the organization. There are three main forms of organizational commitment identified, namely:

**Affective commitment** – refers to an employee’s emotional attachment to the organization. In the context of education, this means that teachers have a sense of pride, love and togetherness towards the school, and are willing to sacrifice for the well-being of the organization. Teachers who have affective commitment function as positive change agents and tend to remain in service for a long time.

**Continuance commitment** – is closely related to the assessment of the costs and benefits if someone chooses to leave the organization. Teachers with this type of commitment often consider factors such as job stability, economic benefits and long service before making a decision. According to Lily and Muhamad Suhaimi (2020), teachers in this category are not necessarily emotionally attached, but remain because they feel more loss if they move to another organization.

**Normative commitment** – formed from a sense of moral responsibility and obligation to the organization. Teachers who have this commitment believe that it is not appropriate to leave the organization because they have received support, training and investment from the school. Therefore, they feel indebted and want to repay the trust that has been given by the organization (Lily & Muhamad Suhaimi, 2020).

### **2.3.2 Organizational Commitment Model**

The organizational commitment model presented by Meyer and Allen (1991; 1997) and supported by Slocum and Hellriegel (2007), is relevant to the educational context in Malaysia, especially in assessing the commitment of counselling teachers. The three main dimensions of this model are described as follows:

**Affective commitment** is seen when teachers feel happy to be a member of the organization and express their loyalty to the goals and principles of the school. They are willing to sacrifice time and energy to improve the image and performance of the school.

**Continuance commitment** occurs when teachers judge that leaving a school will result in significant financial and psychological losses. Teachers who have been with a particular school for a long time often find it difficult to move to another organization because of the time and emotional investment they have made.

Normative commitment, on the other hand, reflects teachers' sense of obligation to the organization based on an internal moral compass. They believe that the organization has invested heavily in their career development, and on this basis they feel a responsibility to continue contributing to the school (Marsh & Mannari, 1997).

#### **2.4 Principal Transformational Leadership and Teacher Organizational Commitment Counselling**

Previous studies have shown that transformational leadership style has a significant impact on the organizational commitment of counselling teachers. For example, a study by Ali et al. (2020) found that school leaders who practice transformational leadership successfully increased job satisfaction and the willingness of counselling teachers to actively participate in guidance programs. This finding is also supported by Hashim et al. (2022) who emphasized that close interpersonal relationships between principals and counselling teachers contribute to higher professional involvement in counselling services.

According to Leithwood and Jantzi (2005), transformational leadership in educational institutions includes four main dimensions: idealized influence, inspirational motivation, intellectual stimulation and individualized consideration. These dimensions have been empirically proven to have a positive impact on teachers' organizational commitment in various contexts (Nguni, Slegers & Denessen, 2006; Wahyudi & Karnita, 2022).

In Malaysia, studies by Florence (2007) and Sulaiman (2014) support this view when they find that the transformational leadership style of principals increases GBK's commitment to the school vision and loyalty to the organization. These findings are further strengthened by the study by Azlin et al. (2021) which shows that principals act as change agents who encourage GBK's to be proactive in implementing psycho-emotional interventions for students.

Furthermore, a contemporary study by Noor & Ismail (2023) emphasized the importance of implementing transformational elements in the school ecosystem to address the challenges of teachers' emotional well-being. In the post-pandemic education era, the ability of leaders to stimulate internal motivation and support emotional balance among counselling teachers is greatly needed (OECD, 2021). Therefore, further research that integrates the transformational leadership model with indicators of organizational well-being and commitment needs to be continued.

In addition, an international study by Shaterzadeh and Baniamin (2021) concluded that the relationship between transformational leadership and organizational commitment is mediated by job satisfaction and perception of organizational support. This is in line with recent findings by Noor et al. (2023) which show that the factor of trust and two-way communication between principals and counselling teachers is an important influence on the effectiveness of the implementation of counselling services in schools.

However, several studies also emphasize that without a strong organizational support system, transformational leadership practices may not have a comprehensive effect. For example, Aziz et al. (2020) found that even though principals show transformational characteristics, GBK's organizational commitment remains low if workload is not systematically addressed.

Therefore, it can be concluded that although there is consensus among scholars on the positive contribution of transformational leadership to GBK's organizational commitment, its effectiveness is influenced by other contextual factors such as organizational structure,

workload, and school collaborative culture (Heng et al., 2022). Therefore, this study is hoped to fill the knowledge gap, especially in the context of secondary education in Malaysia by combining transformational leadership variables and organizational commitment empirically and systematically.

### 3. Research Methodology

In general, this study uses a non-experimental quantitative approach, specifically a cross-sectional survey study design. This design is suitable for identifying the relationship between the independent variable, namely principal transformational leadership, and the dependent variable, namely the organizational commitment of counselling teachers. This approach was chosen because it is effective in explaining current phenomena based on data collected at the same point in time (Creswell, 2012).

The population of this study consists of secondary school counselling teachers throughout Malaysia. Sample selection was carried out using a stratified random sampling method to ensure that each member of the population has an equal chance of being selected. Based on the Krejcie and Morgan (1970) table, the proposed sample size for a large population is 466 people. Therefore, this study involved 466 counselling teachers as study respondents.

The principal transformational leadership instrument was adapted from the original scale of the Multifactor Leadership Questionnaire (MLQ) developed by Bass (1985), adapted by Poon and June M.L. (1995), and translated by Khalid (1997). This instrument has been used in the educational context by Jasmi (2015). This questionnaire contains 38 items covering four main constructs, namely: a. Charisma, b. Individual consideration, c. Intellectual stimulation and d. Inspirational motivation.

For the organizational commitment of counselling teachers, the research instrument was adapted from the Organizational Commitment Questionnaire (OCQ) by Meyer and Allen (1991, 1997). This questionnaire consists of 24 items, covering three main components: a. Affective commitment, b. Continuance commitment and c. Normative commitment. This OCQ instrument has been widely used in research related to commitment in Malaysia, including by Awang Seman et al. (2012) and Mohamad Zaid Mustafa (2017).

Both instruments use a 10-point Likert scale, starting from 1 (Strongly Disagree) to 10 (Strongly Agree), to allow for more nuanced measurement of perceptions (Zainuddin et al., 2018).

Data were collected online via Google Forms. This approach was chosen because it is flexible, cost-effective, and allows for extensive data collection in a short time, especially in the post-COVID-19 pandemic context that has seen increased digital accessibility among teachers (Hassan & Ahmad, 2021). The data collected were analysed using SPSS version 29.0 for descriptive and correlational analysis, and AMOS version 26 to conduct Structural Equation Model (SEM) Analysis.

To meet the needs of statistical inference, several analyses were conducted:

- a. Descriptive analysis: Mean and standard deviation were used to assess the level of practice and commitment.
- b. Pearson correlation analysis: Used to see the strength and direction of the relationship between variables (r value between -1.00 to +1.00).



c. SEM analysis: To test the model and the relationship between latent variables.

To ensure the suitability of the measurement model and the structural model, an assessment was carried out based on the fit indices values as follows:

- a. Chi-square/df (CMIN/DF) = 1.978 (below the 5.0 threshold – indicates a good model)
- b. Comparative Fit Index (CFI) = 0.952 (over 0.90 – model fit)
- c. Tucker-Lewis Index (TLI) = 0.947 (close to 1.0 – indicating the model is well accepted)
- d. Root Mean Square Error of Approximation (RMSEA) = 0.046 (less than 0.08 – indicates model fit)

While the standardized path coefficients for the relationship between constructs in the model show a significant influence between transformational leadership and organizational commitment, with a value between  $\beta = .38$  to  $.59$ , which shows the strength of the relationship is moderate to high (Hair et al., 2010).

## 4. Results

### 4.1 Demographic

Based on the frequency distribution of counselling teacher respondents under the leadership of principals throughout Malaysia (N=466), it was found that 456 (97.9%) were full-time guidance and counselling teachers while 10 (2.1%) were excellent guidance and counselling teachers. A total of 389 respondents consisted of female teachers (83.55) while 77 (16.5%) were male. The overall age range of study respondents who were 29 years and below was 29 (6.2%), 30 – 39 years was 137 (29.4%), 40 – 49 years was 213 (45.7%) and 50 years and above was 87 (18.7%). It can be concluded that the study respondents who contributed the most were at the age level of 40 – 49 years, followed by respondents who were in the age range of 30 – 39 years.

The location of the school, 245 (52.6%) were in the city, followed by rural areas of 216 (46.4%) and finally in the interior of 5 (1.1%). For the distribution profile of respondents by state, the state of Perak had the highest frequency of 62 (13.3%), followed by the state of Terengganu of 61 (13.1%), the state of Sarawak of 59 (12.7%), the state of Pahang of 44 (9.4%), the state of Sabah of 38 (8.2%), the state of Penang of 34 (7.3%), the state of Selangor of 33 (7.1%), the state of Johor of 27 (5.8%), the state of Melaka of 25 (5.4%), the state of Kelantan of 18 (3.9%), the states of Perlis and Negeri Sembilan of 15 (3.2%), the states of Kedah and WP Kuala Lumpur of 13 (2.8%). The state with the fewest number of respondents was the state of WP Labuan of 1 (0.2%) followed by the state of WP Putrajaya of 8 (1.7%).

**Table 1: Respondent Demographic Profile**

Profile	Frequency (N=466)	Percent (%)
<b>Position</b>		
Full-Time Guidance and counselling Teacher	456	97.9
Excellent Guidance and counselling Teacher	10	2.1
<b>Gender</b>		
Male	77	16.5
Female	389	83.5
<b>Age</b>		
29 years and under	29	6.2
30-39 years old	137	29.4
40-49 years old	213	45.7

Profile	Frequency (N=466)	Percent (%)
50 years and above	87	18.7
<b>Location</b>		
City	245	52.6
Rural Area	216	46.4
Interior	5	1.1
<b>State</b>		
Perlis	15	3.2
Kedah	13	2.8
Pulau Pinang	34	7.3
Perak	62	13.3
Selangor	33	7.1
WP Putrajaya	8	1.7
WP Kuala Lumpur	13	2.8
Melaka	25	5.4
Johor	27	5.8
Negeri Sembilan	15	3.2
Pahang	44	9.4
Terengganu	61	13.1
Kelantan	18	3.9
Sabah	38	8.2
Sarawak	39	12.7
WP Labuan	1	0.2

#### 4.2 Structural Equation Model Analysis of the Study

The researcher conducted a separate measurement model for the organizational commitment construct before conducting. The findings showed a good fit index value and loading paths for all variables exceeding 0.5. In fact, the Chi-Sq value was 405.445, Chi-Sq/df was 3.465 ( $>5.0$ ) with a significant value (.000). RMSEA was 0.07 ( $<0.08$ ) meeting the specified criteria. In addition, other loading index values such as CFI (.932  $>.09$ ), and TLI (.921  $>.09$ ) also met the expected criteria. In addition, the correlation value of each aspect in counselling teacher organizational commitment has reached a level where the correlation value between the constructs studied is less than 0.85. Structural equation model analysis was conducted after the researcher determined that the measurement model had achieved construct validity and reliability to conduct structural equation model analysis, as illustrated in Figure 1.

Figure 1: Structural Equation Model Analysis of the Study

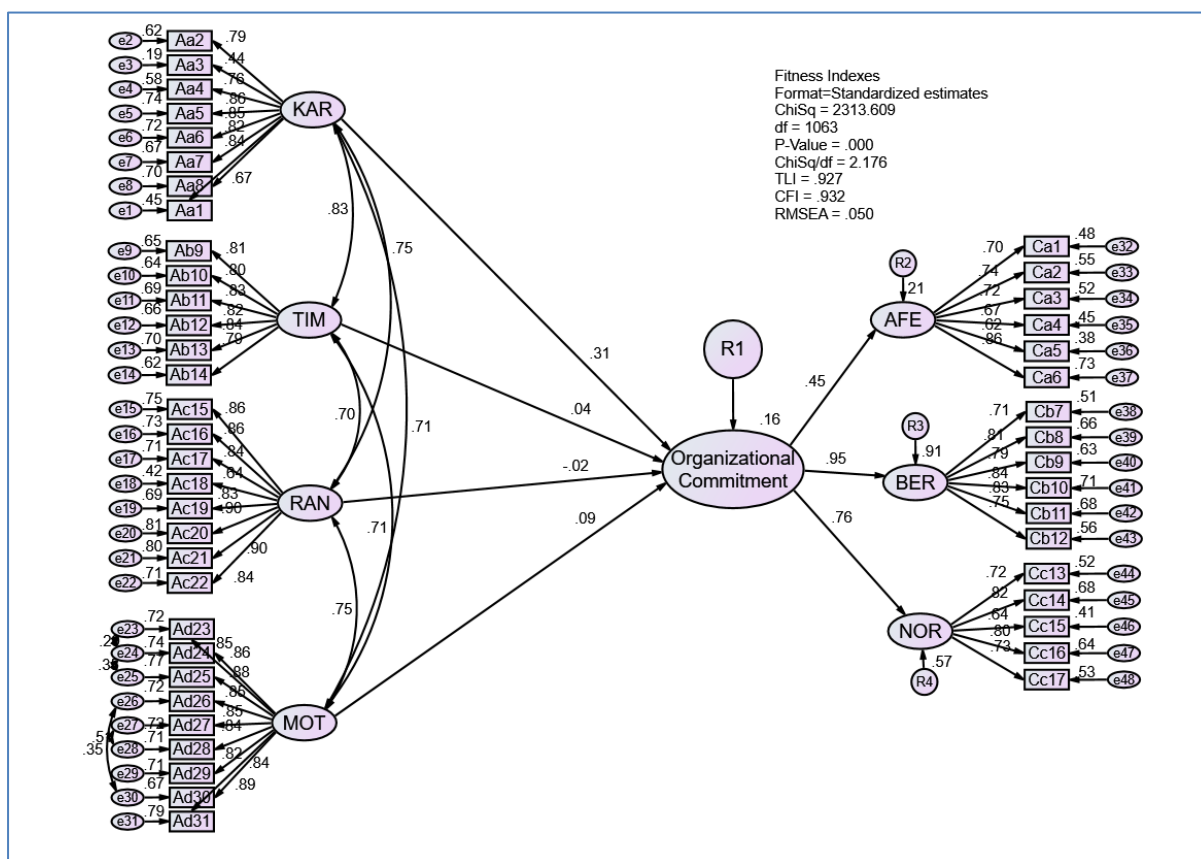


Table 2: Value of FL, CR and AVE elements in transformational leadership and organizational commitment counselling teacher

Dimension	Item	FL	CR>.7	AVE>.5
Transformational Leadership (KT)	Aa1	.67	0.916	0.586
	Aa2	.79		
	Aa3	.44		
	Aa4	.76		
	Aa5	.86		
	Aa6	.85		
	Aa7	.82		
		.84		

Dimension	Item	FL	CR>.7	AVE>.5
	Aa8			
	Ab9	.81		
	Ab10	.80		
	Ab11	.89		
Individually Considerate (TIM)	Ab12	.82	0.928	0.682
	Ab13	.84		
	Ab14	.79		
	Ac15	.86		
	Ac16	.86		
	Ac17	.84		
Intellectually Stimulating (RAN)	Ac18	.64	0.944	0.680
	Ac19	.83		
	Ac20	.80		
	Ac21	.90		
	Ac22	.84		
	Ad23	.85		
	Ad24	.86		
	Ad25	.88		
	Ad26	.85		
Inspiring Motivation (MOT)	Ad27	.85	0.960	0.729
	Ad28	.84		
	Ad29	.84		
	Ad30	.82		
	Ad31	.89		
Organizational Commitment (KO)	Affective (AFE)	.45	0.780	0.561
	Continuous (BER)	.95		
	Normative (NOR)	.76		

### 5.3 Path Regression Estimation Analysis

Based on **H01**, there is a significant relationship between the charismatic leadership style of the principal and the organizational commitment of the counselling teacher. Based on the findings of this study, (Table 3) shows that there is a significant relationship between the charismatic leadership style of the principal and the organizational commitment of the counselling teacher ( $\beta = 0.311$ ,  $p > .05$ ). Therefore, H01 is **accepted**, it shows that the charismatic leadership style of the principal has an impact on the organizational commitment of the counselling teacher.

However, according to **H02**, there is a significant relationship between the individually considerate leadership style and the organizational commitment of the counselling teacher, the study findings show that there is no significant relationship between the individually considerate leadership style and the organizational commitment of the counselling teacher ( $\beta = -0.036$ ,  $p < 0.05$ ). Accordingly, H02 is **rejected**, it shows that the individually considerate leadership style of the principal does not affect the organizational commitment of the counselling teacher.

According to **H03**, there is a significant relationship between the intellectually stimulating leadership style and the organizational commitment of the counselling teacher. Based on the findings of this study, there is no significant relationship between intellectually stimulating leadership style and organizational commitment of counselling teachers ( $\beta = -0.019$ ,  $p < 0.05$ ).

This shows that H03 is **rejected** because the intellectually stimulating leadership style of the principal does not affect the organizational commitment of counselling teachers.

Meanwhile, for **H04**, it states that there is a significant relationship between the motivational leadership style of the principal and the organizational commitment of counselling teachers. In the findings of the study, it was found that there is no significant relationship between the motivational leadership style of the principal and the organizational commitment of counselling teachers ( $\beta = 0.088$ ,  $p < .05$ ). As a result, H04 is **rejected**, it shows that the motivational leadership style of the principal does not have an impact on the organizational commitment of counseling teachers.

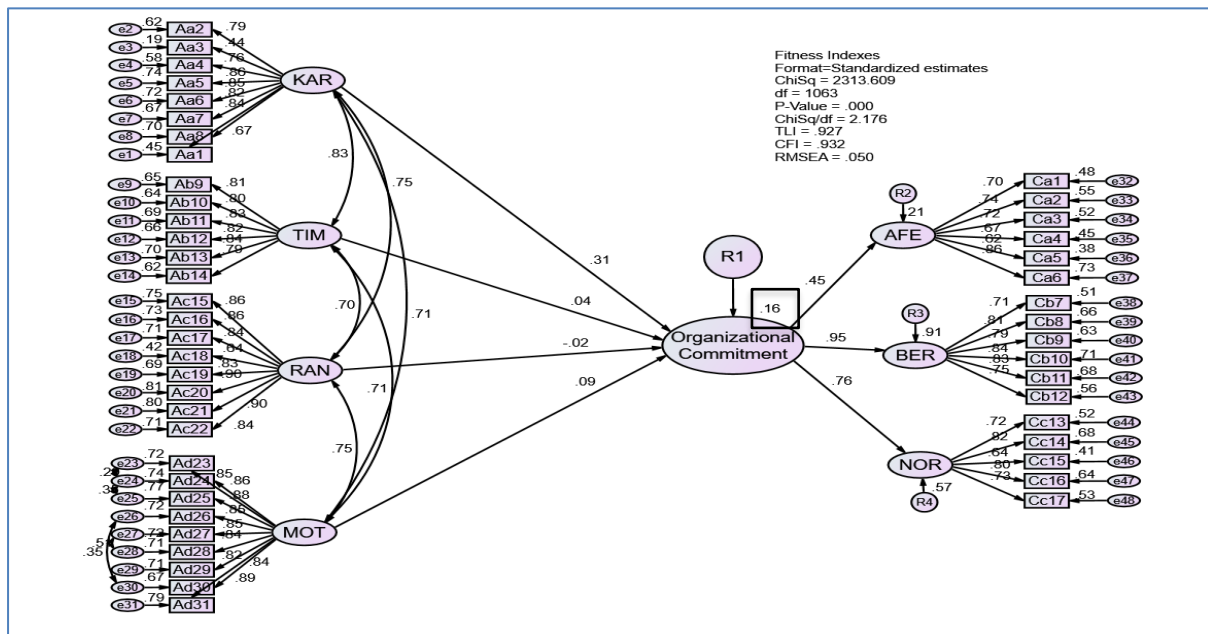
**Table 3: Direct Impact Analysis**

H	Route	Estimate	$\beta$	S.E	C.R	p	Result
HO1	Com. Organ (KO) ← Charismatic (KAR)	1.000	.311	.254	2.757	.006	Significant
HO2	Com. Organ (KO) ← Individually considerate (TIM)	.140	.036	.214	.336	.737	No Significant
HO3	Com. Organ (KO) ← Intellectually stimulating (RAN)	-.068	-.019	.161	-.215	.830	No Significant
HO4	Com. Organ (KO) ← Motivational (MOT)	.266	.088	.131	1.042	.297	No Significant

The second objective of this study can be referred to Table 3, which examines four direct effect analyses to detect the main predictors of the organizational commitment (KO) of counselling teachers. According to the results of the study, the charismatic leadership style of the principal is the main predictor in strengthening the organizational commitment of counselling teachers ( $\beta = .311$ ,  $p < .05$ ). The coefficient of determination, or R2 squared value, for counselling teachers' organizational commitment is 0.16, which means that 16% of counselling teachers' organizational commitment is contributed by the principal's charismatic, individually considerate, intellectually stimulating and inspirational motivation leadership styles. In addition, the individually considerate ( $\beta = .036$ ,  $p > .05$ ), intellectually stimulating ( $\beta = -.019$ ,  $p > .05$ ) and inspirational motivation ( $\beta = -.088$ ,  $p > .05$ ) leadership styles of the principal were not significant predictors of counselling teachers' organizational commitment in this study.

Overall, 16% of the organizational commitment of counselling teachers was predicted by the leadership styles of charismatic, individually considerate, intellectually stimulating and inspirational motivation of the principal. The coefficient of determination, or R2 squared value, for organizational commitment of counselling teachers was 0.16. This is in the high range, as suggested by Cohen (1988). Accordingly, the results of the analysis of this study showed that charisma, individually considerate, intellectually stimulating and inspirational motivation contributed 16% ( $R^2 = 0.16$ ) to the organizational commitment of counselling teachers in secondary schools led by school principals in Malaysia.

Figure 2: Main Predictors of Organizational Commitment



## 7. Discussion and Conclusion

This study empirically reinforces the evidence that principals' transformational leadership practices have a significant impact on the organizational commitment of secondary school counselling teachers in Malaysia. Based on the study findings, the charisma dimension in principals' transformational leadership shows a direct and significant effect on the organizational commitment of counselling teachers. By implication, when principals display charismatic characteristics such as creating a clear vision, demonstrating high competence and inspiring school staff, it is able to increase the loyalty, sense of belonging and desire of counselling teachers to continue contributing to the organization. This finding coincides with the findings of Asbari (2020) and Andriani, Kesumawati and Kristiawan (2018) who asserted that leadership charisma is a catalyst for organizational loyalty among educators.

However, the other three dimensions, namely individual consideration, intellectual stimulation and inspirational motivation, show a less significant relationship with the organizational commitment of counselling teachers. The explanation for this phenomenon can be attributed to the intrinsic nature of counselling teachers who are inherently service-oriented and have high internal motivation in carrying out their duties (Machelah, 2017; Dayangku Rodzianah & Mohd Izham, 2021). Therefore, the extrinsic motivational elements of principal leadership may have less direct impact on their commitment.

However, collectively, the four dimensions of principal transformational leadership accounted for 16% of the variance in counselling teachers' organizational commitment. This clearly shows that transformational leadership, although not the only dominant factor, still plays an important role in strengthening organizational commitment. These findings support Bass and Riggio's (2006) suggestion that transformational leadership has a more profound impact on organizational motivation and performance than transactional leadership styles.

The model tested using the Structural Equation Modeling (SEM) method through AMOS showed acceptable model fit indices, including:

- Chi-square/df = 1.981
- CFI (Comparative Fit Index) = 0.931
- TLI (Tucker-Lewis Index) = 0.912
- RMSEA (Root Mean Square Error of Approximation) = 0.058

All these values meet the recommendations of Hair et al. (2010) which set CFI and TLI values above 0.90 and RMSEA below 0.08 as indicators of a good model. In addition, the standardized path coefficients for the charisma dimension were  $\beta = 0.392$ ,  $p < .001$ , confirming a positive and significant contribution to the organizational commitment of counselling teachers.

This finding has important implications for the professional development of school administrators, especially in understanding the role of leadership dimensions that have the most significant impact. Indirectly, it provides direction for the professional training of principals to emphasize the element of charisma in their leadership approach.

From a practical perspective, this finding also provides guidance to the Ministry of Education and State Education Departments in compiling intervention programs and leadership development plans that emphasize a transformational leadership style focused on empathy and shared vision, in line with the aspirations of MySG 2021 and SKPMg2.

In this regard, further research is recommended to:

1. Explore the constructs of work engagement and career satisfaction of counselling teachers as mediating or moderator variables.
2. Implement a qualitative or mixed methods research approach to capture the dynamics of interpersonal relationships between counselling teachers and administrators.
3. Expand the context of the study to primary schools, boarding schools or international schools to understand the applicability of these findings more comprehensively.

In conclusion, this study has successfully answered the research questions and proven that principals' transformational leadership, especially the charisma dimension, has a positive impact on the organizational commitment of counselling teachers. Although other dimensions are less significant individually, their cumulative contribution cannot be ignored. Therefore, efforts to strengthen transformational leadership styles among school administrators need to be strengthened through continuous training, guidance and recognition to ensure sustainable organizational character development in the education sector.

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# ENHANCING ENGLISH PROFICIENCY IN EDUCATION THROUGH THE ROLE OF DIGITAL TRANSFORMATION LEADERSHIP

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**Abstract:** *The rapid evolution of technology and globalization has reshaped the education landscape, making it essential for leaders to adopt digital transformation models in alignment with national language policies. In Malaysia, the Memartabatkan Bahasa Melayu dan Memperkukuh Bahasa Inggeris (MBMMBI) policy aims to preserve the prestige of Bahasa Melayu while enhancing English proficiency as a driver of international competitiveness. This qualitative research paper identifies the role of digital transformation leaders in executing education reforms to advance MBMMBI objectives, particularly through the integration of technology in English language learning. Digital transformation leaders act as strategic visionaries, bridging pedagogical innovation with technological advancements to improve teaching effectiveness, build bilingual capabilities, and expand equitable access to quality education. Leveraging digital platforms, online resources, and data-driven language learning tools, these leaders can cultivate enriched, interactive learning environments that boost student engagement and English proficiency without compromising the national linguistic identity. The paper further discusses how leadership in the digital era can address challenges related to teacher readiness, equitable access, and curriculum alignment, ensuring that both Bahasa Melayu and English thrive in Malaysia's education system. Ultimately, the study underscores the importance of visionary, technology-driven leadership in realizing MBMMBI aspirations and elevating Malaysia's global educational standing.*

**Keywords:** *Digital Leadership, Educational Reform, MBMMBI, Bilingual Education, English Proficiency.*

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## 1.0 Introduction

As the world becomes increasingly globalized, proficiency in English has transformed from another school subject to a vital tool for international communication, business competitiveness, and mobility. In Malaysia, enhancing English proficiency among youths is a national priority, central to unlocking career prospects as well as enabling effective global contribution (Lee, 2025). However, declining standards continue to undermine student potential in fields like science, technology, and international business, calling for innovative interventions in the education sector (Lee, 2025).

This government commitment is observed in the Upholding the Malay Language and Strengthening the English Language (MBMMBI) policy that balances national linguistic identity with the imperatives of English proficiency (Sin, 2025). Meanwhile, the ministry prioritizes the integration of technological innovations like Artificial Intelligence (AI) for teaching and learning improvement (Sin, 2025). This policy-technology intersection underscores a national imperative of reform for equipping students with required linguistic competencies.

School principals are at the center of such reform, having the mission to lead digital change at the school level. Extensive technological advancement has transformed their work altogether, demanding new digital leadership competencies (McCarthy et al., 2023; Orfanidou & Kopsidas, 2023). Principals are now expected to be strategic leaders brokering digital challenges and opportunities to lead pedagogical innovation (Ghavifekr & Yue, 2022; Karaköse & Tulubas, 2023), bridging the gap between national policy and classroom practice.

The research focuses on the leadership of digital transformation in enhancing English proficiency in Malaysian schools. The study contends that effective school leaders are change drivers in leveraging technology to ensure English language learning and teaching are interactive and productive. Principals, through the adoption of digital leadership models, can address challenges of teacher readiness, access equity, and curriculum alignment as championed in the Malaysian Education Blueprint (2013-2025). This study explores how strategic digital leadership may realize MBMMBI policy ambitions, leveraging digital platforms and data-driven applications without compromising the national linguistic identity.

## **2.0 Literature Review**

### **2.1 Malaysian School English Proficiency**

English as a subject is a mandatory element in Malaysian schools, but student proficiency is relatively uneven. These variances are often attributed to variances in teaching approaches, school resources, and policy implementation (Ramakrishnan et al., 2025). Private school teachers, with improved technology and smaller class sizes, will typically have more participative, student-centered teaching approaches. On the other hand, teachers at government schools can likely rely more on cramming due to insufficient class space and powerful syllabi. This means that student-initiated teaching yields better outcomes, although pedagogic autonomy is constrained by issues such as outdated curricula and examination pressures (Ramakrishnan et al., 2025).

### **2.2 Policy Initiatives**

Large policies like MBMMBI and the Highly Immersive Programme (HIP) aim to enhance English while keeping Malay as a national language (Rasidi et al., 2020). HIP, in particular, promotes the use of English through school-based intervention activities like debates and language camps to provide an immersive environment. But its application is unequal; city schools with more resources and competent leadership carry it out more effectively than rural schools, which are faced with underqualified instructors and limited budgets (Adnan & Mohamad, 2024; Kamsin & Mohamad, 2020). This disparity shows how the enforcement of policy can widen prevailing education inequalities without targeted intervention.

## 2.3 Digital Transformation in Language Education

Digitalization creates new avenues for the English language via web-based platforms, mobile applications, and blended learning. Such resources enable interactive, tailored instruction (Wu & Huang, 2025). Success, however, is more than access to technology; it requires successful teacher training and a robust institutional leadership to integrate digital tools meaningfully into pedagogy. Infrastructural inequalities, for instance, unstable internet connectivity in rural areas, also threaten to undermine the benefits of online learning, further outlining the need for systemic planning and equitable resource allocation (Wu & Huang, 2025).

## 2.4 Leadership's Role in Digital Transformation

School administration is key to aligning digital change to school results. Principals shape school climate, motivate teachers, and ensure that technology supports broader learning goals (Mutil et al., 2024). Effective leaders not just provide resources but also model technology use, leading to an innovation culture. Leadership development in Malaysia has revealed that strategic collaboration and vision are required for sustainable digital integration, particularly in resource-poor schools (Ramalingam et al., 2024).

## 2.5 New Technologies for Language Learning

These technologies, such as VR and AR, present immersive environments for the practice of English skills, with stimulating alternatives to traditional methods (Prabakaran et al., 2025). With benefits seen in proficiency and digital literacy studies, there are disadvantages like cost, need for teacher training, and infrastructural limitations on adoption. Prolonged without controlled leadership and policy interest, the technologies will reinforce education inequalities, although significant potential exists if adopted inclusively (Prabakaran et al., 2025).

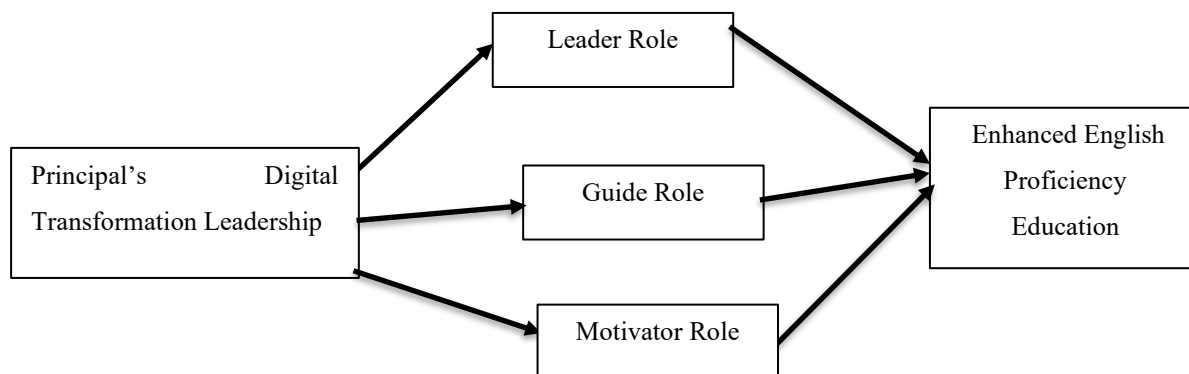
## 4.0 Tables and Figures

**Table 1: Digital Transformation Leadership Roles in Enhancing English Proficiency**

<b>Role</b>	<b>Brief</b>
Principal as a Digital Leader	Acts as a visionary leader in integrating digital platforms, online resources, and data-driven tools to improve English teaching effectiveness and student engagement.
Principal as a Digital Guide	Provides direction and training to teachers on incorporating technology into classroom practices, ensuring alignment with MBMMBI policy.
Principal as a Digital Motivator	Inspires and motivates teachers to embrace innovation, reduces resistance to change, and creates a culture of digital confidence.

(Source: Adapted from Digital transformation and innovation for enhancing the performance of primary schools in Malaysia by A. Ibrahim, M. J. Jusoh, N. Tahir, S. S. B. Hamzah, & M. Tasilkhan, 2024, *Masyarakat, Kebudayaan dan Politik*, 37(4), pp. 446–458. <https://doi.org/10.20473/mkp.V37I42024.446-458>. CC BY-NC-SA 4.0.)

**Figure 1: Framework of Digital Transformation Leadership in Enhancing English Proficiency**



## 5.0 Research Methodology

This study employed a qualitative design to investigate the experiences and perceptions of school leaders on how they can contribute to enhancing English language proficiency through digital transformation leadership. A qualitative design was suitable since it enables the in-depth comprehension of complex phenomena within their original contexts, collecting high-quality detailed information that could not be obtained if quantitative techniques were used in isolation (Arinaitwe, Kamugisha, & Kobusingye, 2024). This was required to address the research question: How do school principals exercise digital transformation leadership for enhancing English language proficiency in alignment with the MBMMBI policy?

### Research Design and Sampling

The sampling technique used in this study was purposive sampling, hence it was easy to select participants who had first-hand experience with digital school leadership practices. Principals and school leaders were of interest, given that they can initiate digital actions and school culture (Mutil, Busari, Mazlan, & Ujil, 2024). The key requirement was that the participants must be school principals who have had a minimum of two years of experience in their leadership role and must have initiated or overseen digital transformation initiatives with the aim of improving English teaching and learning. Six school leaders participated in the research, from diverse urban and rural schools, to obtain diverse perspectives. Sample size was within qualitative research conventions, valuing depth over the breadth of data (Roberts, 2020). The participants were all provided with an information sheet and gave informed consent prior to being engaged.

### Data Collection Procedure

The data collection process employed was a semi-structured interview guide, as suggested by Roberts (2020), who pointed out the importance of having proper interview question formulation in order to gain rich data from the participants. The interview questionnaire was organized into four key sections for exhaustive coverage. The first was on Leadership Vision and Policy Context, examining the principal's familiarity with the MBMMBI policy. The second, Implementation of Digital Practices, questioned the exact tools applied and the strategies employed. The third section explored Challenges and Enabling Factors, and the fourth, Monitoring and Impact Assessment. Semi-structured interviews balanced the issues of structure and flexibility, allowing the researcher to probe into key areas as well as give

participants the autonomy to elaborate on their experiences. The method proved highly effective in leadership research, where narrative and person-specific insight is most vital to clarify fuzzy phenomena (Dunwoodie, Macaulay, & Newman, 2022). Collection of data was via face-to-face interviews and web interviews via secure websites, where participants were accessible and available. Interviews were conducted for 45 minutes to 60 minutes and were audio-recorded with participants' consent. Online interviewing was recognized as a legitimate and acceptable technique, particularly in education research, where geography and logistical factors can prove significant (Dunwoodie et al., 2022).

### **Data Analysis Approach**

Data analysis followed thematic analysis, a common qualitative approach employed to identify and understand patterns in interview data (Arinaitwe et al., 2024). Given the manageable size of the dataset, a manual coding process was used to build a deep familiarity with the data. The process involved transcribing interviews, conducting iterative coding, and constructing themes to identify recurring concepts related to digital leadership roles and challenges.

To enhance methodological transparency, the following example illustrates the coding process from a raw data excerpt to the development of a theme:

Raw Data (Participant Quote): "I always make sure I am the first to learn and apply all new courses and technology applications before teaching them to teachers and students."

Initial Code: Principal as a lead learner

Focused Code: Modelling digital competence

Final Theme: Leading by Example

The analysis began with familiarization, involving multiple readings of the transcripts. This was followed by generating initial codes, where significant statements were manually annotated using margin notes and a structured coding manual. Subsequent steps involved collating codes into potential themes, reviewing these themes for coherence, and refining them through an iterative process. The analysis actively incorporated direct participant quotes to ground the findings in the authentic experiences of the principals, as evidenced in the Results section. Thematic analysis provided a systematic yet flexible approach, allowing for both deductive coding informed by existing literature and inductive coding derived from the participants' narratives (Braun & Clarke, as cited in Arinaitwe et al., 2024). This ensured the findings were both theoretically informed and empirically grounded. To ensure coding reliability, an inter-coder agreement process was conducted, where two researchers independently coded a subset of transcripts and compared their analyses to reach a consensus.

### **Trustworthiness and Ethical Concerns**

In a bid to enhance trustworthiness and credibility, the research used methods like member checking, where the participants verified their interview transcripts for accuracy, and data source triangulation, where findings were compared with policy documents and literature on digital leadership in education. These conformed to Dunwoodie et al.'s (2022) guidelines, where they highlighted methodological transparency as being one of the significant ways of guaranteeing rigor in qualitative research in educational and organizational settings. Ethical

practices, including informed consent, confidentiality, and voluntary participation, were also adhered to stringently as best practice in qualitative research (Roberts, 2020). All information were anonymised at transcription and analysis point and pseudonyms used on findings in reporting to promote participant anonymity. Data were kept on password-protected devices to be in line with ethical research practices.

## 6. Results

This section presents the findings derived from the thematic analysis of semi-structured interviews conducted with six school principals. The analysis, which followed the systematic process outlined in the methodology, identified six major themes that capture the core strategic leadership practices employed to enhance English proficiency through digital transformation. These themes emerged from the participants' detailed narratives regarding their leadership vision, implementation practices, challenges, and monitoring efforts. The findings reveal that principals adopt diverse and context-driven approaches, corresponding to established practices of digital leadership identified in the literature (Mariani, Soaib, Arnida, & Siti Noormi, 2021; Suhaibah & Ahmad Zabidi, 2024). The resulting themes are: (1) utilizing digital resources in rural schools, (2) developing English-rich school cultures in urban schools, (3) proactive planning and participation in external programs, (4) continuous monitoring of digital applications and competence, (5) feedback, reflection, and intervention, and (6) fostering teamwork and community collaboration. Collectively, these findings demonstrate that principals are not only instructional leaders but also digital transformation agents who align school-level initiatives with national policies such as the *Memartabatkan Bahasa Malaysia dan Memperkukuh Bahasa Inggeris (MBMMBI)* policy and the *Malaysia Education Blueprint (2013–2025)*.

### Theme 1: Utilizing Digital Tools in Rural Schools

Rural principals expressed a strong inclination to employ both offline and online digital tools to combat widespread resource and accessibility deficits. They employed tools like Google Classroom and WhatsApp groups strategically, accompanied by offline learning modules, to combat the problem of inconsistent internet connectivity. This is situational and adaptive leadership in action, where administrators innovate within constraints to have high expectations for the students (Farah & Mahani, 2024). As one of the rural school principals put it, students' spirit is one of the principal sources of encouragement: *"Even in the rural school, students' spirit for studying English and testing new technology is increasing. They are interested and want to know more and more"* (Principal 1). This innovation in bridging the digital divide is an equity-based leadership strategy, preventing disadvantaged students from lagging behind in the national effort toward improving English competency.

### Theme 2: Developing English-Rich School Cultures in Urban Schools

Urban principals emphasized the development of a rich, English-soaked school culture as a vital strategy. Their approaches were to insist on English use in assemblies, establish language corners, and include English in co-curriculum activities like debate and drama, aligned with the Highly Immersive Programme (HIP) goals (Adnan & Mohamad, 2024). A principal spoke about needing to have continuous activity outside the "safe zone": *"I do not want to be in a safe zone."* *Even though we are within an urban school, program activity concerning technology use for English is continually done among teachers and students"* (Principal 2). The kind of

focus on cultural change as opposed to availability of resources is a typical indicator of transformational leadership, whereby the principal's vision directly dictates the linguistic culture of the school community, supporting confidence and fluency among students for global movement.

### **Theme 3: Proactive Planning and Participation in External Programs**

One of the significant practices mentioned was proactive planning and enrollment in external programs organized by the State Education Department (JPN) and District Education Office (PPD). This helped ensure correspondence of school-level activities with national policy documents like the Malaysia Education Blueprint (2013-2025). Principals demonstrated strategic vision in using these programs for teacher capacity development and student learning improvement. A principal highlighted her personal commitment to being current: *"I always ensure that I am the first to discover and apply all new courses and technology applications. Then, I ensure they are taught to all teachers and students. I am in constant contact with the JPN and PPD to make sure that we are always updated"* (Principal 3). This tradition illustrates principals bridging micro-level classroom reality and macro-level policy guidance, achieving harmony and sustainability in English language teaching initiatives.

### **Theme 4: Continuous Monitoring of Online Applications and Competence**

The study confirmed that the principals rely on systematic observation to monitor the usability of online applications and the competence of teachers and students when using them. This involved regular checking, classroom observation, and formative assessment, typical of instructional leadership (Fazal, Gunasegaran, & Justin, 2022). A principal stressed leading by example and utilizing resources to the fullest: *"I make sure everyone in staff, especially the administrators, keep a regular check on the usage of any technology apps made available. We need to use them to the maximum and stay updated always"* (Principal 4). Through constant monitoring, principals acted as quality controllers, detecting gaps early on and ensuring digital transformation work translates into actionable language learning results.

### **Theme 5: Feedback, Reflection, and Intervention**

Feedback and reflection were always at the core of instructional leadership for principals. They planned feedback meetings, fostered reflective pedagogy in teachers, and developed tailored interventions, such as remedial classes and special workshops, to address vulnerabilities. This aligns with reflective leadership models that allow for continuous school improvement (Suhaibah & Ahmad Zabidi, 2024). The collaborative nature of the process was seconded by a principal who stated, *"We as principals cannot work alone ('syok sendiri'). We have to seek feedback, reflect, and intervene for better outcomes. We have to be always there to assist and recoup"* (Principal 5). By traversing this feedback and intervention cycle, the principals create a responsive and supportive environment that is congruent with professional growth and enhanced teaching quality.

### **Theme 6: Fostering Teamwork and Community Engagement**

Finally, the principals highlighted the preeminent importance of fostering strong collaborative networks between teachers, parents, and the wider community. They moved to place mastery of English as a collective effort, thereby increasing the support system for learning languages. This is a system leadership model based on collective effort towards sustainable change



(Ghavifekr & Yue, 2022). As one principal put it, *"In my opinion, teamwork is the key, and we must not forget to include the community in all school activities. English language mastery and literacy require all efforts from all. It is one for all, and all for one"* (Principal 6). By creating this mutual ethos, principals become more effective with their own leadership, creating a culture of community with an immense influence over student proficiency.

## 7. Discussion and Conclusion

The purpose of this study was to examine how school principals' leadership of digital transformation contributes to enhanced English language proficiency in Malaysian schools and in the context of the *Memartabatkan Bahasa Melayu dan Memperkukuh Bahasa Inggeris* (MBMMBI) policy. Findings highlight that the principals utilize diverse, context-dependent strategies beyond the administrative management that position them as digital leaders, instructional managers, and partners within the community. These findings forcefully align with established leadership principles, showing that effective digital transformational leadership is not a new concept but only an extension of instructional and transformational leadership models to a technology context. Collectively, these approaches demonstrate how school leaders play a critical role in bringing national education policies to tangible action with direct implications for instruction and learning. These observations are also reflected in the research model (Figure 1), where the school principal is represented as a leader, a change agent, and a digital navigator whose activities ultimately improve English language capability.

One of the highlights was the use of digital tools to bridge the rural–urban gap. Principals in rural schools maximized low-bandwidth and offline computer-based applications to enable universal access, while their counterparts in urban schools utilized more advanced infrastructure to provide English-rich environments that were supported by the Highly Immersive Programme (HIP). This is precisely what Digital Guide Role in the model suggests, where principals take on the facilitator role of computer-based applications in enabling learner learning. This is in theory aligned with situational and transformational leadership theories that demand local situation sensitivity among the overall policy goals (Farah & Mahani, 2024; Adnan & Mohamad, 2024). Specifically, the initiative to construct English-dense contexts in city schools is a quintessential instance of transformational leadership, in which leaders inspire and instill in their workers toward a significant transformation by framing a shared vision for bilingual proficiency, a basic assumption of the theory (Korejan & Shahbazi, 2016). The implication is that digital transformation leadership is not normal but necessarily adequately adaptable to deal with variations in resources, culture, and preparedness.

The findings also highlighted the need for systemic monitoring and planning in sustaining reforms. Principals' engagement with district (PPD) and state (JPN) programs brought in external aid access, professional development, and policy alignment, and thus increased institutional capacity. Such an exercise of articulating and aligning school goals with broader policy initiatives is a hallmark of instructional leadership. As Hallinger (2005) suggests, strong leaders focus on student learning by bringing attention and resources to bear on a fewer number of measurable, data-driven goals developed with the school community. At the same time, regular assessment of online applications and student proficiency allowed for school leaders to attain accountability and to act early when gaps were detected. These interventions illustrate the Principal's Transformation Leadership component of the model whereby leadership vision and direction are supplemented with alignment with state and national-level educational priorities. This reinforces Mukhtar and Abd Razak's (2024) and Jaafar et al.'s (2021) point that instructional leadership involves forward planning, as well as informed decision-making.

Another component of the discourse comprises principals as instructional leaders that foster feedback, reflection, and teacher growth. By offering their professional learning communities, peer-sharing, and targeted interventions, principals enact the Leader Role of the model. It is not a role of strategic direction-setting alone but of motivating and empowering teachers to implement digital pedagogy in meaningful ways into classrooms. This aligns with the transformational leadership factor of "individualized consideration," wherein leaders serve as mentors and provide individualized attention to help them grow professionally (Korejan & Shahbazi, 2016). The finding resonates with Fazal et al. (2022), who argue that resilient schools thrive when there is leadership that allows for constant reflection and professional development. In their implementation of these practices, principals demonstrated that leadership could have a direct influence on the quality of teaching and students' learning results.

Another prominent theme was distributed leadership. Principals came to know that English language proficiency can't be built inside school walls alone but includes active participation of parents, society, and other stakeholders. These include measures such as parent computer training and neighborhood-based English programs that complemented the available services to the students. This facet works to reinforce the collaborative strand of the Transformation Leadership function of the model, whereby the principal acts as a bridging agent between the school and the outside environment. This building of collective efficacy is also reflected in the early work conducted on school leadership, which posits that successful leaders are informed by clearly stated values and nurture a supportive culture central to school success, especially under challenging circumstances (Hallinger, 2001; Day et al., 2001). These are in accordance with Mutil et al. (2024), who argue that digital leadership has to be participatory and networked, spanning beyond institutions' confines to enhance equity and sustainability.

## **Conclusion**

In conclusion, the study confirms that leadership in digital transformation is at the center of enhancing English language proficiency among Malaysian students under the MBMMBI policy. Principals perform this role by executing six interconnected practices: using digital technologies, creating culture-enriched English, strategic planning, monitoring, constructing reflection and intervention, and establishing collaborative partnerships. These practices translate directly into the research model (Figure 1), confirming that the intersection point of the intersection of leadership functions and digital guidance yields tangible improvement in student outcomes.

This study adds something original to the literature on digital leadership by moving beyond a generic, one-size-fits-all approach. Where studies have hitherto wasted considerable time looking at technological take-up in resourced or Western contexts, this study presents a richness-based model of context-driven digital leadership. It vividly illustrates how effective leadership behaviors are strategically customized to address specific local issues such as the rural-urban digital divide, and used to drive specific national policy objectives, here the MBMMBI's dual priorities of improving English while preserving the national language. This context-specific and policy-related implementation is an enhancement of the ways digital leadership is enacted in a range and diversity of difficult education settings.

The study also contributes to educational leadership literature by showing the role of contextual differences, in this case of city and countryside schools, in shaping digital programs. It also highlights the imperatives of digital competence capacity building, strategic planning, and

building the community as a way of making reform stick and more equitable. Policy-wise, the findings underscore the need for sustained investment in leadership development, infrastructure support, and monitoring mechanisms in order to actualize Malaysia Education Blueprint (2013–2025) visions.

Finally, the findings address the revolutionary promise of digital leadership in actualizing bilingual proficiency without compromising on the national language. Principals, by accepting technology as a strategic driver, can craft deep learning ecologies that prepare students to do more than merely pass exams; they position students to perform effectively in an ever-more globalized world society. Developing principals' digital transformation leadership capability is therefore a core building block to achieving MBMMBI aspirations and Malaysia's future educational competitiveness.

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# LEADING DIGITAL TRANSFORMATION IN RURAL-SUBURBAN SCHOOLS: INSIGHTS FROM ENGLISH CLASSROOMS AT SMK TANAH MERAH

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**Abstract:** *This study investigates the essential role of leadership in facilitating digital transformation within rural-suburban educational settings, focusing specifically on English classrooms at SMK Tanah Merah. Employing a qualitative case study methodology, the research examines leadership strategies, organizational dynamics, and contextual challenges influencing the adoption and integration of digital technologies in the English language classroom. Data collection involved semi-structured interviews and classroom observations to provide a comprehensive understanding of how leadership practices shape technological innovation and pedagogical enhancement. Findings underscore the importance of visionary and adaptive leadership, collaborative stakeholder engagement, and sustained professional development in fostering an environment conducive to digital transformation. The study contributes nuanced insights into the interplay between leadership and technology adoption in under-resourced schools, offering evidence-based recommendations for policymakers and practitioners aiming to advance digital equity and educational quality in similar rural-suburban contexts.*

**Keywords:** *Digital Transformation, Educational Leadership, Rural-Suburban Schools, English Classrooms, Technology Integration*

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## 1. Introduction

The rapid advancement of digital technologies has reshaped the educational landscape globally, demanding schools to rethink traditional approaches to teaching and learning. Digital transformation is not simply the integration of devices or platforms into the classroom; it is a leadership-driven process that requires vision, collaboration, and sustained professional growth (Fullan, 2020). In Malaysia, this shift is strongly emphasized in the Digital Education Policy (DEP, 2021), which highlights the need for equitable access to digital learning opportunities across all school contexts. While urban schools have advanced in adopting digital education, rural and suburban schools continue to face difficulties in putting policy into meaningful practice.

Rural-suburban schools often contend with limited infrastructure, uneven internet connectivity, and varying levels of teacher readiness (Ng, 2019). Yet, these schools are not exempt from the expectation to adopt digital practices that enhance student learning and prepare learners for a technology-driven society. In such contexts, leadership becomes critical in bridging the gap between aspiration and reality. Leaders must not only ensure access to resources but also build

a culture that motivates teachers to engage with digital tools and empowers students to participate actively in their own learning (Leithwood & Sun, 2018).

Existing research on digital leadership tends to focus on high-performing or urban schools, where favourable conditions facilitate innovation (Tan & Ramli, 2021). Less is known about how leaders in under-resourced, rural-suburban contexts navigate the complexities of digital transformation while balancing competing demands. Hence, there is a need to look at the leadership role of administrators towards digital transformation of teaching and learning environment in rural sub-urban secondary schools, specifically in Port Dickson to understand the realities of teachers, students and the facilities available in rural-suburban schools.

This study addresses that gap by examining digital transformation within the English classrooms of SMK Tanah Merah, a sub-urban secondary school in Port Dickson, with rural characteristics. The English classrooms were selected as the focal point because language teaching inherently benefits from interactive, creative, and collaborative digital tools. By focusing on this setting, the study provides insights into how leadership practices enable technological integration, support teachers' professional growth, and enhance student engagement in a resource-limited environment.

The paper aims to contribute to the growing body of literature on digital education by offering context-specific insights into leadership and technology adoption. Through a qualitative case study approach involving interviews with teachers and students, complemented by classroom observations, the study sheds light on how leadership practices foster digital innovation in rural-suburban schools. The findings are intended to inform policymakers, school leaders, and practitioners seeking to advance digital equity and sustain educational quality in similar contexts.

## **2. Literature Review**

### **Digital Leadership in Education**

Digital leadership has emerged as a central factor in driving educational change. Scholars consistently emphasize that technology integration in schools is not merely a technical issue but a leadership challenge (Fullan, 2020; Leithwood & Sun, 2018). Effective digital leaders articulate a clear vision, create supportive structures, and foster collaboration among teachers, students, and the wider school community (Ng, 2019). Adaptive leadership is required to navigate uncertainties and mobilize resources where constraints exist (Harris & Jones, 2020). Professional development is also identified as a key lever to integrate technology with pedagogy, with leaders expected to provide continuous learning opportunities that build teacher confidence and competence in using digital tools (Tan & Ramli, 2021). Adaptive leadership requiring new learning with a known solution because they can evoke new ways of sense-making, thereby motivating others to change the way in which they talk, behave, and work together and in this context leading the digital transformation starting from a classroom (Heifetz, R., Grashow, A., & Linsky, M. (2009).

Below is a look at the Heifetz's Adaptive Leadership model and how it connects to digital transformation in sub-urban secondary schools in Malaysia. Heifetz's Adaptive Leadership model (1994) focuses on how leaders mobilize people to face challenges, adjust to change, and thrive in uncertain environments. Unlike technical problems, which can be solved with existing knowledge and expertise, adaptive challenges require shifts in people's values, beliefs, roles, and behaviours (Heifetz, R., Grashow, A., & Linsky, M. (2009).

There are six core principles of the model:

1. Distinguish technical versus adaptive challenges. Generally technical challenges have clear solutions (for example: fixing a computer). In contrast, adaptive challenges are complex, require new learning, and involve changing mindsets such as helping teachers embrace digital tools.
2. Get on the balcony. Leaders must step back, observe the bigger picture, and identify patterns, resistance, or opportunities before acting. Encourage input from diverse or less-heard voices, as they may offer innovative solutions.
3. Regulate distress. Change creates anxiety. Leaders must manage the level of stress, so it motivates rather than overwhelms people.
4. Maintain disciplined attention. Leaders keep the community focused on tough issues without distraction or avoidance.
5. Give the work back to the people. Leaders do not provide all the answers. Instead, they empower stakeholders such as teachers, students, and administrators to take ownership of the solutions.
6. Protect voices of leadership from below. Leaders must listen to and support input from all levels, especially marginalized voices, as innovation often comes from unexpected places.

### **Challenges of Digital Transformation in Rural-Suburban Schools**

While digital innovation is often showcased in urban and high-performing schools, rural-suburban schools face distinct challenges that shape the pace and sustainability of transformation. Limited infrastructure, inconsistent internet connectivity, and restricted budgets are common barriers (Norazman & Hashim, 2020). Teachers in such contexts often report feeling underprepared to integrate technology effectively, pointing to the need for structured support and leadership guidance (Salleh & Laxman, 2019). Moreover, disparities in student access to devices and home internet exacerbate inequalities in learning outcomes (Azman & Yunus, 2020). Despite these barriers, rural-suburban schools also demonstrate resilience and creativity in leveraging whatever resources are available, with leadership playing a critical role in sustaining teacher motivation and student engagement (Harris, 2021).

### **English Classrooms as Sites of Digital Innovation**

Language learning provides fertile ground for digital experimentation because of its inherently interactive and communicative nature. Undoubtedly, most students like using Language Learning Websites (LLW) to learn English. This shows that interactive websites are important for teaching languages in modern times and Language Learning Websites are the preferred choice among students and aligns with the current trend of a diverse range of LLWs available by using google and other tools (Huda, Nugrananda, & Prayoga, 2023) Studies show that digital tools enhance language learning by promoting collaboration, creativity, and authentic communication (Yunus, 2018; Lai & Morrison, 2020). The findings highlight that students generally have a positive view of online resources for learning English. However, there are still some challenges to work on to make these online platforms better (Huda et al., 2023). In the Malaysian context, the English classroom has often been the site of pilot digital initiatives, partly due to the availability of online resources and the importance of English in national education policy (Ministry of Education Malaysia, 2013). Leadership is essential in ensuring that such initiatives move beyond superficial use of technology to meaningful pedagogical transformation. By supporting teachers in adopting digital strategies and encouraging students



to actively participate, school leaders create conditions where English classrooms become catalysts for wider school-level innovation (Ng, 2019; Tan & Ramli, 2021).

### **Summary of Literature**

The literature highlights that digital leadership is essential in enabling transformation, particularly in contexts with resource constraints. However, gaps remain in understanding how leadership is enacted in rural-suburban schools and how specific subject areas, such as English, can act as entry points for digital innovation. This study addresses these gaps by examining leadership practices in English classrooms at SMK Tanah Merah, offering insights into how digital transformation in language education unfolds within a rural-suburban school setting.

### **3. Research Methodology**

The participants were purposefully selected to capture a range of perspectives on leading digital transformation, with particular emphasis on the English subject. They included school administrators, who play a pivotal role in setting the vision for digital transformation; two language teachers and three non-language teachers, directly involved in implementing digital practices in their classrooms; and a small group of students from English classes, to reflect learner perspectives on the use of digital tools. This purposive sampling ensured that participants had direct experience with digital initiatives in teaching and learning of the English language.

Data was collected primarily through semi-structured interviews with 18 informants in total (two school administrators, five teachers and 11 students). Interviews with the school administrators and teachers explored aspects including leadership strategies, challenges, and supports in integrating digital tools into classroom practice. Student interviews examined their experiences and perceptions of learning English in a digitally enriched environment. To complement interview data, brief classroom observations were conducted during selected English lessons. During classroom observations, the main researcher ensured minimal disruption to the teaching and learning process. These observations provided contextual insights into how digital tools were applied in practice. Nevertheless, the emphasis of data collection remained on the interviews. In terms of ethical procedures, the data collected from interviews and classroom observations were stored securely and accessible only to the main researchers.

The data were analysed thematically, following Braun and Clarke's (2006) six-step framework for thematic analysis: 1. be familiar with data, 2. generate initial codes, 3. search for themes, 4. review themes, 5. define and name themes and 6. produce the report. Interview transcripts and observation notes were coded manually to identify recurring patterns related to three main aspects such as leadership practices, teacher support, and student engagement with digital tools. Themes were refined iteratively to ensure they reflected both the data and the research objectives. In addition, to increase data reliability, the main researcher conducted member checking with participants, for example with the English teacher, administrator and students as part of the coding validation process to confirm the accuracy of interpreted themes.

### **4. Results**

The findings from this study are organized into four major themes: (i) access and use of digital tools, (ii) digitalization adoption in English Classrooms, (iii) support from non-language teachers and administrators, and (iv) student engagement and experience. Each

theme is supported by participants' perspectives, highlighting how digital transformation was experienced at SMK Tanah Merah.

#### Theme 1: Access and Use of Digital Tools

Teachers and students actively used a range of digital platforms including Delima, Google Classroom, Canva, YouTube, and WhatsApp. These digital platform tools were integrated into daily teaching and learning processes, especially for lesson delivery, communication, and assignments. An English teacher emphasized:

*“Google Classroom helps me organize lessons and assignments. Students know where to find everything.”* (English Teacher A)

It was observed that the non-English teachers and the student participants liked to answer this question as they smiled and showed that they are happy to utilise the digital platform. It can be concluded that the participants recognized the role of digital tools in making lessons more structured and interactive.

#### Theme 2: Digitalization Adoption in English Classrooms

English teachers were often the first to try to integrate digital tools into their lessons. While English teachers faced challenges in adopting digital tools in their classrooms, their persistence demonstrated that digital practices could enhance engagement and learning outcomes. At times, language teachers played a pioneering role to integrate digital tools such as us using Google Classroom and WhatsApp as platforms to share online materials from any website, apps, YouTube or Canva, create communication links using Google Meet and so on.

It is observed that when language teachers such as English teachers share these experiences and outcomes with other teachers, for example during meetings, these sharing nuances often serving as aspirations or motivations to their other colleagues to try out and apply the use of digital tools into their lessons too. While teachers in the school faced challenges in adapting, their persistence demonstrated that digital practices could enhance engagement and learning outcomes. An English teacher remarked about some positive outcomes of utilizing new digital tools from the Google classroom applications:

*“I always demonstrate how to use new tools first in class. Once students are confident, they gradually start using them on their own. Integrating digital materials through platforms students prefer makes it easier to capture their attention and encourage participation, for example, using WhatsApp instead of Telegram, or sharing a simple Google Meet link rather than Delima through Classroom.”* (English Teacher B)

It is also observed that behaviours of the English teachers such as their persistence and the positive attitude of being willing to experiment with digital tools and platforms had encouraged students to participate more actively in both online and face to face classroom teaching and learning situations especially to interact with teachers and classmates inside and outside of classrooms. As a result, when other teachers who are teaching at this rural, sub-urban school area observed these positive outcomes, they too were indirectly inspired to explore similar methods to improve learning and achievement among their own students. Hence, it could be interpreted that their digital leadership encouraged not only student participation but also inspired the non-English teachers to integrate digital education and entertainment into their

own subjects, although not without challenges. Indirectly, with these role models, administrators would inspire all his or her teachers to apply digital transformation in their teaching and learning, albeit the challenges face in terms of facilities and students' readiness.

### Theme 3: Insights from Non-English Teachers and Administrators

The adoption of digital practices was not limited to English classrooms. Administrators consistently encouraged all teachers to transform their pedagogy and become active to apply technology in their own classrooms, such as using online platforms developed by KPM, such as DELIMa. Their approach emphasized trial, error, and gradual improvement. Often, school administrators would remind all teachers so that the teachers remain constantly motivated and encouraged regarding the positivity to adopt and integrate digital practices which were not only limited to the English classrooms (using songs, YouTube videos etc.). The administrators always encourage all teachers to be adaptive with engaging their students by leading digitalization and transforming their pedagogy with active use of technology tools, especially DELIMa. Below are non-English and administrator's insights based on experience of trial and error. A non-English teacher reflected:

*"I found it inspiring to see students learning in many fun ways when digital tools were used in English classrooms. I intend to do the same in my class. However, it can be captivating yet also tedious and sometimes complicated to implement within a short time."* (Social Science Teacher)

Administrators also played a role in encouraging digital use by providing direction and monitoring. One administrator highlighted:

*"We encourage teachers to explore and share what works. Language classes like English subjects and English teachers are among the English teachers who are always being exposed to new technology or apps and implementing it in their classes. Therefore, language teachers are always the anchor of the integration of digital media in classrooms, be it under JPN, PPD or SSTP and are often the first to try any and others follow."* (Administrator)

With regards to these moments of sharing pedagogical experiences related to the aspect of challenges, it could be observed that the participants' facial gestures showed a bit of stress. In addition, the participants also nodded and smiled when they talked about their approval to use and explore the use of digital classroom tools in future lessons.

### Theme 4: Student Engagement and Experience

Many students expressed positive experiences with digital tools, particularly in English learning. They highlighted increased motivation, creativity, and interaction. For example:

*"Using Canva makes projects fun... I feel proud to show my work."* (Form 4 Student)

It could be interpreted that such responses suggest that the English classroom became a catalyst for more active and engaging learning.

**Table 1. Summary of Key Findings**

Theme	Key Findings	Illustrative Evidence (Participants)
Access and Use of Digital Tools	Teachers and students actively used Google Classroom, Canva, YouTube, and WhatsApp for lesson delivery, communication, and assignments.	“Google Classroom helps me organize lessons and assignments.” (English Teacher A)
Digitalization Adoption in English Classrooms	English teachers modelled the use of digital platforms, influencing colleagues and motivating students.	“I always demonstrate how to use new tools first in class.” (English Teacher B)
Support from Non-English Teachers & Administrators	Non-English teachers adopted tools after observing language teachers; administrators provided encouragement and monitoring.	“I learn from the language teachers... I try the same for my class.” (Science Social Teacher)
Student Engagement & Experience	Students reported higher motivation, creativity, and interaction when using digital tools in English classrooms.	“Using Canva makes projects fun... I feel proud to show my work.” (Form 4 Student)

#### Theme 4: Students’ Perspectives on Digital Learning

Students shared a range of experiences and preferences regarding digital learning platforms. Some students expressed challenges with certain platforms, such as DELIMa and Pandai. One student noted:

*“I don’t like DELIMa because I always forget my password. It’s easier to open a link directly.”* (Student A)

Another student highlighted device limitations and ease of communication:

*“I don’t like DELIMa or Pandai apps because I need to install them, and sometimes my phone cannot support them due to storage or other reasons. I also find it much easier and faster to respond via WhatsApp compared to other platforms.”* (Student B)

On the other hand, some students appreciated the convenience of online learning:

*“I like online learning such as DELIMa, Pandai, or other platforms because it is easy to use, we can submit work online, and we don’t need to write in exercise books.” (Student C)*

Students also acknowledged that while digital learning is engaging, certain challenges remain:

*“I like digital teaching and learning; however, I tend to forget to do tasks at home if we don’t finish them in class.”*

*“If I were to use digital tool, i prefer it at school because i have insufficient data to fully attend or commit at home like i laways have problem with GM, etc.”*

*“I prefer online learning more than physical class; however, my internet connection at home is unstable. For example, I can access WhatsApp, but messages are often delayed on Telegram, especially when opening videos or YouTube.”*

Essentially, it could be observed that the student participants nodded and showed happy faces when they shared experiences using the combination of digital tools and face to face classroom activities. In brief, students indicated that digital learning platforms are generally preferred for convenience, lesson submission, and communication and student engagement. However, practical issues such as device limitations, platform accessibility, and internet connectivity can affect their experience negatively. These insights highlighted the need for flexible and student-centered approaches when implementing digital learning in English classrooms.

**Table 2. Students’ Perspectives on Digital Learning Platforms**

<b>Student</b>	<b>Platform Experience</b>	<b>Likes</b>	<b>Challenges / Limitations</b>
A	DELIMa	Easier to open direct links	Often forget password
B	DELIMa, Pandai	Faster response via WhatsApp	Installation issues, device limitations
C	DELIMa, Pandai, other online platforms	Easy to submit online, no need to write in books	-
D	Online tasks	Enjoy digital learning	Tend to forget tasks at home if not completed in class
E	Online learning	Prefer online over physical class	Unstable internet; delays with Telegram, videos/YouTube slow

Students’ experiences with digital platforms show both benefits and challenges. Some face barriers such as forgotten passwords, device limitations, and poor internet, making simpler digital learning tools such as WhatsApp more appealing as compared to Telegram. Whereas, others appreciate the convenience of online learning, such as easy submission and paperless

work. However, negative issues such as self-regulation (forgetting tasks) and infrastructure gaps remain. Hence, it could be suggested that digital learning must balance innovation with practicality, ensuring online platforms are flexible, accessible, and suited to students' real-life contexts.

## 5. Discussion and Conclusion

The findings illustrate how digitalization in teaching and learning is a complex, adaptive challenge rather than a simple technical problem. Teachers and students in this study encountered issues that went beyond technical know-how, such as behavioural change, cultural shifts, and differing readiness levels. This aligns with Heifetz's (1994) concept of adaptive leadership, where leaders must distinguish between technical fixes and deeper adaptive challenges that require changes in mindset and practice (Heifetz, R., Grashow, A., & Linsky, M. (2009). Essentially, the teacher and student participants engaged with a range of online platforms such as Google Classroom, Canva, YouTube, and WhatsApp. These tools provided structure and interactivity, suggesting that the technical capacity to implement digital tools was present. However, challenges such as platform preferences and usability highlighted that successful adoption depends on aligning tools with students' lived realities, echoing Heifetz's idea of mobilizing people to face challenges collectively.

Despite these challenges, English classrooms served as a catalyst for experimentation, modelling, and gradual adoption of digital practices in the school. When combined with supportive administrators and motivated students, digital tools facilitated more interactive, engaging, and student-centered learning experiences. Nonetheless, teachers face challenges such as time constraint for daily digital lesson preparation, varying levels of technological proficiency, and the need for continuous professional development to keep pace with evolving educational technology (Ng, 2019; Tan & Ramli, 2021). In addition to that, administrators encountered structural constraints, such as the school could only provide limited computer lab capacity, smartboard and smart TV facilities which needed to be shared amongst all teachers and classes in the school, and finally, the complexities of managing device usage policies. These challenges highlight similar findings regarding the multifaceted nature of digital transformation in rural-suburban school contexts (Huda et al., 2023; DEP, 2021).

Nevertheless, adaptive leadership extended beyond classrooms. The SMK Tanah Merah school administrators encouraged teachers to adopt and experiment with digital tools. This data aligns with the adaptive leadership principle of guiding through trial, error, and reflection (Heifetz, R., Grashow, A., & Linsky, M. (2009). Similarly, non-English teachers, though initially hesitant, were inspired by other tech-savvy teachers like language teachers' practices, showing how leadership is distributed and influenced other teaching staffs.

Moreover, student engagement and experience reinforce the importance of student-centered approaches. Students reported higher motivation, creativity, and pride in their work when using digital tools. This reflects adaptive leadership's focus on learning, innovation, and collaboration, where students are not passive recipients but active participants in the digital learning process. Taken together, these findings show that digital transformation in sub-urban schools such as SMK Tanah Merah Port Dickson, requires collective adaptive work where teachers experimenting and modelling, administrators encouraging and guiding, and students engaging actively. It is not only a technical process of adopting tools but also an adaptive process of cultural change, collaboration, and resilience.

In conclusion, the adoption of digital tools in sub-urban secondary schools is both promising and challenging. Teachers and students recognized the benefits of platforms such as Google Classroom, Canva, and WhatsApp in making learning more organized, interactive, and engaging. English teachers emerged as early adopters, whose persistence and creativity inspired colleagues across disciplines. Administrators reinforced this transformation by providing encouragement and monitoring, while students demonstrated motivation and approval towards their digital learning experiences.

From an adaptive leadership perspective, this process illustrates the importance of mobilizing people, fostering learning, and navigating uncertainty together. While technical solutions (platforms, apps, internet access) are essential, the real transformation occurs when teachers and students adapt their values, behaviours, and practices to embrace digital learning meaningfully.

In short, effective digital transformation in education requires more than technology—it requires adaptive leadership at multiple levels, where teachers, administrators, and students collaborate to overcome challenges, embrace change, and co-create innovative learning experiences. Consequently, successful digital transformation happens when leaders guide others through the discomfort of change while fostering resilience and adaptability.

## 6. Recommendations

1. **Administrative Support:** Utilize relief classes for digital learning in computer labs or smart classrooms. Ensure relief teachers have access to centralized online materials for continuity, enabling students to engage with subject content even in the absence of the regular teacher.
2. **Compulsory Digital Integration:** Require teachers to implement at least one digital lesson per class each month using platforms such as DELIMa or other relevant tools, ensuring consistent exposure and practice.
3. **Teacher Mindset and Collaboration:** Encourage teachers to cultivate a digital mindset, allocate time to learn new technologies, and collaborate with colleagues to share resources. Longer class periods are recommended for effective setup and execution of digital lessons.
4. **Student Nurturing:** Equip students with foundational IT skills at school and gradually foster independent digital learning. Assignments should be provided well in advance to accommodate limited home access, starting with familiar platforms such as WhatsApp before progressing to more advanced tools (Kirkwood & Price, 2014).

Through these strategies, SMK Tanah Merah can foster an inclusive, sustainable digital learning environment, bridging gaps in access, readiness, and engagement while promoting active and motivated learners. It is hoped that by addressing these recommendations, rural and sub-urban schools such as SMK Tanah Merah could in future, be able to foster an inclusive, sustainable digital learning environment, bridge gaps in access, enhance readiness and engagement while promoting active, motivated, and digitally competent educators and learners.

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# GOVERNING FAITH AND KNOWLEDGE: A COMPARATIVE STUDY ON LEADERSHIP, MANAGEMENT AND INSTITUTIONAL DYNAMICS IN PESANTREN, MADRASAH AND ISLAMIC SCHOOLS IN INDONESIA

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**Abstract:** *This comparative study examines leadership and management practices across three major types of Islamic educational institutions in Indonesia: pesantren (non-formal Islamic boarding schools), madrasah (formal Islamic schools under the Ministry of Religious Affairs), and Islamic schools (under the Ministry of Education). This study aims to identify how institutional form shapes leadership style, governance, curriculum integration, and responses to contemporary challenges. Drawing on historical and institutional analyses, program documents, and case studies, the research develops a typology of leadership orientations (traditional charismatic, bureaucratic/instrumental, and hybrid & transformational). It links these to management mechanisms (decision-making, governance, resource mobilization, teacher development, and quality assurance). The study finds that pesantren leadership remains highly relational and custodial (centered on the kyai's moral authority and community embeddedness), supporting spiritual formation but facing capacity limits in formal management and scaling. Madrasah leaders navigate dual accountability to religious communities and national education authorities, resulting in hybrid administrative practices and a stronger orientation to standardized curricula and teacher professionalization. Islamic school leadership combines academic governance with state accreditation demands, increasingly adopting managerial and strategic approaches but struggling with identity tensions between faith commitments and educational modernization. The paper concludes with policy and practice recommendations for strengthening leadership development, quality assurance, and cross-sector learning while preserving distinctive religious missions. Implications are drawn for policymakers, institutional leaders, and researchers seeking to harmonize tradition and modernity in Islamic education.*

*Keywords: Islamic Education, Educational Leadership, Educational Management, Curriculum Development, Pesantren, Islamic Schools*

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## 1. Introduction

Indonesia's Islamic educational landscape is diverse and historically rich. According to Indonesia's Central Bureau of Statistics (BPS, 2020), Indonesia is a populous Muslim-majority country (about 87% Muslim of 270 million citizens). Indonesia has long integrated religious and "secular" learning throughout history, encompassing traditional pesantren (Islamic Boarding Schools), formal madrasah, modern Integrated Islamic Schools (*Sekolah Islam Terpadu*), Christian schools, and national schools. These institutions strive to balance religious instruction with "secular" learning, yet operate under different governance structures and cultural contexts. Islamic schools aim not only for academic excellence but also for character and faith formation (Utari et al., 2025). However, their management and leadership models face unique challenges in aligning government regulations with Islamic values. For example, Indonesian Islamic schools exist under a "dichotomous control" by the Ministry of Religious

Affairs (MoRA) and the Ministry of Education and Culture (MoEC). Pesantren and madrasah generally fall under MoRA, while many Islamic schools (including SIT) are regulated by MoEC, leading to fragmented oversight (Hasanah, 2021; Yarrow et al., 2020).

Despite this split governance, every formal school must integrate the national curricula (Kurikulum 2013 (K-13) or Kurikulum Merdeka) and address modern issues such as digitalization and competition from other formal national schools. Prior studies highlight that management and leadership critically shape Islamic school quality, yet little comparative research exists across these three school models. This study aims to fill that gap by examining and contrasting leadership styles, governance structures, curriculum models, and strategic responses in pesantren, madrasah, and Islamic schools in Indonesia. Using a qualitative, historical, and institutional analysis approach, we analyze how faith and knowledge are governed in each setting, and how these institutions navigate contemporary challenges.

## 2. Literature Review and Theoretical Foundations

### Faith and Knowledge in Islamic Perspective

Islamic tradition fundamentally values *‘ilm* (knowledge) and links it inseparably with *īmān* (faith). The Qur’an and Hadith repeatedly emphasize the pursuit of knowledge, implying that spiritual and worldly understanding complement each other. The Qur’an and Prophetic teachings emphasize that education must cultivate both understanding and moral virtue. For example, the Qur’an states that the Prophet Muhammad was sent “to perfect noble character” (Qur’an 68:4), indicating that moral education is central to learning (Siregar et al., 2025).

Modern Islamic educators emphasize that religious education should not be isolated from general sciences, as both are necessary to produce intellectually capable and morally upright individuals (Amin, 2014; Utari et al., 2025). In contemporary Indonesia, this principle underlies efforts to integrate *tawhīdic* (monotheistic) paradigms into schooling. Historically, classical Islamic civilization exemplified this integration. Scholars like Al-Ghazali, Ibn Sina, and Ibn Khaldun taught religion alongside philosophy, medicine, and other sciences within one holistic curriculum. In other words, the Islamic worldview does not recognize a rigid dichotomy between faith-based knowledge and secular knowledge (Amin, 2014; Utari et al., 2025).

Islamic educators echo this holistic view. Siregar et al. (2025) observed that the goal of Islamic education is to develop balanced individuals whose cognitive, emotional, and spiritual faculties are in harmony, with morality as the guiding principle. In practice, pesantren, madrasah, and Islamic Schools in Indonesia draw on this tradition. Today, many Indonesian Islamic schools seek to revive this integration. The rise of Islamic Schools and Integrated Islamic Schools or *Sekolah Islam Terpadu* (SIT) responds to concerns that national and secular schools neglect spiritual values. SIT explicitly aims to harmonize general and religious curricula in a holistic system (Nurfaisal et al., 2024; Raafi, 2020; Utari et al., 2025). Madrasahs similarly responds to this concern by combining their religious curriculum from the MoRA with the national curriculum of the MoEC, while maintaining traditional values. Meanwhile, pesantren are slowly modernizing by following a double education system allowing their *santri* (students) to take formal education during the day and pesantren education during the night, but remain consistent in their traditional values.

At the same time, Islamic education system must adapt to contemporary realities. There is a broad consensus that education should not only be a process of transferring knowledge, but also shaping character and competencies for the 21st century (Utari et al., 2025). Indonesian

scholars argue that integrating STEM and technology in Islamic schooling, promoting critical thinking within an ethical framework, and fostering lifelong learning are essential strategies in staying relevant. In summary, the philosophical foundation of this study is that faith and knowledge are mutually reinforcing in Islam. Any leadership or governance model in *pesantren*, *madrasah*, Islamic schools or SIT will thus be judged by how well it promotes both religious values and high-quality modern education, reflecting Islam's holistic educational vision (Hasanah, 2021; Nurfaizal et al., 2024; Utari et al., 2025).

### Islamic Education Landscape

Islamic education in Indonesia has deep roots dating back several centuries. After Islam arrived in the archipelago around the 13th-15th centuries, early instruction took place informally in mosques and teacher-student study circles. The *pesantren* (Islamic boarding school) emerged as the oldest formal institution, becoming the cornerstone of Islamic learning by the 15th century. Traditional *pesantren* curricula focused on the *Qur'an*, *Hadith* (Prophetic traditions), Islamic jurisprudence (*fiqh*), theology (*aqidah*), and Sufism (*tasawwuf*). Instruction was often by rote memorization in Arabic and guided by a *kyai* (scholar-leader), whose spiritual authority shaped the school community (Dhofier, 1999).

In the late 19th and early 20th centuries, *madrasahs* were introduced as part of a broader modernization movement. Influenced by reforms in the Ottoman Empire and South Asia, *madrasahs* added secular subjects (math, science, languages) to religious studies. Organizations like Muhammadiyah and Nahdlatul Ulama (NU) played pivotal roles: Muhammadiyah championed Western-style education alongside faith, while NU preserved traditional *pesantren* values within its *madrasahs*. After independence (post-1945), the Indonesian government integrated *madrasahs* into the national system. The Ministry of Religious Affairs (MoRA) standardized curricula to ensure parity with secular schools (Tayeb, 2018). Governments also urged *pesantren* to modernize by adding general subjects and teacher training, aiming to improve outcomes and employability.

More recently, private Islamic Schools or Integrated Islamic Schools (SIT) have proliferated as institutions under the Ministry of Education and Culture (MoEC) as parents seek institutions that have both academic rigor and religious character-building (Utari et al., 2025). Research consistently emphasizes that the quality of any school depends on its leadership, management, and institutional environment. In Islamic schools, this dual mandate (national and religious standards) makes leadership especially pivotal. Effective principals and *kyai* (*pesantren* leaders) guide policy decisions on curriculum integration, teacher training, and community engagement, and hence shape school outcomes (Alam, 2018).

### Quality Factors and Challenges

Recent literature highlights several challenges facing Islamic education in Indonesia (Antoni et al., 2025; Daulay & Pulungan, 2024). One is quality and competitiveness. There is a quality gap where Islamic institutions have grown in number but often lag in resources and outcomes. Cultural factors (resistance to change, emphasis on tradition) and institutional factors (underfunding, limited teacher quality, weak strategic planning) contribute to Islamic schools' struggles in the competitive education marketplace. Yet empirical studies offer a complex picture: for example, *Madrasah* students in some regions outperform secular school peers in English literacy tests, suggesting that with effective leadership and pedagogy, Islamic schools can excel academically (Nawas, 2023).

Another challenge is modernization. Globalization, technology, and new pedagogies pressure Islamic schools to update teaching methods and curricula. Policy and studies note a push to integrate digital literacy, critical thinking, and vocational skills in pesantrens and madrasahs. However, traditional institutions worry about preserving core values amid change. Survey data from madrasah leaders show efforts to incorporate technology in classrooms, as one principal successfully secured laptops and internet access to improve learning, indicating a shift toward 21st-century education (Kultsum, 2020).

Finally, organizational management is a cross-cutting challenge. The literature emphasizes the need for stronger school-based management and strategic planning in Islamic schools. Issues such as unclear roles, poor communication, and inadequate use of data are cited as obstacles (Supriadi et al., 2025). Addressing these will require capacity building such as targeted leadership development, enhanced accountability systems, and institutional learning (cross-sector forums or accreditation) to raise quality while respecting Islamic ethos.

These issues illustrate the tensions leaders face. For example, preserving strong moral character while introducing digital tools, or enforcing standardized curricula while respecting religious traditions. Addressing such challenges requires adaptive management. Strategies like STEM education, technology integration, entrepreneurship promotion, ethical leadership training, and school-industry partnerships have been proposed to keep Islamic education relevant and competitive.

### **Duality of Governance and Institutional Context**

The institutional framework of Indonesian Islamic schools is marked by a division of branches between MoRA and MoEC. Historically, MoRA has overseen madrasah (and religious instruction in public schools), whereas MoEC governs national secular public and private schools. Research shows that this split has led to a “dichotomous control” of Islamic education. On one side, traditional pesantren often remain outside government structures entirely, relying on community support and *waqf*. On the other hand, modern madrasahs are formally part of the national system but subject to MoRA regulations (Tayeb, 2018). For instance, madrasahs use the national curriculum plus mandated Islamic subjects (about 30% of total content), and must implement Madrasah-Based Management (MBM) as required by MoEC (Hasanah, 2021).

This arrangement places formal Islamic schools under considerable structural constraints. As a result, studies note that Indonesian Islamic schools have become “much more autonomous” than before, yet still “have lower recognition by the state and society” than their Malaysian counterparts (Tayeb, 2018). In practice, madrasahs and pesantren are largely self-regulating in daily affairs, but struggle with irregular funding and accreditation. Integrated Islamic Schools (SIT), which often register as private schools under MoEC, enjoy greater curricular autonomy but also bear full responsibility for aligning with national standards.

### **Leadership Models in Islamic Schools**

Leadership in these institutions takes diverse forms. In pesantren, the *kyai* typically serves as the founder, spiritual guide, and chief administrator (Alam, 2018). The *kyai*'s authority derives from scholarship and community reverence, making the leadership inherently charismatic and traditional. Research describes *kyai* leadership as a blend of rational and traditional styles, which is pragmatic in school management but rooted in personal charisma and lineage. A *kyai*

performs multiple roles (such as an educator, caregiver, community leader, and manager) requiring adaptability to social changes without compromising religious values (Alam, 2018; Dhofier, 1999).

By contrast, madrasah heads (principals) are professional educators, often government-appointed or certified. Their leadership style can vary widely. Holili et al., (2024) found that even within two adjacent schools, one principal employed a democratic, bottom-up approach, while the other was authoritarian and paternalistic. In general, madrasah leaders must balance bureaucratic duties (compliance with MoRA/MoEC policies) with community expectations. Madrasah leadership theories often draw on transformational or servant leadership paradigms to emphasize moral exemplarity and community engagement.

Integrated Islamic Schools tend to be privately run by foundations or philanthropic organizations. Leadership here often focuses on innovation and competitive standards while maintaining an Islamic ethos. For example, in the prestigious Pondok Modern Darussalam Gontor (PMDG), school leaders describe their model as combining Islamic and modern education to produce open-minded leaders for both religious and worldly success (Fajri & Faizuddin, 2022). Within a *tawhīdic* framework, leaders proactively build capacity through innovative strategies, from implementing blended learning to launching entrepreneurship programs (Fajri & Faizuddin, 2022; Utari et al., 2025).

### **Curriculum Models (K-13 Implementation)**

Indonesia's 2013 Curriculum or *Kurikulum 2013* (K-13) is the latest most adopted curriculum. It represents Indonesia's competency-based national curriculum that emphasizes critical thinking and character. Its rollout affected all school types. In madrasahs and SIT, K-13 is officially used, sometimes supplemented by independent or institution-specific curriculum. However, A case study in Aceh's Madrasah Aliyah found K-13 to be "not effective" due to insufficient instructional time and heavy administrative workload for teachers (Erizar et al., 2021; Thusrina & Rusdi, 2024). Excessive documentation was cited as the biggest problem. This suggests that even secular reforms can strain religious schools, which often have larger class sizes or less teacher training. Many pesantren, meanwhile, adopt K-13 selectively or focus on competency principles while maintaining religious routines. Some "modern pesantren" align with K-13 in their formal school sections, but also run parallel Islamic classes (the *Mu'allimin* system) (Mujib et al., 2021).

### **Theoretical Foundations**

Theoretically, this study draws on organizational and educational leadership theories as they intersect with religious schooling. Weberian analysis of authority helps explain how kyai charisma contrasts with the bureaucratic rationality of public school principals (Alam, 2018). Constructivist educational theory underpins integrated curriculum models, where knowledge integration fosters learners' holistic development (Utari et al., 2025). Institutional theory highlights how Indonesian Islamic schools navigate dual oversight and policy environments, and how sectoral differences (religious vs. national education bureaucracy) shape practice. Hence, successful leaders in Islamic schools are those who can skillfully adapt their school's vision to accommodate both its faith-based values and the demands of the national curriculum (Fajri & Faizuddin, 2022).

## **3. Methodology**

This study uses a qualitative, comparative case study approach, combining historical and institutional analysis. Our research is based on a thorough review of scholarly articles, official government publications, and real-world case studies of exemplar institutions. The analysis focuses on differences and commonalities in leadership and governance across three categories: (1) Pesantren (traditional Islamic boarding schools), (2) Madrasah (formal schools under MoRA), and (3) Integrated Islamic Schools (SIT) typically under MoEC. Our historical analysis tracks changes in Indonesian education since independence in 1945, including key events like the centralization of madrasah under MoRA and the nationwide rollout of the K-13 curriculum. The institutional analysis examines policies (e.g. national curriculum law, MoRA decrees) and organizational structures. We also incorporate thematic analysis of interview data and field reports from prior studies, identifying recurring issues (e.g. leadership styles, curriculum integration, stakeholder relations). By cross-examining these data, we construct a comparative framework (see Table 1) that maps key features for each school type.

#### 4. Result and Integration of Findings

The study identified distinct leadership and governance profiles in the three school types, as summarized in the Table 1 below:

**Comparative Table 1: Institutional Features of Pesantren, Madrasah, and Integrated Islamic Schools in Indonesia**

Feature	Pesantren	Madrasah	SIT
<b>Governance/ Affiliation</b>	Primarily independent; regulated informally by MoRA; minimal MoEC oversight. Often self-financed by waqf, donations, <i>santri</i> fees.	Jurisdiction of Ministry of Religious Affairs (MoRA). Government-subsidized (state madrasah) or private (but still accredited by MoRA/MoEC). Part of the national system.	Registered as private schools under MoEC; benefit from national curriculum autonomy. Often supported by Islamic foundations (e.g. Muhammadiyah, NU, or independent).
<b>Leadership</b>	Led by Kyai (charismatic religious leader). Leadership is tradition-based and community-oriented. Decisions often influenced by religious values; succession can be familial. Modern pesantren sometimes appoint principals for non-religious management tasks.	Led by formal principals (often with education credentials). Leadership style varies: some democratic/transformational, others authoritarian /paternalistic. Must navigate bureaucratic reporting lines (MoRA, district education offices).	Led by principals or headmasters (often with vision for Islamic education innovation). Leadership tends to emphasize institutional growth, community engagement, and pedagogical creativity. Boards of trustees may set long-term strategy.
<b>Curriculum &amp; Pedagogy</b>	Primarily classical Islamic curriculum (Kitab Kuning, Quran memorization). Many (especially “modern” pesantren) integrate general subjects; some adopt K-13 or specialized curriculum alongside religious program. Highly immersive, often after-hours religious	Follows national curriculum plus 30% Islamic subjects (Quran, Fiqh, etc.). Implemented via Madrasah-Based Management (MBM) policies. Teachers are trained for both secular and religious instruction. K-13 introduced blended, competency-based methods, but faced challenges	Combines National Curriculum (K-13/independent) with enriched Islamic curriculum (e.g. Tahfiz, Arabic, character education). Emphasizes integration of knowledge and faith: cognitive subjects taught through

	mentoring.	(e.g. time constraints, administrative load).	Islamic values. Often use advanced pedagogies (STEM, digital tools) to appeal to modern parents.
<b>Technology &amp; Innovation</b>	Gradually embracing digital tools (e.g. e-learning for Quran, online broadcasting) but varies widely. Top pesantren establish IT labs and entrepreneurship units; many still struggle with limited infrastructure.	Growing use of ICT: some madrasahs implement blended learning (Google Classroom, LMS, Kahoot), especially in urban areas. Government programs push digital literacy, but rural madrasahs may lag behind. Leadership training now includes tech adoption.	Often the most technologically advanced among Islamic schools. SIT invest in e-learning platforms and STEM labs to stay competitive. Many have computer classes and incorporate coding, robotics alongside religious activities. Leadership promotes digital literacy aligned with Islamic ethos.
<b>Educational Competitiveness</b>	Pesantren reputation depends on both spiritual output and academic accreditation. Leading pesantren (e.g. Gontor) compete academically (sending graduates to top universities), while others focus on vocational skills. Competitive advantage: strong moral networking, alumni support. Challenges: aligning with national exam standards can be uneven.	Madrasah are increasingly pressure-tested by PISA scores. Government has elite “Madrasah Aliyah Insan Cendekia” as benchmarks. Many madrasah attempt to raise competitiveness by improving English/math instruction and forging sister-school programs. However, resource gaps can hinder equal performance.	SIT often market themselves on dual excellence (high test scores + strong religious upbringing). They attract middle-class parents dissatisfied with secular schools. Data show SIT graduates participate more in community service and maintain religious practice at higher rates than peers. They continuously innovate curricula (e.g. <i>Kurikulum Merdeka</i> , global collaborations) to stay attractive.
<b>Community &amp; Social Role</b>	Deeply embedded in local communities. Pesantren often provide social services (orphan care, counseling) and act as cultural centers. Leadership involves mediating local conflicts and networking through kinship ties.	Madrasah serve both religious and national education roles. They often partner with local mosques and parents’ associations. Graduates typically enter civil service or continue to pesantren. Madrasah leaders may have less social authority than kyai, but they hold respectable community status.	SIT engage parents and alumni through board governance. They often draw students from wide geographic areas. Community relations involve fundraising and charity work, but less so kinship. Many SIT collaborate with international Islamic organizations for student exchange and curriculum enrichment.

Analyzing the comparative table above underscores that institutional affiliation and curricular model shape leadership and governance. For example, pesantren’s autonomy allows flexible curricula (though some now adopt national standards), whereas madrasahs must conform to

MBM policies and K-13 mandates (Erizar et al., 2021; Hasanah, 2021). Integrated schools, leveraging autonomy policies (e.g. *Kurikulum Merdeka*), design hybrid curricula of national and Islamic elements (Utari et al., 2025). As a result, leaders adapt their style to their environment. In a pesantren, a kyai can define educational goals purely through a spiritual lens. A madrasah principal, however, must also work within the framework of state reforms. For SIT leaders, the challenge is to merge entrepreneurial energy with their core religious mission.

Our analysis reveals distinct models of leadership in each setting (Table 1). Pesantren leadership is centered on the kyai. The kyai, often the founder or inheritor of the boarding school, wields charismatic authority grounded in scholarship and lineage (Alam, 2018). Decision-making is largely autocratic or paternalistic, though many *kyai* also consult family councils or *pengasuh* (senior teachers). This *kyai*-centric model ensures strong spiritual guidance but may limit administrative innovation. In recent decades, so-called modern pesantren have started to adopt formal management methods. For example, mid-sized schools now hire dedicated administrative staff, such as principals and vice-principals. They also follow organized daily schedules. These changes exist alongside their traditional, around-the-clock religious instruction. (Mujib et al., 2021). Nevertheless, even modern pesantren tend to emphasize traditional values and personal mentorship by the kyai, a blend of rational and traditional leadership (Alam, 2018).

Madrasah (Islamic schools under MoRA) employ a more conventional school leadership structure. Principals and vice-principals are usually civil servants with formal education degrees. Leadership styles differ from school to school. For example, principals in more progressive madrasahs often use a democratic approach, empowering their teachers to innovate through a bottom-up management style (Holili et al., 2024). In others, especially in remote or resource-constrained areas, principals exercise a more authoritarian, top-down style. All madrasah leaders must implement MBM under national regulations (Hasanah, 2021). They report to local MoRA offices and often coordinate with school committees and parent organizations. In practice, madrasah leaders balance compliance with MoRA standards (for religious subjects) and MoEC standards (for academic subjects), which can complicate decision-making (Hasanah, 2021).

Integrated Islamic Schools (SIT) typically operate as private institutions, so their leaders have greater autonomy. Many are founded by educational foundations or modern pesantren networks (e.g. Gontor), and are led by visionary principals or trustees. These leaders often prioritize innovation. They adopt new teaching methods like blended learning and STEAM education, build partnerships, and actively market their schools to attract high-performing students (Fajri & Faizuddin, 2022; Utari et al., 2025). Nevertheless, they maintain Islamic ethos through daily prayers, moral instruction, and Quranic memorization. Leaders within this model see faith and knowledge as complementary and equally vital, thus the term “integrated (*terpadu*)”. This is clear at Gontor, where the explicit mission is to produce “well-balanced human beings” who are both practically skilled and spiritually grounded (Fajri & Faizuddin, 2022; Utari et al., 2025). To meet both national and religious goals, SIT schools employ a semi-formal approach. They use the national K-13 curriculum as their foundation for accreditation but build upon it with essential Islamic curricula like Akhlak and Tahfiz (Utari et al., 2025). Many SITs enroll their graduates in national examinations alongside the national schools with secular education. Overall, SIT leadership combines entrepreneurial management with religious vision, reflecting a “combined pedagogy” approach (Fajri & Faizuddin, 2022).



Across all types, leaders are grappling with modern challenges. Pesantren emphasize internal strengths (community support, spiritual formation) but struggle with limited funding and teacher capacity. Madrasah leaders invest in teacher training and seek formal certifications to boost quality. Islamic school leaders focus on competitive features (exam results, technology) but must manage the dichotomy between Pancasila-state values and Islamic ethos. In each context, we observed that successful leaders blend respect for tradition with openness to reform.

## 5. Discussion

The comparative findings reveal both convergence and divergence in how faith and knowledge are governed. All three types uphold Islamic identity as a core mission, yet they operationalize it differently. Pesantren excel in instilling deep religious understanding and strong communal ties, owing to the kyai's personal mentorship. Their leadership culture, steeped in tradition, can foster resilience against ideological drift (Alam, 2018). However, this model may struggle with scaling modern pedagogies or meeting national academic standards uniformly. In contrast, madrasah are more integrated into the state system, which provides resources and recognition but also imposes bureaucratic constraints (Erizar et al., 2021; Hasanah, 2021). School leaders must balance the demands of various stakeholders, including ministry officials, religious councils, and parents. This often slows down decision-making, as seen when the bureaucratic demands of the K-13 curriculum created extra strain for teachers (Erizar et al., 2021; Thusrina & Rusdi, 2024). On the other hand, madrasahs benefit from government programs (such as special budgeting and principal training) aimed at improving Islamic schooling, which some SITs do not receive.

Integrated Islamic Schools (SIT) offers a third alternative. They operate independently of government bureaucracy. This freedom allows their entrepreneurial leaders to adapt curricula and facilities quickly in response to market demands. The rapid growth of SIT (from around 50 schools in 2003 to over 2,000 by 2023) shows strong parental demand for education that promises both world-class academics and sound morals. SIT leaders emphasize innovative educational models (blended learning, competency-based skills) within a tawhīdic framework (Fajri & Faizuddin, 2022; Utari et al., 2025). This gives SIT a competitive edge, but also poses sustainability challenges (maintaining quality across many new schools, ensuring equitable access).

Across the board, the central theme is integration. Effective leaders are those who can successfully bridge the divides between faith and science, tradition and modernity, and institutional autonomy with government regulation. The Indonesian context (Pancasila state and a diverse society) further demands religious moderation values alongside Islamic teachings. Our study shows that the most successful schools are those that consciously blend these elements. A prime example is the modern pesantren, which has moved away from the old dichotomy between religious and secular knowledge, weaving them together into a holistic education (Mujib et al., 2021). Madrasah curricula incorporate character education to unify faith with civic virtues. SIT frameworks are explicitly built on the premise that reason and revelation are complementary sources of knowledge (Utari et al., 2025).

The strategies to address emerging challenges also differ by institution. To foster digitalization, pesantren may form partnerships with tech companies or universities (as some already do to digitize Qur'anic education), while madrasah rely on government ICT programs. SIT, driven by tuition revenue, invest proactively in e-learning infrastructure. Regarding competitiveness,

SIT aggressively market academic achievements (often highlighting higher rates of religious activity and moral behavior), madrasahs leverage scholarship and exam programs (e.g. national awards), and pesantren promote alumni success (many kyai emphasize sending students to top Islamic universities or various jobs and government positions to broaden outreach).

Our findings align with existing theories on leadership in diverse schools. Different governing bodies, like MoRA, MoEC, or private foundations, shape how schools are run. This matches what institutional theory predicts. For example, pesantren often use informal leadership, while madrasah tend toward formal bureaucracy. Research also shows that charismatic leaders, like those in pesantren, can inspire strong community loyalty. However, this approach can sometimes become too rigid. On the other hand, madrasahs rely on structured systems that help standardize education. But these systems may not provide the same spiritual inspiration. SIT seems to blend both styles. Their leaders have the vision of a traditional kyai but also use modern professional management methods. This creates a balanced and effective form of leadership.

We find that no single model is the best. Instead, each one handles the relationship between faith and knowledge in its own valuable way. This diversity actually strengthens the entire Indonesian Islamic education system. The key takeaway for policymakers is to encourage these different schools to learn from each other. For instance, government training for madrasah principals could include lessons on character education from pesantren. In return, pesantren could use the madrasah's standardized tests to help measure their academic quality. Finally, creating partnerships for shared teacher training or extracurricular programs would allow each model to benefit from the others' strengths.

## 6. Conclusion and Recommendations

This study has provided a detailed comparison of leadership, management, and institutional dynamics across Indonesia's pesantren, madrasah, and Integrated Islamic Schools. Our findings indicate that governance structures (whether under MoRA, MoEC, or autonomous stakeholders) play a major role in shaping each institution's policies and resource allocation. Leadership styles also vary considerably. Pesantren often rely on a charismatic, *kyai*-centered model. Madrasah principals tend to use a blend of democratic and authoritarian approaches. In contrast, SIT schools typically employ innovative and mission-driven leadership. Curriculum implementation differs as well. Pesantren integrates classical Kitab studies with certain elements of the national K-13 curriculum. Madrasah formally adopts the K-13 curriculum along with 30% religious subjects (Hasanah, 2021), though a study notes ongoing challenges in practice (Erizar et al., 2021). SIT schools, benefiting from greater autonomy, flexibly combine national and Islamic curricula to align with their educational goals (Utari et al., 2025).

From the above findings, there are several recommendations for policymakers, institutional leaders, and researchers to strengthen Islamic education in Indonesia. Firstly, policymakers must recognize the distinct traditions of schools and religious schools while encouraging them to learn from one another. For policymakers, this involves harmonizing the different standards set by the MoRA and the MoEC. This would help reduce confusion. Increased funding is also needed to improve the quality of madrasahs and pesantrens. Creating forums for these different sectors to share effective practices would be beneficial. Legislators could create incentives for religious schools to adopt nationally certified curricula. They could also encourage conventional schools to offer more robust Islamic instruction.

Secondly, at the school level, leaders should pursue professional development that combines leadership training with religious ethics. For instance, leaders of *pesantrens* would benefit from learning modern management and data use. Madrasah and Islamic school principals should continue to build strong partnerships with their communities. Establishing networks for school leaders to coach one another could also support shared learning.

Thirdly, teacher training programs must also adapt. They should provide courses on designing dual curricula, using Islamic teaching methods to build modern skills, and managing school organizations based on research. Ultimately, researchers could help design training programs that could equip teachers with deep subject knowledge and effective techniques for moral education. This dual preparation is the key to unifying faith and knowledge in the classroom.

In conclusion, managing the relationship between faith and knowledge in Indonesia's Islamic schools is complex. Our research highlights the importance of adaptable leadership and policies that encourage cooperation. Policymakers should acknowledge how these different types of schools complement one another. They can do this by supporting shared frameworks, such as joint accreditation standards and collaborative teacher training. Educators, in turn, should keep developing teaching methods that blend Islamic tradition with the skills needed for contemporary life. By learning from the strengths of each model, such as the moral leadership of the *pesantren*, the structured administration of the madrasah, and the creativity of the SIT system, Indonesian Islamic education can achieve its dual goal. This goal, deeply rooted in faith, is to cultivate knowledgeable and ethical individuals who are prepared to contribute meaningfully to both their religious community and their nation (Fajri & Faizuddin, 2022; Utari et al., 2025).

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# INSIGHTS ON INCLUSIVE EDUCATION IN BILINGUAL CLASSROOMS: SECONDARY EVIDENCE FROM AN ISLAND NATION

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**Abstract:** *The Republic of Maldives has strengthened its policy commitment to inclusive education through the Education Act 24/2020, the Inclusive Education Policy 2021, the Education Sector Plan 2019–2023, and the Global Partnership for Education (GPE) Partnership Compact, which prioritises equity and inclusion, addresses learning gaps between Malé and the atolls, and emphasises teacher training, curriculum enhancement, and resource provision in remote areas. However, geographic dispersion, bilingual classrooms, and limited resources continue to challenge equitable participation of students with disabilities. This study aims at identifying and gathering scalable, low-cost strategies stipulated in contextual literature to address the identified barriers. The analysis synthesizes secondary evidence from national policy documents, UNICEF’s mapping of disability-inclusive practices, programme reports from local NGOs, and peer-reviewed research on medium-of-instruction and teacher experiences in Maldivian schools. A qualitative review was undertaken to extract context-relevant approaches that can be feasibly implemented across atolls. The review highlights four promising strategies: (1) mother-tongue scaffolding and bilingual glossaries to strengthen comprehension; (2) UDL-informed lesson planning to support diverse learning needs; (3) peer-supported learning communities and community-based resource sharing to extend support in resource-limited settings; and (4) modular teacher coaching focused on whole-class inclusive practices. Sustainable inclusive practices in Maldivian schools require aligning teacher education, curriculum materials, and atoll-level resource allocation with inclusive, bilingual pedagogy. Evidence shows that these approaches improve participation, comprehension, and learning outcomes in bilingual classrooms with minimal cost. Adopting these strategies at scale can enhance equity, strengthen teacher capacity, and promote participation of learners with diverse needs.*

*Keywords: Bilingual Education, Disabilities, Diversity, Inclusive Education, Maldives*

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## 1. Introduction

Inclusive education has become a central priority in global education reform, anchored in the recognition of education as a human right and a driver of social and economic development. International frameworks such as the Salamanca Statement, the Convention on the Rights of Persons with Disabilities, and Sustainable Development Goal 4 emphasise equitable access to quality education for all children, regardless of disability, language, or socioeconomic status. UNESCO’s Global Education Monitoring Report further urges governments to adopt systemic approaches that guarantee inclusion and equity. Globally, inclusive education is viewed not only as a moral imperative but also as an effective strategy to reduce inequalities, strengthen social cohesion, and improve learning outcomes.

The Maldives has demonstrated strong alignment with these global commitments. The Constitution and Education Act (Law No. 24/2020) enshrine the right to non-discriminatory

education, while the Inclusive Education Policy outlines implementation strategies. The Education Sector Plan 2019–2023 identifies teacher training, curriculum reform, and resource provision as key pillars for advancing equity. More recently, the Global Partnership for Education (2023) reinforced inclusion as a government priority, targeting disparities in access, learning outcomes, and teacher capacity. Collectively, these frameworks have established a solid foundation for inclusive practices in the Maldivian education system.

Implementation of inclusive education in the Maldives is uneven due to geographic dispersion, limited access to trained teachers, assistive technologies, and support services in remote atolls. The bilingual structure with Dhivehi as mother tongue and English as instruction medium can hinder comprehension, especially for students with additional learning needs. Shortages of specialised staff, concentrated in Malé, further challenge teachers in remote schools.

This study reviews policy documents, programme reports, and peer-reviewed literature to identify low-cost, scalable strategies suited to bilingual, resource-constrained classrooms. Findings aim to guide policymakers and practitioners, translating policy commitments into equitable, practical classroom practices.

## 2. Literature Review

Over the past three decades, inclusive education has emerged as a major subject in educational research and policy around the globe. The idea is supported by the understanding that education is a basic human right and that schools should not exclude people who do not conform to social norms but rather should change to accommodate variety. Education has undergone a paradigm shift from one of integration, where students with special needs or disabilities were expected to adjust to mainstream classrooms, to one of inclusion, where schools must reorganize their procedures, curricula, and policies to guarantee that all students have an equal chance to succeed.

**2.1 Global frameworks shaping inclusion:** The global development of inclusive education has been shaped by key international agreements and declarations. The Salamanca Statement (UNESCO, 1994) marked a milestone by emphasising that inclusive education requires schools to adapt to the needs of all learners, not merely integrate students with disabilities. It framed inclusion as a necessity tied to equality, democracy, and social justice. The Convention on the Rights of Persons with Disabilities (CRPD; United Nations, 2006) advanced this further by establishing inclusion as a legal right. Article 24 mandates reasonable adjustments and prohibits exclusion from mainstream education, creating a binding framework that holds governments accountable for progress.

Commitments were reinforced through the Sustainable Development Goals, particularly SDG4, and the Incheon Declaration (UNESCO, 2015), which pledged to ensure inclusive, equitable, and quality education for all. UNESCO's Global Education Monitoring Report (2020) stressed that exclusion, whether due to disability, gender, poverty, or language, undermines educational quality and equity, positioning inclusion as the norm. Research further demonstrates that inclusive education benefits all learners by improving teaching quality, fostering empathy, and preparing students for diverse societies (UNESCO, 2019). Thus, inclusive education is not only a moral imperative but also an evidence-based strategy for strengthening educational systems worldwide.

**2.2 National frameworks in the Maldives:** Key legislative and policy frameworks in the Maldives incorporate inclusive education. The legal basis is provided by the Education Act

24/2020, which requires all children, irrespective of socioeconomic background, language, or handicap, to have fair access to high-quality education (Maldives, 2020). The Maldives' international commitments under the CRPD and SDG4 are strengthened by the Act, which acknowledges inclusiveness as a guiding principle.

Building on this, the Maldives Inclusive Education Policy (Ministry of Education, 2021) presents a thorough plan for inclusive education. The strategy places a strong emphasis on the use of differentiated instruction, Universal Design for Learning (UDL), and, when required, customised educational programmes. It also promotes collaboration among teachers, parents, and communities as a key ingredient in building inclusive environments. Crucially, the policy recognises the particular difficulties in providing inclusive education in an island nation with a dispersed population.

By emphasising teacher preparation, curriculum adaptation, and fair resource distribution, the Education Sector Plan 2019–2023 (Ministry of Education, 2019) further operationalises inclusion. It draws attention to the differences between Malé's schools and those in isolated atolls, recognising inclusion as a matter of both equity and excellence. With inclusion as a key tenet, the Global Partnership for Education (GPE) Compact (GPE, 2023) strengthened these aims by coordinating national activities and donor money to eliminate learning gaps.

Evidence points to inconsistent implementation even with these robust frameworks. While Malé schools might have access to teacher development programmes, resource centres, and qualified specialists, many atoll schools do not, which results in disparities in the way inclusion is implemented (UNICEF, 2021b; UIS 2018).

**2.3 Medium-of-instruction challenges:** One of the most hotly contested topics in Maldivian education is language policy, which directly affects inclusivity. Although all islands speak Dhivehi, the native language, English is used as the primary language of instruction. The goal of this change was to increase global competitiveness and economic integration. However, studies show that the policy puts kids at serious disadvantage, especially those who have special learning requirements.

Mohamed (2020) discovered that when instruction is given solely in English, students frequently find it difficult to interact with the material, leading to superficial learning and poorer performance. Although bilingualism offers advantages, Mohamed (2016) and Mohamed (2019) note that Dhivehi's lack of systematic scaffolding compromises student comprehension. Although it is neither standardised nor supported by curriculum materials, many teachers really use informal code-switching between Dhivehi and English to facilitate understanding.

Students with impairments, who may already struggle to process information, are further affected by the language barrier (Naseer & Hameed, 2024). These students run the risk of becoming even more marginalised without mother tongue assistance. Unless properly scaffolded, English-medium policies penalise pupils from non-English speaking households, according to comparative research from other tiny island republics like Mauritius and Fiji (Macaro, 2018). According to these findings, multilingual strategies like creating Dhivehi-English lexicons, bilingual teaching resources, and organised scaffolding are essential for fostering inclusivity.

**2.4 Resource and teacher capacity constraints:** The lack of specialised resources and teacher competence for inclusive education is another ongoing issue in the Maldives. Specialised

services like educational psychologists, speech therapists, and special needs coordinators are mostly based in Malé, according to UNICEF's Disability-Inclusive Education Practices mapping (2021b). On the other hand, general instructors who might not have received training in inclusive pedagogy are frequently the only teachers employed by schools in isolated atolls.

Although inclusive education has become more and more integrated into Maldivian teacher education programmes, in-service training is still uneven. According to studies by Naseer & Hameed (2024) and Genovesi et al. (2024), many educators feel unprepared to modify their lessons for a diverse student body. Large class sizes, restricted access to instructional resources, and a lack of continuous professional development are among the difficulties they mention. Although most teachers have positive attitudes towards inclusion, their efforts will remain sporadic and unsustainable in the absence of sufficient capacity-building.

The discrepancy between policy promises and classroom reality emphasises how crucial it is to have scalable and realistic professional development frameworks in the Maldives. Pilot projects reported by UNICEF (2021a; 2021b) have demonstrated the potential of modular teacher coaching, which enables educators to get continuous support within their own schools.

**2.5 Role of NGOs and community-based initiatives:** In the Maldives, civil society groups such as Care Society have played a significant role in promoting inclusive education. Care Society was founded in 1998 and led the way in introducing disability services to island communities through community-based rehabilitation (CBR) programmes. Other such NGOs include Maldives Association of Persons with Disabilities (MAPD), and Autism Association. Its efforts have centred on educating local volunteers to assist children with impairments, fostering relationships with schools, and empowering parents.

Another important partner has been UNICEF, which has supported teacher training and mapped out disability-inclusive practices. Its publications stress how crucial community involvement is to maintain inclusive practices, particularly in situations where specialised resources are limited. Learning outcomes in atoll schools have been demonstrated to be strengthened by parent involvement, peer tutoring, and community-based resource sharing (UNICEF, 2021a; TCI & MSHG, 2025).

**2.6 Regional and global comparisons:** Several small island developing nations (SIDS) share the same difficulties as the Maldives. In nations like the Seychelles, Mauritius, and Pacific Island states, geographic dispersion, reliance on English-medium instruction and resource constraints are typical. Low-cost approaches, like peer-supported learning networks, modular teacher training, and the use of local languages for scaffolding, are especially well-suited to these situations, according to UNESCO (2019). The Maldives can gain valuable ideas by studying these global examples. For example, systematic bilingual resources have been created in Mauritius to facilitate English and Creole language development (Bissoonauth-Bedford, 2019). Community-based teacher support initiatives in Fiji have been successful in filling up the gaps brought on by a shortage of specialists (Macaro, 2018). These experiences imply that comparable tactics can be modified in the Maldives to fit its unique linguistic and cultural setting.

**2.7 Synthesis:** The literature study outlines the Maldives' progress towards inclusive education, highlighting both its successes and its setbacks. The nation has, on the one hand, put in place robust legislative and policy structures that are consistent with its international obligations. However, especially in atoll schools, implementation is hampered by deficits in teacher capacity, resource scarcity, and language obstacles. However, there are also chances to close



gaps because of the proactive participation of NGOs and the possibility of community-based projects. The effectiveness of low-cost, context-sensitive methods is supported by comparative data from other SIDS. The literature emphasises the value of realistic and successful practical strategies that work in the Maldivian setting, such as modular teacher coaching, peer-supported learning, UDL-informed lesson preparation, and mother-tongue scaffolding.

In addition to providing the groundwork for the current investigation, this synthesis suggests scalable approaches that can improve inclusive education in classrooms with a variety of students, languages, and resources

### 3. Research Methodology

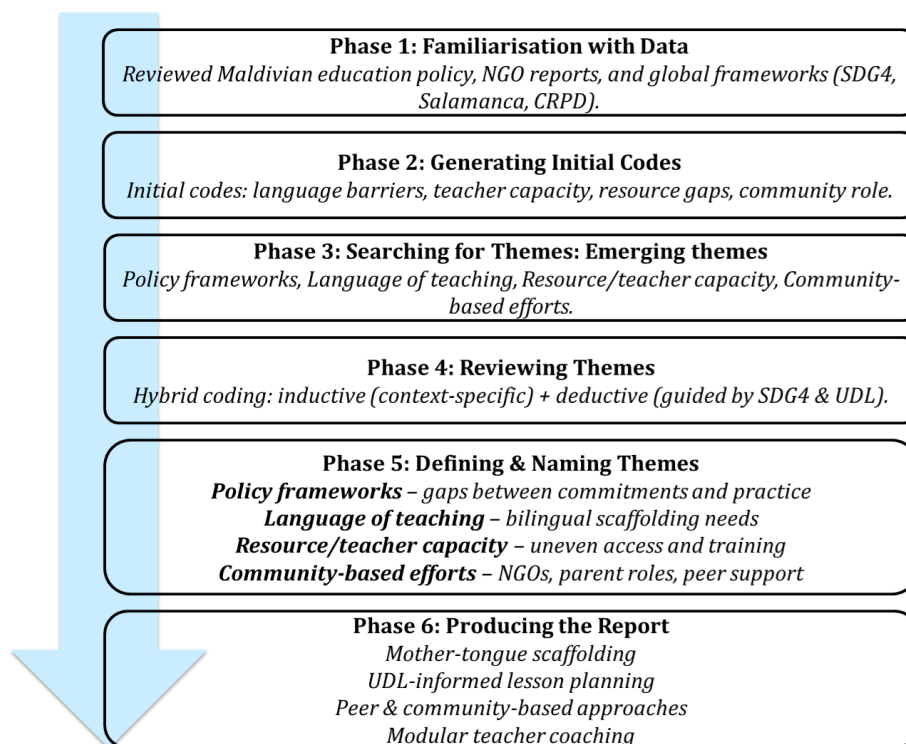
In order to synthesise a variety of sources, including policy papers, reports, and scholarly literature, this study uses a qualitative document analysis (QDA) paradigm (Bowen, 2009). Three primary factors led to the selection of QDA: it incorporates knowledge from national, institutional, community, and international levels; it tackles the logistical difficulties of conducting extensive fieldwork in the scattered atolls of the Maldives; and it makes use of the wealth of secondary data on inclusive education that is currently available, such as national frameworks and NGO reports. In contrast to meta-analysis, QDA concentrates on analysing the meaning, context, and presumptions in texts rather than requiring quantitative statistics. This makes it possible to spot reoccurring themes and useful trends, which help the study achieve its goal of developing affordable, contextually appropriate tactics to promote inclusive education.

**3.1 Data Sources:** The study's evidence base consists of four categories of secondary data, selected for their relevance, accessibility, and credibility. The national policy frameworks include Education Act 24/2020, Education Sector Plan (2019–2023) and Inclusive Education Policy (2021). International and national reports and data sets include UNICEF (2021) Disability-Inclusive Education Practices in the Maldives, UNESCO Global Education Monitoring (GEM) Reports (2019, 2020), UNESCO Institute for Statistics (UIS) datasets and Global Partnership for Education (2023) Compact. Peer reviewed academic studies include those of such nature published in international journals and databases, which align with the themes discussed in this article and referenced where relevant. Furthermore, the NGO programme documentations also include secondary evidence of such nature, published on public domains and referenced where relevant.

**3.2 Data Collection Procedure:** Using academic platforms (such as ResearchGate, Google Scholar), international agency databases (UNESCO, UNICEF, GPE), government portals and websites, and non-governmental organisation websites, data was gathered using a structured document analysis process. Only publicly available materials were included to guarantee dependability and ethical adherence. The selection criteria were publishing between 2005 and 2024, authorship by reputable organisations or peer-reviewed publications, and direct relevance to inclusive education in the Maldives or similar SIDS environments. Documents with opaque authorship or financing were not included. This method guaranteed a current and reliable corpus.

**3.3 Analytical Framework:** In order to collect and refine themes, the study used Braun and Clarke's (2006) six-phase thematic analysis, as illustrated in Figure 1.

**Figure 1.** Braun and Clarke's 6 phases of thematic analysis.

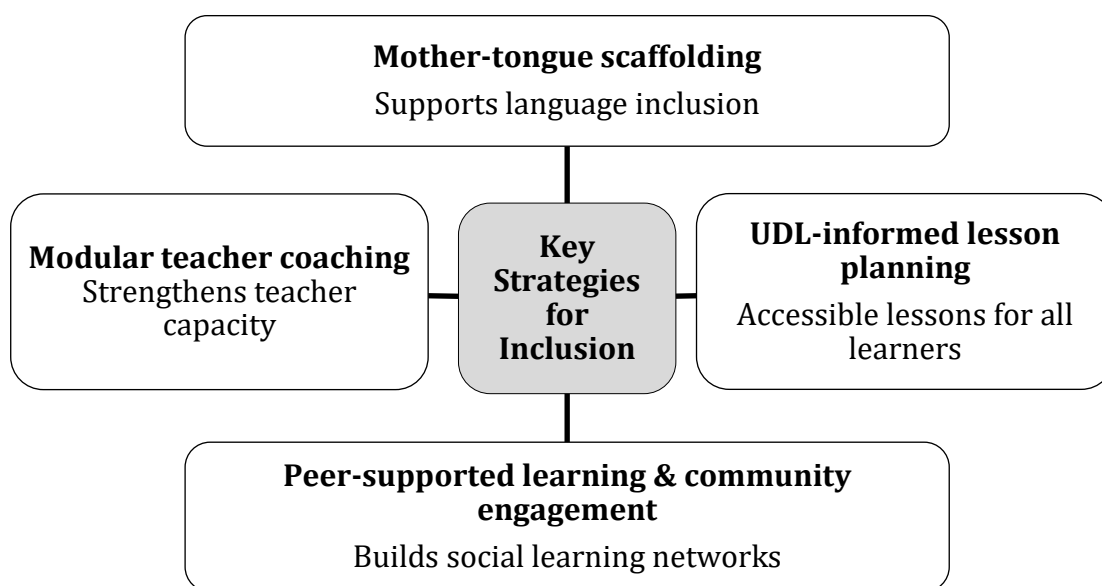


**3.5 Reliability and Validity:** To strengthen reliability, the study used triangulation across multiple data types such as legal frameworks, international reports, peer-reviewed studies, and NGO documents. This minimized the risk of bias from any single source. Validity was enhanced by cross-checking findings against multiple independent datasets. The study also addressed researcher bias by using explicit coding criteria and maintaining an audit trail of decisions. While the analysis is interpretive by nature, transparency in process enhances trustworthiness.

#### 4. Findings

The analysis of secondary evidence highlights four practical, low-cost, and contextually relevant strategies for strengthening inclusive education in the Maldives. These approaches; mother-tongue scaffolding, Universal Design for Learning (UDL)-informed lesson planning, peer- and community-based initiatives, and modular teacher coaching, are grounded in both global frameworks and Maldivian realities (see Figure 2). Together, they provide feasible pathways for resource-constrained, bilingual classrooms in atoll schools where teacher capacity and specialist support are limited.

Figure 2. Key strategies for inclusion.



**4.1 Mother-Tongue Scaffolding and Bilingual Glossaries:** Language of instruction remains a key barrier to inclusion in the Maldives. While English is the medium of instruction, Dhivehi is the language in which students are most confident. This gap disproportionately affects students with additional needs, who face difficulties comprehending subject matter in a second language. Research highlights that the challenge lies not in content complexity alone, but in the dual burden of learning subject knowledge and a new language simultaneously (Mohamed, 2020). Scaffolding strategies such as bilingual glossaries, dual-language instructions, strategic code-switching, and visual aids labelled in Dhivehi help bridge this divide. Evidence from other SIDS, such as Mauritius and Fiji, shows that systematic bilingual scaffolding improves both comprehension and long-term English acquisition (Genovesi et al., 2024; Macaro, 2018). Although standardized bilingual materials are limited and there is concern that Dhivehi use may reduce English exposure, evidence suggests that transitional bilingual approaches actually strengthen English learning by ensuring strong conceptual foundations in the first language (Mohamed & Nihaadh, 2023). Importantly, these strategies require minimal resources, making them accessible for atoll schools.

**4.2 Universal Design for Learning (UDL)-Informed Lesson Planning:** The second strategy is Universal Design for Learning (UDL), endorsed in the Maldives' Inclusive Education Policy (2021). UDL provides a framework for designing lessons that accommodate diverse learner needs from the outset. Its three core principles; multiple means of representation, engagement, and expression; enable teachers to anticipate and respond to classroom diversity. Evidence from Maldivian classrooms shows that teachers trained in UDL-based planning report greater participation from students with disabilities and higher engagement from all learners. Combining oral, visual, and text-based resources benefits students with sensory impairments, while providing alternatives to written assessments helps students with dyslexia is a good example of this (Naseer, 2012; Naseer & Hameed, 2024). UDL is scalable because it can begin with simple, low-cost adjustments, such as using visual organizers or offering assignment choices (McKenzie et al., 2021). The main challenge lies in shifting teachers' mind-sets from teaching to the "average" student toward designing for diversity. Sustained training and peer resource-sharing are critical for embedding this practice.

**4.3 Peer- and Community-Based Approaches:** The third strategy emphasises leveraging community resources to sustain inclusion. Peer tutoring, pairing students of different abilities, benefits both tutors, who gain reinforcement and empathy, and tutees, who receive personalized support. Parental involvement is equally important: programmes run by local NGOs demonstrate that when parents practice reading or reinforce concepts at home, students with disabilities make measurable progress. Community-based resource sharing, such as pooled libraries of assistive devices managed by councils or NGOs, helps address shortages in atoll schools (TCI & MHSB, 2025). Similar models from Pacific Island states show how local networks can effectively supplement centralised provision (Pacific Disability Forum, 2025). For the Maldives, where geographic isolation often limits access to specialised services, these community-centred approaches are both culturally appropriate and essential.

**4.4 Modular Teacher Coaching:** Traditional teacher training in the Maldives often relies on workshops in the capital city, which are costly and inaccessible for many atoll teachers. Modular coaching offers an alternative, providing short, repeatable sessions delivered in schools. Coaches model inclusive practices, observe teachers, and give feedback, enabling immediate application in classrooms. Global research shows that such embedded, ongoing professional development is far more effective than one-off training. Modular coaching is scalable as coaches can travel to clusters of schools and sustainable when local teacher leaders are trained to support peers. Although limited numbers of qualified coaches remain a challenge, pilot initiatives in Maldivian atolls have shown positive results, with teachers reporting greater confidence in inclusive teaching (Adam, et al., 2023).

## 5. Discussions, Implications and Conclusion

The foregoing findings reveal prevailing strategies in the Maldives with respect to inclusive education in a bilingual setting, providing a complementary framework: mother-tongue scaffolding, application of UDL, peer- and community-based approaches, and modular coaching. The findings demonstrate that inclusive education in the Maldives adopts strategies that are both pedagogically sound and contextually feasible. Limited availability of specialists, disparities between Malé and atoll schools and the dual-language environment of Dhivehi and English indicate that global inclusion models cannot be directly transplanted. Instead, strategies must show connections to global frameworks while at the same time, reflect the lived realities of Maldivian classrooms, teachers, and communities.

**5.1 Alignment with Global Frameworks:** Inclusive education in the Maldives aligns with international legal and normative commitments. The Convention on the Rights of Persons with Disabilities (CRPD, 2006) mandates that learners with disabilities are not excluded from mainstream education and are provided with reasonable accommodations. UDL-informed lesson planning operationalises this requirement (Naseer & Hameed, 2024), while mother-tongue scaffolding addresses language-related exclusion (Mohamed, 2019; Mohamed & Nihaadh, 2023). SDG4 emphasises equitable quality education and lifelong learning opportunities, highlighting that classroom barriers such as inaccessible curricula or rigid pedagogy often drive exclusion. Peer-supported learning and community engagement mitigate these barriers (TCI & MHSB, 2025), and modular coaching strengthens teacher capacity to implement inclusive practices (Adam, et al., 2023). UNESCO's Salamanca Statement (1994) and Incheon Declaration (2015) further underscore the moral and practical imperatives of inclusion, which Maldivian strategies embody by improving learning outcomes for all students.

**5.2 Addressing Contextual Realities:** The strategies discussed below directly respond to local challenges. Mother-tongue scaffolding addresses comprehension difficulties arising from

English-medium instruction, particularly for learners with additional needs, while UDL-informed lesson planning translates policy principles into practical classroom designs, reaching diverse learners without relying solely on individualized accommodations. Peer-supported learning and community engagement leverage local resources to compensate for limited access to specialists outside Malé. Modular teacher coaching delivers continuous, job-embedded professional development, overcoming logistical barriers posed by geographic dispersion. Together, these strategies tackle structural inequities in resource availability, teacher capacity, and linguistic accessibility.

**5.3 Implications to Educational Leadership:** School leaders are an integral component of inclusive education reform implementation. School leaders act as facilitators of cultural and pedagogical change, ensuring that inclusive practices move beyond policy rhetoric into daily classroom realities (Ministry of Education, 2021; Adam et al., 2023; UNESCO, 2020). Instructional leadership is particularly relevant, as leaders must guide teachers in adopting UDL-based lesson planning, embedding bilingual scaffolding, and fostering peer-learning networks (Mohamed & Nihaadh, 2023; Naseer & Hameed, 2024; McKenzie, Karisa, Kahonde, & Tesni, 2021).

While the strategies proposed above are pedagogical in nature, their adoption depends on the effectiveness of the leadership at both school and system levels (Adam et al., 2023; UNESCO, 2015). Principals and instructional leaders can facilitate inclusive practices by creating collaborative work cultures, allocating time and providing guidance for peer coaching, and ensuring access to resources and facilities.

Without deliberate leadership engagement, inclusive practices risk remaining in silos of isolated efforts rather than become embedded, sustainable change (UNESCO, 2020; TCI & MHSG, 2025). Hence, educational leadership bridges the gap between policy frameworks and classroom practice. By exercising instructional and transformational leadership, school leaders and policymakers can institutionalise inclusive approaches, ensuring that low-cost strategies translate into long-term equity and improved learning outcomes (Adam et al., 2023; Naseer & Hameed, 2024; UNESCO, 2015, 2020).

**5.4 Implications to Policy:** At the policy level, the Ministry of Education can strengthen inclusive education by integrating bilingual scaffolding into national curricula with standardized glossaries, embedding UDL principles into pre-service teacher training, institutionalizing modular coaching for regional school clusters, and formally recognising the contributions of NGOs and parent networks.

Policy makers must also focus on system-wide coordination. This includes allocating funding for community-based initiatives, aligning leadership trainings with equity and inclusion priorities, and embedding mother-tongue scaffolding and UDL in national curriculum guidelines, so that principals are equipped well to manage change and monitor implementation and progress (Ministry of Education, 2021; GPE, 2023; Mohamed & Nihaadh, 2023).

**5.5 Implications to Practice:** At the school level, recommended practices include using code-switching and bilingual visual aids in lessons, establishing peer tutoring systems, conducting parental workshops to extend learning support at home, and creating teacher learning circles for sharing UDL-based lesson designs. These actions ensure practical, contextually feasible strategies reach both classrooms and communities effectively.

**5.6 Implications to Other Contexts:** The Maldivian experience provides insights for other Small Island Developing States (SIDS) facing similar challenges. In Mauritius, bilingual education policies enhance accessibility for marginalized learners, while in Fiji; community-based teacher support addresses specialist shortages (Macaro, 2018; Bissoonauth-Bedford, 2019). By adapting such models, the Maldives demonstrates how small nations can implement low-cost, socially grounded solutions while contributing to global inclusion discourse.

**5.7 Conclusion:** Inclusive education in the Maldives is a policy priority and urgent need due to persistent inequities. This study identifies four low-cost strategies such as mother-tongue scaffolding, UDL-informed lesson planning, peer-supported learning, and modular teacher coaching to improve equity in bilingual, resource-limited classrooms. Scaling these requires sustained policy support, teacher capacity building, and community engagement. Strengthening monitoring, institutionalizing effective practices, and partnering with NGOs and local stakeholders are essential to ensure all children can access high-quality, inclusive education.

The current study provided a potentially scalable framework for promoting inclusive education in low-cost, bilingual contexts. Nevertheless, the study has its own limitations. It relies on secondary evidence, excluding lived classroom experiences; data availability is uneven, with strong coverage of policy but gaps elsewhere; and most studies emphasise Malé, limiting representation of remote atolls.

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# IMPLEMENTATION OF LEARNING MANAGEMENT AND TEACHER LEADERSHIP THROUGH THE BEYOND CENTERS AND CIRCLE TIME (BCCT) APPROACH FOR FINE MOTOR DEVELOPMENT IN EARLY CHILDHOOD (A CASE STUDY PLAYGROUP CHILDREN AGED 3-4 YEARS OLD OF R.A. RUMAH SEKOLAH HASIRAH)

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**Abstract:** *This study aims to analyze the implementation of learning management and teacher leadership through the application of the Beyond Centers and Circle Time (BCCT) approach in stimulating fine motor development in early childhood. The research was conducted at RA Rumah Sekolah Hasirah with children aged 3–4 years in the Playgroup class as the research subjects. Using a qualitative case study design, data were collected through observation, interviews, and documentation. The findings reveal that effective teacher leadership and well-structured learning management significantly support the optimization of fine motor sensory stimulation. The BCCT approach provides opportunities for children to engage in various play-based activities, such as pouring, threading, folding, and manipulating objects, which enhance fine motor coordination. Furthermore, the role of teachers as instructional leaders is essential in designing, directing, and evaluating the learning process to achieve developmental goals. This study concludes that the synergy between teacher leadership and learning management, integrated with the BCCT approach, is crucial in fostering fine motor skills among early childhood learners.*

**Keywords:** *Teacher Leadership, BCCT, Fine Motor Development*

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## Introduction

Education is a basic human need that contributes greatly to individual development and social progress. Globally, early childhood is recognised as a critical period or golden age in which children build the foundations for cognitive, emotional, social and motor development. Among these various domains, fine motor skills play a very important role because they not only prepare children for academic readiness, such as writing and drawing, but also support independence in daily activities, such as buttoning clothes, using cutlery, and manipulating small objects (Santrock, 2019). Therefore, early childhood education needs to implement strategies that are appropriate for the developmental stage in order to stimulate fine motor skills from an early age.

Effective learning management is key to achieving these developmental goals systematically. Teachers are expected to play a dual role, as facilitators and leaders who design, coordinate, and evaluate learning activities. Strong instructional leadership enables teachers to create a structured yet flexible learning environment, allowing children to actively participate in learning experiences that strengthen their fine motor skills (York-Barr & Duke, 2004; Harris & Jones, 2019). This emphasises the importance of integrating management practices and leadership qualities in creating meaningful early childhood learning.

One innovative approach that is widely applied in early childhood education is Beyond Centres and Circle Time (BCCT). BCCT emphasises structured play-based learning through various centres and circle activities, combining exploration, play, and scaffolding to create a child-

centred learning environment. This model provides rich opportunities for children to develop fine motor skills through hands-on activities, such as manipulating tools, building objects, and engaging in art activities (Dau, 2021; Andriyati, 2023). Various empirical studies show the effectiveness of BCCT in fostering creativity, independence, and multiple intelligences (Soleha & Anjani, 2022; Erlianasyah, 2024).

However, research specifically examining the combined role of learning management and teacher leadership in the implementation of BCCT to support the development of fine motor skills in children aged 3–4 years is still limited. Most previous studies have focused on older preschool age groups, leaving a gap in understanding of how BCCT can be optimised for younger children, when fine motor skills are still in the early stages of development. To address this gap, this study aims to explore how learning management and teacher leadership strategies interact in the implementation of BCCT to improve the development of fine motor skills in children aged 3–4 years.

## **Literature Review**

In early childhood education, learning management is very important because it determines the path, strategy, and success of stimulating child development. Children's social, emotional, and character development are also taken into account in good learning management.

The Experiential Learning Management Model (ELMM), which is based on constructivism and social-cognitive theory, was introduced by Astrachon, Srikao, and Jantharajit (2025). According to this model, direct experience is the basis of the learning process, where children gain understanding through interaction with their environment. This method is in line with the principles of early childhood education, which emphasise learning through play and exploration.

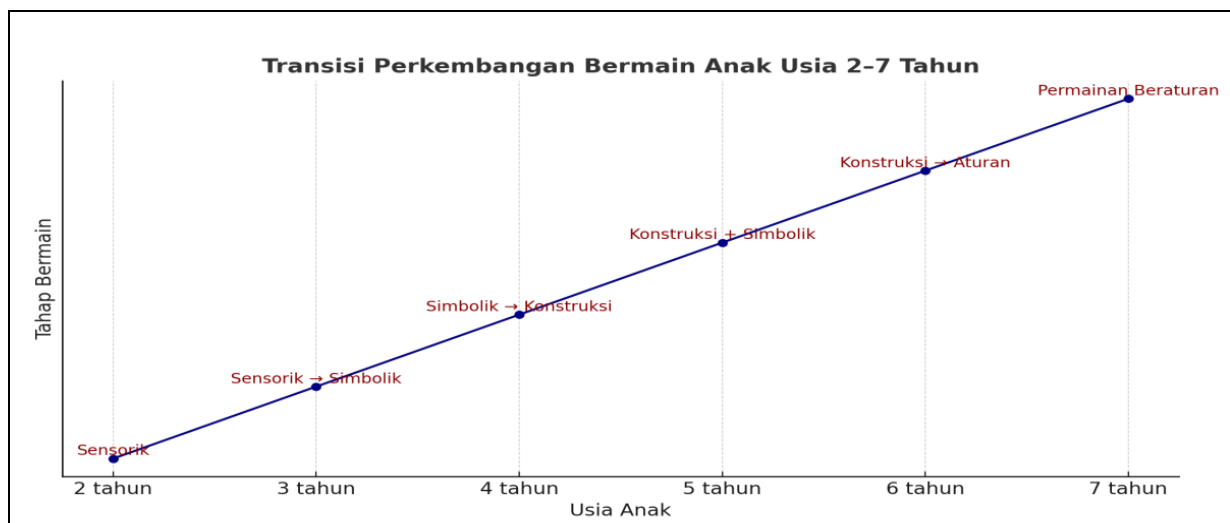
Centre-based learning is effective in building children's character from an early age, according to Ardin and Syafril (n.d.). This method gives children the opportunity to concentrate, practise concentration, and improve their social skills by working together and communicating.

One model that is appropriate for this situation is the Beyond Centres and Circle Time (BCCT) approach, which emphasises centre-based learning and circle activities, giving children the opportunity to learn through play, exploration, and social interaction (Suyanto, 2005). This model supports the development of children's motor, cognitive, social, and emotional skills, making it a relevant approach for optimising early childhood development.

Therefore, the fine motor skills of early childhood can be well supported through the application of the BCCT model, effective teacher leadership, and planned learning management.

## Graphs dan Table

Figure 1: Developmental Play Capacities of Young Children (adapted from Smilansky, 1968)



Children's development in sensory, symbolic and constructional play is shown in this chart. Each stage of development requires appropriate learning management and teacher leadership in directing centre activities (BCCT). Play Development Capacity of Children Aged 2–7 Years

Table 1, Developmental Play Capacities of Young Children (adapted from Smilansky, 1968)

No	Child's Age	Dominant Type of Play	Example Activities
1.	2 Years	Sensory (Sensory-motor)	Pouring water, squeezing plasticine or Playdoh made from flour, shaking noisy toys
2.	3 Years	Sensory – Symbolic	Playing with sand/water, pretending to be mummy/daddy, feeding dolls
3.	4 Years	Symbolic- Construction	Chairs become trains, stacking blocks, making shapes from puzzle
4.	5 Years	Construction – Regular Games	Stringing beads, building houses from blocks, role-playing with friends
5.	6 Years	Construction– Regular Games	Assembling puzzles, making models, starting to follow rules, simple games
6.	7 Years	Games with Rules	Playing snakes and ladders, congkak, group games with clear rules

According to Smilansky (1968), there are stages of play development in early childhood. These include sensory/functional play, symbolic/role play, and construction play. Children between the ages of 3 and 4 tend to engage in the sensory stage by exploring tools and materials through simple activities without a clear purpose. As children get older, they begin to enter the symbolic stage by using objects as symbols and participating in simple role-playing games. Children can make things from available materials in the construction stage, such as building blocks, stringing beads, or drawing shapes. At each stage of development, children's fine motor skills and cognitive and social abilities improve.

*Table 2, Stages of Children's Play Development and Teacher's Role in BCCT*

<b>Play Stage (Smilansky, 1968)</b>	<b>Characteristics (ages 3–4)</b>	<b>The Role of Teachers in BCCT</b>	<b>Connection with Leadership and Teacher Classroom Management</b>
Sensorimotor/ Functional	Exploring materials without a clear purpose	Facilitator: provides safe and interesting materials	Organising the learning environment, managing time, and maintaining safety.
Symbolic/Roleplaying	Using objects as symbols, simple games	Motivator: encourages imagination and thematic play	Directing activities, maintaining order, and supporting children's focus.
Constructive	Building or creating something (blocks, beading, drawing).	mentor: providing challenges and open-ended questions	leading active learning, conducting authentic assessments, and supporting children's cooperation

*Adapted from Smilansky (1968)*

In the implementation of Beyond Centres and Circle Time (BCCT), teachers have a strategic role that includes managing the planned learning process and providing media. Teachers serve as facilitators by providing a learning environment full of stimuli at the sensory stage; at the symbolic stage, they serve as motivators who encourage children's creativity and maintain order in activities; and at the construction stage, they serve as active guides who offer challenges, direction, and support so that children are able to produce work. Therefore, the

success of BCCT in developing the fine motor skills of children aged three to four years is highly dependent on learning management and teacher leadership.

### **Research Methodology**

This study utilised a qualitative approach with a descriptive type. This approach was chosen because it was in line with the research objective, which was to gain an in-depth understanding of the implementation of learning management and teacher leadership in the application of Beyond Centres and Circle Time (BCCT) for the fine motor development of children aged 3–4 years.

The main focus of the research is not on numbers or statistics, but rather on the meaning, process, and real experiences of teachers and children in learning activities. A qualitative descriptive approach is also considered appropriate because it can describe the phenomena that occur in the field as they are (Hayati & Nurjanah, 2022; Milani, 2023).

### **Research Location and Subjects**

This research was conducted at PAUD/TK (RA. Rumah Sekolah Hasirah), which consistently implements the BCCT learning model. The research subjects consisted of teachers of 3–4-year-old children, students in that age group, and the school principal as a supporting informant. The subjects were selected using purposive sampling, based on the consideration that they were directly involved in the implementation of BCCT and the development of children's fine motor skills (Sugiyono, 2019).

### **Data Collection Techniques**

Several techniques were used to obtain comprehensive data, namely:

1. Participatory observation, to observe learning activities at the centre, including teachers' strategies in managing the classroom and children's fine motor activities (Miles, Huberman, & Saldaña, 2014).
2. In-depth interviews, conducted with teachers and school principals to explore information related to learning management, leadership, and the implementation of BCCT (Creswell, 2018).
3. Documentation, in the form of collecting lesson plans, child development records, photos of activities, and other supporting documents as secondary data.

### **Research Instruments**

The main instrument in qualitative research is the researcher himself as a human instrument, because the researcher plays a direct role in collecting, interpreting, and analysing data. To support data accuracy, auxiliary instruments are also used in the form of observation guidelines, interview guidelines, and documentation sheets (Sugiyono, 2019).

### **Data Analysis Techniques**

Data is analysed using the Miles and Huberman model, which consists of three stages, namely:

1. Data reduction, filtering data that is relevant to the research focus.
2. Data presentation, displaying data in the form of narratives, tables, or charts.
3. Conclusion drawing and verification, by formulating findings and testing their validity through a triangulation process (Miles, Huberman, & Saldaña, 2014).

### **Data Validity Test**

Data validity was tested using several techniques, namely:

1. Source triangulation, comparing data from teachers, principals, and learning documents.
2. Technique triangulation, comparing the results of observations, interviews, and documentation.
3. Member check, requesting confirmation of interview results from informants to ensure data consistency (Creswell & Poth, 2018).

### **Research Procedure**

1. Preparation stage, including proposal drafting, location determination, licensing, and research instrument preparation.
2. Implementation stage, namely data collection through observation, interviews, and documentation.
3. Analysis stage, in the form of data processing and interpretation in accordance with the research focus.
4. Reporting stage, compiling research results in the form of a systematic scientific report.

### **Result**

This study involved 15 children aged between 3 and 4 years old at a preschool in Makassar. The results of the observation showed that teachers used structured role division, daily activity planning (RPPH), and organised the centre environment. Teachers also acted as leaders by providing guidance, setting an example, and providing continuous guidance.

The implementation of BCCT has improved children's fine motor skills, such as:

1. Children who were initially only able to hold a pencil can now make more deliberate strokes.
2. Children who initially had difficulty stringing beads can now string 5 to 7 beads in a row.
3. Most children showed progress in folding paper more neatly; however, more practice is needed.

The results show that BCCT allows children to practise repeatedly through guided play activities, which accelerates their fine motor development.

### **Discussion and Conclusion**

Bredenkamp and Copple (2009) state that centre-based learning enables children to acquire knowledge through direct experience. These findings are in line with Mustafa (2020), who emphasises that creative play such as drawing, folding, and beading is very important for improving fine motor skills.

However, this study differs from the research conducted by Astprachon, Srikao, and Jantharajit (2025), who developed the Experiential Learning Management Model (ELMM). The ELMM model focuses more on children's cognitive and social engagement, and this study

emphasises the integration of learning management and teacher leadership through BCCT, with a particular emphasis on the development of fine motor skills.

Compared to the research by Ardin and Syafril (n.d.), which emphasised learning centres for character building, there were also differences. This study placed greater emphasis on fine motor skills while paying attention to how teachers managed learning.

Therefore, this study shows that the success of BCCT does not only depend on the methods used, but also on the quality of learning management and teacher leadership in the classroom.

### Conclusion

Based on the results of the study, it can be concluded that:

1. The implementation of learning management through the application of BCCT plays a significant role in supporting the fine motor development of children aged 3–4 years, especially through the management of structured activities and a conducive learning environment.
2. Teacher leadership greatly determines the effectiveness of learning. Teachers who are able to facilitate, observe, and adjust strategies according to children's needs can maximise fine motor development.
3. The combination of learning management and teacher leadership results in effective learning interactions, enabling each child to receive stimulation appropriate to their stage of development.

This study emphasises the importance of teacher training in learning management and leadership, especially in the context of using BCCT, so that children's fine motor development can be achieved optimally.

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# THE ROLE OF SCHOOL LEADERSHIP AND MANAGEMENT IN IMPLEMENTING THE ISLAMIC EDUCATION CONCEPTS OF TARBIYAH, TA'LIM AND TA'DIB TO ENHANCE STUDENT CHARACTER (A CASE STUDY AT SMA ISLAM TERPADU UNHAS)

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**Abstract:** *This study aims to analyse the role of school leadership and management in implementing the islamic education concept of tarbiyah; ta'lim and ta'd to enhance student character at SMA Islam Terpadu Unhas . This study uses a qualitative approach with a case study method. Data was obtained through direct observation in the field, and interview, data analysis, and documentation. The results of the study indicate the crucial role of leadership and management in the successful the implementation of Islami education concepts Religious and visionary leadership, serving as a role models, and an effective among ement of curriculum, students and ecosystem of school significantly contribute to the enhancement of students' character. The conclusion of this study is that school leadership and management acts both a driving force and a compass, guiding the successful realization of Islamic education goals in character development.*

*Keywords: Leadership, Management, Islamic Education, Character*

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## 1. Introduction

Education plays a very important role in the process of shaping students' character. Humans are born with natural abilities, including sight, hearing, and a heart, which are gifts from the Creator. They need education so that they can optimize these abilities to the fullest extent possible. Just as character is the ultimate measure of an individual, so it also the ultimate measure of a nation (Lickona,1992). If individuals have good character, they will form a good society and a strong country will be established. However, if individuals are corrupt, they will form a corrupt society, which will weaken the country. Character not only affects individuals, but also influences the fate of the nation and its future civilization.

Education carried out from an Islamic perspective is a conscious effort aimed at creating good and pious human beings. Worshiping Allah SWT, living one's life in accordance with Islamic sharia law, and using it to support one's closeness to God. (World Conference on Muslim Education, 1997). In Islamic education, educating humans to become servants who are able to carry out their duties as servants and caliphs on earth, the goal of education is not only to increase knowledge and skills, but also character that has value so as to produce students who are civilized in Islam, they have a solid understanding of why and for whom to do something. One goal is to bring them closer to the Creator, Allah SWT. This is the grand goal of Islamic education.

The biggest problem facing Muslims is the loss of manners. (Al-Attas, 1991). The loss of manners, the loss of morals, and the loss of character that embodies values will become a major problem that this nation and community will face in the future if education only focuses on the

transfer of knowledge. In Islamic education, the concepts of tarbiya, ta'lim, and ta'dib, which are part of the concept of tarbiyah, develop the potential of students, the potential gifted by Allah SWT. The concept of ta'lim is the process of transferring knowledge, and the concept of ta'dib is the process of forming manners based on Islamic values. The concept of tarbiyah. taklim and ta'dib are applied in the Islamic education process, in the process of knowledge transfer to the formation of students' character and manners. Integrated Islamic Schools, which integrate Islamic values into every subject and all school activities, are one alternative for educating a generation that is intelligent, has good character, and is civilized. Unhas Integrated Islamic High School, one of the integrated Islamic schools at the high school level, is committed to educating a generation that has good character, is intelligent, and is civilized.

In implementing the concepts of Islamic education, tarbiyah, ta'lim and ta'dib, there are various challenges both within and outside the school. The ability of leaders to manage these challenges is a very important point in implementing the concept of Islamic education to achieve its objectives. The role of school leadership and management in implementing the Islamic educational concepts of tarbiyah, talim, and tadib to improve character, especially in the form of studies and empirical evidence, has been limited in terms of research.

This study is expected to contribute theoretically to the literature on the role of leadership and school management in implementing the concept of Islamic education, tarbiyah talim, and tadib in improving student character. The discussion of leadership and management has different points compared to several previous studies that specifically discussed Islamic education or character concepts, so it is hoped that research on school leadership and management will provide new insights that enrich the literature on Islamic education. In practice, this research is expected to provide recommendations for school principals, teachers, and policy makers on how leadership and school management can play a role in implementing the concepts of Islamic education, tarbiyah talim, and tadib in improving student character. This study emphasizes the importance of character building in school-based students by involving the role of leadership and management in implementing Islamic education concepts.

This study aims to analyze the role of school leadership and management in implementing the concept of Islamic education tarbiyah talim tadin in improving student character. The framework of this study is constructed with questions that will be discussed in the following sections, starting from the literature review, tables and figures, methodology, results, discussion, and conclusion. Research questions 1. How do school leadership and management practice the concept of tarbiyah talim ta'dib in education? 2. What is the impact of implementing the concepts of tarbiyah talim and ta'dib on student character? 3. What challenges do school leaders and management face in implementing these concepts in practice?

## **2. Literature Review**

This study reviews literature related to school leadership and management, Islamic education, and character. This study attempts to describe the role of school leadership and management in implementing the concepts of ta'lim and ta'dib in enhancing student character. The role of school leadership and management is the main focus of this study in enhancing student character by implementing the concepts of tarbiyah, ta'lim, and ta'dib.

### **Character Education in the 21st Century**

Humankind will face serious challenges in the 21st century, marked by social change, complexity, ambiguity, and a high degree of uncertainty. (Brandt, 2020; UNESCO, 2015)

This change is known as the VUCA era, which stands for Volatility, Uncertainty, Complexity, and Ambiguity.(Dziak,2024). The changes that have occurred have caused humans to face challenges at the social level, ranging from financial instability, the occurrence of pandemics, climate change, and others, changes in the economic field (globalization, innovation, and others), changes at the personal level (work capabilities, privacy, fulfillment of needs, and others), as well as rapid technological developments that have caused complex changes and social disturbances.(CCR, 2015). The development and use of AI has changed many aspects of human life, creating new challenges that bring change, convenience, and new opportunities, including privacy, healthcare, markets, labor, and renewable energy, which have the potential to endanger human life.(Masrichah, 2023).

The increasingly complex challenges that lie ahead in the future, the advent of the VUCA era—Volatility, Uncertainty, Complexity, and Ambiguity—are a reality that must be faced, with challenges and changes spreading from the realm of privacy to all aspects of life. These conditions are the challenges that will be faced in the future, so it is important to consider what the challenges will look like in the future, and they are already beginning to occur today.

Education has the task of preparing this generation to have the capacity to manage this ambiguity and change so that they are able to survive and continue to develop (Haste, 2020). The world is changing drastically, but education has not changed quickly enough to meet new demands. When the first blueprint for the modern education system was created during the Industrial Revolution, the challenges and opportunities of today are vastly different. Before the Internet, these challenges were not even the same as those of a few decades ago. An increasingly electronically connected world creates entirely new types and scales of potential problems. The goals of 21st-century education have evolved to meet the needs of human development as both individual and social beings (CCR, 2015).

Discussions about the challenges that will be faced in the 21st century and discussions about 21st century character provide a picture of what will be faced and how to respond to these challenges by preparing character from the outset. In the concept of Islamic education, *tarbiyah*, *ta'lim*, and *ta'dib* are implemented in order to be able to respond to the challenges of the times and prepare the character of 21st century learners.

### **Islamic Education Concept**

Islamic education is the name of a system, namely an Islamic education system. The religion of Islam referred to here is an effort in the form of nurturing and guiding students so that after completing their education, they can understand and practice Islamic teachings and make them their way of life. Islamic education; education is rooted in the word *didik*, which means to nurture and teach. Once used as an analogy, education can be described as a continuous process of nurturing and maintaining physical growth and human talent in an orderly manner so as to produce knowledge able people with good behavior who can preserve cultural values within society. Education is a process of instilling something into human beings; education is something that is gradually instilled into humans. “A process of instilling” refers to the methods and systems for gradually instilling what is referred to as education in simple terms. Islamic education is education that is “colored” by Islam, so Islamic education is education based on Islam. (Aris, 2022). The objectives of Islamic education as stated by experts. Naquib Al Attas states that important educational objectives must be derived from a philosophy of life. If that

philosophy of life is Islamic, then the objective is to develop perfect human beings (*insan kamil*) according to Islam. Naquib Al-Attas's thinking is, of course, still global in nature, meaning that all educational operations must lead to the value of human perfection. The expected *insan kamil* or perfect human being should be given indicators that are made comprehensively and graded according to the type and level of education so that the educational objectives can be operational and easy to measure (Al-Attas, 1991).

Islamic education is carried out in stages to develop the mind, soul, body, and heart of students so that they can fulfill their function as human beings in accordance with the purpose of their creation, namely to become perfect human beings. These are individuals who can maximize all the potential that Allah has given them for the good of their lives in this world and the hereafter.

### **Islamic Educationj Concept, Tarbiyah,Ta'lim, and Ta'dib**

Tarbiyah in Arabic means to nurture, cultivate, develop, and educate. In the context of Islam, *tarbiyah* refers to the process of nurturing and developing the whole personality of a human being, including physical, intellectual, and spiritual aspects, in accordance with Islamic teachings. According to Ahmad Tafsir, *tarbiyah* is defined as education derived from three words: *rabba-yarbu*, which means growth or development; *rabbia-yarbaa*, which means to become big or grow up; and *rabbayarubbu*, which means to improve, supervise affairs, guide, protect, and care for. Meanwhile, in terms of terminology, *at-Tarbiyah* refers to the process of shaping and developing the potential of students in all aspects, including physical, intellectual, social, aesthetic, and spiritual. (Marjuni, 2021)

The concept of education is comprehensive, in the context of Islam inherent in the connotations of the terms “*al ta'lim*,” “*ta'dib*,” and “*al-tarbiyah*,” which must be understood together. These three terms do have their own uniqueness when some or all of them are mentioned together. However, they all have different meanings, and if only one of them is mentioned, it is because each term actually has a different meaning in terms of the essence and application of the other three terms, but they share a common meaning, namely, representing Islamic education. (Amiruddin, 2022)

According to Al-Naqaid, Al-Attas, *ta'dib* means the gradual introduction and recognition instilled in humans about the proper place of everything in the order of creation, thereby guiding them toward the recognition and acknowledgment of God's power and majesty. The concept of *ta'dib* contains three elements, namely: the development of faith, the development of knowledge, and the development of deeds. The relationship between these three is very important for educational purposes as well. Faith is an acknowledgment of what Created by God in this world, realized through knowledge, and the consequence is action. Naquwif A-Attas argues that education in the context of *ta'dib* is the introduction and recognition that is actually instilled progressively in humans regarding the true place of everything in the order of creation, which guides a person in the introduction and recognition of the truth of God in the order of being and existence. (Suryani, 2024)

### **School Leadership and Management**

School leadership is one of the key factors in a school's success in improving student character. One of the leadership theories applied is transformational leadership, which is capable of bringing about positive change and a positive culture, as well as motivating and inspiring others through its leadership ( Bass &Riggio, 2006). In transformational leadership, the position of a

leader as a top leader plays a very important role. A leader's ability to inspire members to work together to realize a shared vision and mission, and to motivate members to become a decisive part in achieving goals, will greatly influence the success of the institution being led. Hallinger's idea that effective leadership for change in education is to combine two approaches: instructional and transformational leadership. Instructional leadership focuses on teaching and learning, while transformational leadership focuses on vision, culture, and empowerment. Combining instructional and transformational leadership will create a school climate conducive to continuous improvement. (Hallinger, P, 2003). In instructional leadership, leaders ensure that the outputs and outcomes of the learning process are achieved in accordance with established standards. Meanwhile, in transformational leadership, leaders build a shared vision with team members. This vision does not belong to the leader alone, who struggles to realize it on their own. Instead, when all members of the school community share a common vision that will be realized, it will be easier to achieve that vision to the fullest extent possible.

Effective school leaders need to be supported by effective management. School management begins with the process of planning, organizing, implementing, and controlling all school resources, including human resources, finances, infrastructure, curriculum, and time, so that educational goals can be achieved effectively and efficiently. (Mulyasa, 2009). The stages of management begin with planning and end with evaluation, which will greatly help organize activities so that every action and activity can be measured, and provide feedback for improvement if the steps in management are followed.

### **Research Methodology**

This study uses qualitative approach, case study method, which depth exploration of school leadership and management practices in SMA Islam Terpadu Unhas. The site chosen because the school focus on implementation of Islamic concept to enhance character. Participants were selected using purposive sampling, a technique commonly used in qualitative research to ensure the inclusion of individuals most relevant to the research focus (Patton 2015). The Participants consisted of school principal, teachers and students. they were chosen because of their direct involvement in planning, implementing and experiencing Islamic education practices at the school. Data collection with direct observation : classroom teaching, school religious activities, and leadership practices were observed to capture authentic behavior and practices. Interviews with the principal, teachers and students and document analysis such curriculum, School culture, Standar operation procedur, policy, self assessment, to provide supporting evidence.

### **Results**

The findings indicate that school leadership and management play a crucial role in implementing the Islamic education concepts of *tarbiyah*, *ta'lim*, and *ta'dib* at SMA Islam Terpadu Unhas. The combination of instructional and transformational leadership proved to be more effective and efficient in realizing the jointly established educational vision.

The religious, visionary, and exemplary leadership style demonstrated by the principal successfully built a cohesive team and fostered a conducive school climate. This finding is consistent with Bass and Riggio's (2006) argument that transformational leadership enhances motivation and collective commitment. However, the present study contributes new insights by showing that the religious dimension of leadership provides additional moral authority, a factor less emphasized in Western literature.

Furthermore, the role of instructional leadership was evident in the supervision and guidance of teaching and learning, supporting Hallinger's (2003) view on the importance of instructional leadership in educational change. At the same time, effective school management—particularly in planning, implementation, and evaluation—was found to be essential in creating a school ecosystem conducive to character education. This aligns with Al-Attas' (1991) conception of Islamic education as a holistic process that not only transmits knowledge (*ta'lim*), but also instills moral discipline (*ta'dib*) and nurtures personal growth (*tarbiyah*). From a critical perspective, this study demonstrates that Islamic leadership practices enrich existing theories of educational leadership by embedding spiritual and moral dimensions. Unlike previous studies that emphasized managerial or motivational aspects alone, the findings underscore that the integration of religious values with professional management is central to student character formation. The practical implication is that schools should adopt leadership models that not only prioritize academic achievement but also emphasize the cultivation of students' moral and spiritual development.

In the Islamic framework, instructional leadership extends beyond the pursuit of instructional effectiveness. It prioritizes *adab* as the foundation of knowledge, establishes a vision of learning grounded in divine blessing (*barakah*), manages the curriculum as a means to integrate *adab* and knowledge, and nurtures the school culture as a *majelis ilmu* (assembly of knowledge) that cultivates love for learning and noble character.

## Discussion and Conclusion

The findings of this study affirm that school leadership and management play a central role in implementing the Islamic education concepts of *tarbiyah*, *ta'lim*, and *ta'dib* at SMA Islam Terpadu Unhas. The principal's religious, visionary, and exemplary leadership created a positive school climate and served as a moral role model for both teachers and students. This supports Bass and Riggio's (2006) view that transformational leadership enhances motivation, fosters collective commitment, and drives organizational change. However, this study extends their framework by demonstrating that leadership in Islamic schools also incorporates a religious dimension that provides moral authority and spiritual guidance—an aspect that is often overlooked in Western literature.

The role of instructional leadership was equally evident, particularly in the principal's supervision and direction of teaching and learning. This aligns with Hallinger's (2003) argument that instructional leadership is essential for educational reform and the improvement of learning quality. Nevertheless, in the Islamic framework, instructional leadership extends beyond academic effectiveness by prioritizing *adab* (moral conduct) as the foundation of knowledge. The principal established a vision of learning infused with the spirit of *barakah* (divine blessing), managed the curriculum as a pathway to integrate *adab* and knowledge, and cultivated the school culture as a *majelis ilmu* (assembly of knowledge) that nurtures both intellectual growth and noble character. This contextual contribution enriches the established theory of instructional leadership with spiritual and moral dimensions.

Moreover, effective school management—particularly in planning, organizing, implementing, and evaluating programs—was found to be instrumental in building a school ecosystem conducive to character education. This is consistent with Al-Attas' (1991) conception of Islamic education as a holistic process that not only transmits knowledge (*ta'lim*), but also instills moral discipline (*ta'dib*) and nurtures personality (*tarbiyah*). The study thus provides empirical evidence that the integration of these three concepts remains relevant and effective

in addressing contemporary educational challenges. From a critical perspective, the study highlights that Islamic leadership and management practices enrich existing theories of educational leadership by embedding spiritual and moral elements. Unlike previous studies that emphasized managerial efficiency or motivational strategies alone, this research demonstrates that the integration of religious values with professional management is key to the holistic formation of students' character.

## Conclusion

School leadership and management at SMA Islam Terpadu Unhas function as both a compass and a driving force in realizing the goals of Islamic education. While transformational and instructional leadership theories offer important explanatory frameworks, the Islamic context contributes an additional dimension that foregrounds morality, spirituality, and *adab* as integral to education. Practically, this suggests that leadership development programs in Islamic schools should integrate professional management skills with religious and ethical principles. Future research may explore how these integrative practices can be adapted to other cultural and educational contexts, including multicultural and non-Islamic schools, thereby broadening the theoretical and practical contributions of educational leadership.

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# IMPLEMENTATION OF “MEPOKOASO” LEADERSHIP INCREASE QUALITY EDUCATION TO REMOTE AREAS

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**Abstract:** "mepokoaso" is a term in Tolaki language which means "united" or "unifying" refers to the values of togetherness, unity, and brotherhood, and can be interpreted as a movement or activity that is inspiring, productive, collaborative, and social action to unite various tribes, cultures, and ethnicities. This is a library research that will answer the following questions: (1) which areas are considered remote, (2) what kind of leadership is found in the Mepokoaso culture, and (3) what social values are found in the Mepokaso culture. There are five major current issues in education that require innovative leadership skills, are (1) Artificial Intelligence., (2) Equality in Talent Paths. (3) Academic Assessment.,(4) Sustainable Post-Pandemic Recovery and (5) Budget Constraints. After investigating it can concluded that (1) remote areas in Southeast Sulawesi are in Konawe, North Konawe, North Kolaka, Wakatobi, (2) leadership aspect of mepokoaso are: (a) unity, (b) brotherhood, (c) togetherness, (d) courage, and (3) mepokoaso has social meaning which consist of (a) a part of variety of cultures that are still inherent in the lives of the community as a system of oral speech and genealogy, (b) effort to unifying and unity, (c) oral tradition as part of a socio-cultural, (d) social strata. This is because of people who life in the rural area, they really have strong ties to local social groups, such as tribes and customs, which are their distinctive characteristics and sources of meaning in life, includes local norms, customs, and languages that distinguish them from other groups.

*Keywords:* Mepokoaso, Quality Of Education, Remote Area

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## 1. General

Education not only drives knowledge and science, but also shapes an individual's character, enabling them to become wise individuals and aware of their potential abilities. According to Maulido et al. (2024), education not only strengthens cognitive aspects but also the affective and spiritual aspects in the holistic development of an individual. Furthermore, education is also a form of facility provided by the state to its citizens. To improve the nation's intellectual life, the state grants individuals the right to education as citizens. Therefore, Law Number 20 of 2003 concerning the National Education System guarantees equal access to educational opportunities with equal quality. In fact, many remote areas in Indonesia still lack the same quality of education as those in large cities. The main factors causing educational inequality stem from fundamental problems: First, limited access and adequate educational infrastructure. Second, the geographical distance between islands is long, often requiring only sea routes to reach them. to school. Third, social and cultural barriers, such as social constructs that deem education unimportant, and so on. Fourth, a shortage of teachers. This condition often results in three different subjects being taught by the same teacher due to insufficient teachers within

the school environment. Fifth, low-quality teachers. The phenomenon of teachers being selective about where they teach is common. The majority of teachers teach in urban areas, while very few teachers volunteer to teach in remote areas. This means that qualified teachers are often found in large cities (Maulido et al., 2024; Rahmadi, 2020, in Resky Ananda Putri).

Each region has different needs according to its demographic, economic, political, socio-cultural, and geographical conditions. This condition also applies to remote and less developed regions of Indonesia compared to other regions on a national scale (read: the 3T (disadvantaged, frontier, and outermost) regions). In Indonesia, areas experiencing similar cases occur on the border of Entikong Sanggau, West Kalimantan, and the small islands in the Riau Islands region. Poor access to transportation, electricity, and internet connections makes it difficult to ensure equitable quality education. Furthermore, Indonesia frequently experiences curriculum changes to accommodate the policies of the ever-changing Minister of Education, which are in line with the Indonesian President's cabinet. As a result, remote areas are experiencing significant underdevelopment. The country has been very slow in developing and adapting to new educational curricula (Tempo, 2023; Abduh et al., 2022). In 2024, education in remote areas of Southeast Sulawesi still faces significant challenges, such as limited infrastructure, a shortage of qualified teachers, and low parental participation. To address these challenges, efforts include developing educational infrastructure, training and improving teacher competencies, utilizing technology, and encouraging active community and parental participation.

## **2. Introduction**

Indonesia has been implementing the Independent Curriculum (Kurikulum Merdeka) for several years. This curriculum, within the learning system, further hones student competencies and teacher creativity. Public and private schools in several regions have begun to widely implement a curriculum that utilizes technology in all learning media. Technology and internet connections, deliberately designed into classroom teaching and learning systems and applied to assignment submissions, have created new learning habits (kemdikbud.go.id, 2024). This situation has prevented remote areas from implementing the Independent Curriculum due to a lack of internet access and skilled teachers (Suroso, 2024).

To address these challenges, strategic steps to address education in remote areas are necessary. First, mentoring from pioneering schools to provide support to schools in remote areas so they can disseminate knowledge to implement the Independent Curriculum. Second, the role of local governments in paying attention to education in remote areas, such as improving internet networks and improving infrastructure in these schools. Third, increasing the number of qualified and competent teachers to support equality in Indonesia. The beginning of the Republic of Indonesia's independence in 1945 marked the beginning of Indonesian governance and development based on Pancasila and the 1945 Constitution, marked by the formation of autonomous regional governments and formed based on past history, namely former kingdoms and/or sultanates. Since the 1960s, the sons and daughters of Southeast Sulawesi have fought at that time to separate themselves from the province of South Sulawesi in order to lead, develop, and manage their own region while remaining within the framework of the Unitary State of the Republic of Indonesia.

Therefore, in 1964, this was realized so that Southeast Sulawesi could become an autonomous region, which we still feel is developing fairly even though Southeast Sulawesi is divided into two regions, namely the mainland and the island regions. The founders of Southeast Sulawesi

at that time realized and implemented the meaning and significance of one of the slogans "Mepokoaso", which means s United this is a very valuable lesson for the people of Southeast Sulawesi which consists of the Tolaki, Moronene, Muna and Buton tribes. The leadership also changes but is still under the control of the power of Mepokoaso. It is very real that Mepokoaso, in the land of ANOA as a strong grip for leading Southeast Sulawesi until now which has been imprinted in every soul and spirit of the four pillars of Southeast Sulawesi in building their own region.

The leader of Southeast Sulawesi is one who can Master, feel and understand the socio-cultural theory and meaning of Mepokoaso, is the basic foundation for Southeast Sulawesi leaders so that it can be realized in equitable development and compared with the cultural values of Tolaki, Moronene Muna and Buton as tribes in Southeast Sulawesi. The population of Southeast Sulawesi consists of native residents and immigrants as indigenous population includes: (1) the Tolaki tribe who inhabit most of the mainland of Southeast Sulawesi or include the areas of Kendari City, Konawe Regency, South Konawe, North Konawe, as well as Kolaka and North Kolaka, (2) the Muna tribe who inhabit Muna Island and the western part of North Buton, (3) the Wolio, Pancana, Cia-Cia, Kulisusu, Wakatobi tribes, and (4) the Moronene who inhabit Buton Island, Tukang Besi Island, Kabaena Island, and the mainland.

The Southeast Sulawesi peninsula is home to the Bugis, Makassar, Massenrengpulu, Ambonese, East Javanese, Balinese, Javanese, Sundanese, and a very small number of Batak people. The Bugis arrived in Southeast Sulawesi long before the Dutch took control of the region. They were followed by the Makassarese and Selayar peoples. The Minahasan, Ambonese, and East Javanese arrived with the Dutch. Some were brought by the Dutch, such as the Yogyakartaan colonizers. Other tribes came to the region through transmigration, primarily from Central Java, East Java, Bali, West Java, and West Nusa Tenggara. Both native and immigrant populations experienced no difficulty integrating into society, which resulted in mutual acceptance, creating a Southeast Sulawesi society with diverse socio-cultural backgrounds. The majority of Southeast Sulawesi's population is Muslim. Apart from that, there are also other religions such as Christianity (Protestant, Catholic), Buddhism and Hinduism which are in harmony with each other, peacefully implementing the essence of their respective religions.

The language used to communicate is the respective regional language/mother tongue and not each other interference from one language to another. This condition has led to Southeast Sulawesi being known as Indonesia Mini, which also resulted in the Southeast Sulawesi government being named a province that received the National Language Award in 2009 and the government's concern for language development and fostering by the Minister of Education and Culture in 2011 in Jakarta. The results of this observation are linked to the results of SIL research and mapping of the Language Office. The Southeast Sulawesi Language Office has only been able to identify 9 of the languages claimed by the community as their native language. Southeast Sulawesi consists of 87 percent ocean and only 13 percent land, so that automatically many remote areas are untouched by modern facilities, they live with natural conditions.

### **3. Literature Review**

Remote communities are groups of people living in difficult-to-reach geographic locations and having limited access to basic services such as education, health care, and participation in social, economic, and political networks. This term often refers to Remote Indigenous Communities which are poor, physically and socio-culturally isolated, and often dependent on

local natural resources. Remote areas are areas located far from central government, economic, and social, making them difficult to reach due to geographical limitations (e.g., mountains or islands) and a lack of infrastructure such as transportation, electricity, and telecommunications.

These areas often have lower levels of development and social welfare than other areas and have limited access to public services. Here are some examples of villages and other remote locations in Southeast Sulawesi such as (1) Namu Village in Laonti District, South Konawe Regency, (2) Runduma Island in Wakatobi Regency is very remote, requiring a 7 to 8 hour journey by wooden boat from Wanci Island to reach it, (3) Parutelang Village and Koriha Village in Ngapa District, North Kolaka Regency, and (4) Dusun in Wawosunggu in South Konawe Regency. Although it is a smaller area than a village, this hamlet also faces the challenge of difficult road access. The lives of people in remote areas seem to still maintain and preserve culture as a reference in society. Etymologically, the word "culture" in English comes from the Latin "colere" which means "to cultivate" or "to work on" something related to nature (cultivation).

Another explanation of the etymology of the means the empowerment of the mind in the form of creativity, work and intention. Associatively, it can be stated that the word "culture" has the basic meaning of the effort of the mind/mind in order to improve the quality and quantity (civilization) of human life. This effort is manifested in three basic systems, including: the complexity of ideas, concepts, interactional and transactional, or what is commonly called a social system, and the complexity of material things as a means/tool to fulfill needs, or what is commonly called an instrumental system. One inclusive definition among them is the classical definition which put forward by Sir Edward Burnett Tylor (1874) who defines culture as "that complex whole which includes knowledge, belief, art, morals, law, customs, and other capabilities and habits acquired by humans as members of society." If we pay attention, this definition emphasizes the inclusive nature of culture (many variables are included).

Furthermore, the definitions in question view culture as follows: (1) Human environment. Culture has been created by humans and is part of the human-made environment that unites human groups, (2) Social heritage and traditions. Culture refers to the history of a nation, region, or group of people, and traditions, customs, arts and crafts, architecture, music, and paintings, (3) Way of life. Culture is the way of life of a group of people or an entire society that shows how to live and what criteria are used to decide what to do in life and how to do things, (4) Behavior. Culture is about human behavior. Culture influences human behavior and shows how people should behave. Culture determines the patterns of behavior associated with a particular group of people, and the conditions and atmosphere in which various behaviors occur. Culture also helps interpret, understand, and predict the behavior of others. People's behavior depends on the culture in which they are raised.

Culture is the foundation of human behavior, (5) Rules of social life. Culture is a set of rules that give direction on how people should behave in their lives. These rules also allow for a better understanding of the behavior of others, and predicting why and how others will behave. These rules must be followed to maintain harmony and order in society, (6) Sense of self. Culture provides a sense of identity and self-worth. Culture provides meaning and direction, and shows where they come from, (7) Relationships. Culture influences personal relationships, business, corporate, and government. Culture provides direction how people should behave in a group, relate to each other, and treat others, for example friends, parents, teachers, minority groups, and groups with special needs, (8) Values and norms. Culture shows what values are important and less important. In some cultures, individuals place more importance on work,

personal achievement, and material things (e.g., the United States), while in other cultures, people are expected to be willing to share, obey, and care for others. Culture helps to reaffirm values, overcome difficulties, and find solutions to problems. Culture includes a value system, and values create culture. Beliefs and attitudes.

Culture defines beliefs, views, opinions, perceptions, attitudes towards oneself and others, and towards the world. Culture determines religious practices, beliefs about life and death, and the difference between good and bad. (10) Ways of thinking and doing things. Culture is a socially accepted way of thinking, feeling, and doing things. Culture is a means for people to communicate their thoughts and values and to meet their needs., (11) Cognitive knowledge. Culture is a system of cognitive knowledge, classifications, and categories that exist in the human mind and are shaped by the human brain. Culture is often described as the collective programming of the mind, which distinguishes members of one group from another. For example, the rules for human behavior are determined by the culturally patterned mind, (12). Mental processes and learning. Culture is about how people organize and process information, how they learn and adapt to their surroundings, and how they suffer as a result of not learning certain information or not adapting to new circumstances, (13) Information and communication. Culture is information, and information is communication. Language on the other hand is a guide for communication and culture. Language helps transmit human values, beliefs, perceptions, and norms.

Language facilitates the development of attitudes and perceptions of the world. Differences in language and verbal signals give rise to different ways of expressing beliefs, values, and Perception. Non-verbal cues, such as gestures or body language, also vary culturally. Another comprehensive yet concise definition was put forward by Malinowski, who stated that culture is "the sum of goods, rights and obligations, ideas, beliefs, abilities, and customs." Malinowski's understanding of culture shows that culture is a system of tangible and intangible components. Tangible cultural components represent the material culture necessary to support human life, such as clothing, tools, food, buildings, paintings, artifacts, and other objects. Intangible cultural elements represent non-material culture in the form of values, beliefs, attitudes, morality, ethics, spirituality, traditions, and customs. Kuserdyana emphasized that culture basically consists of three forms of culture, namely (a) the ideal form (cultural system), (b) the social system (social system), and (c) physical objects. The ideal form is abstract, existing in the minds of the society in which the culture in question lives. Another term for this ideal form is customs or traditions. The social system is the patterned actions of humans themselves.

This social system consists of human activities that interact, relate, and socialize with each other. with others based on customary behavior. The third form of physical culture is the results of human activities, actions, and works in society. Based on the explanation, we can understand that culture, from many perspectives, its meaning and form, contains the results of human creativity, feelings, and intentions. Furthermore, this becomes a standard or guideline in the process of interaction, both individually and in groups. Cultural values are the most intangible layer and have a broad scope. Therefore, cultural values are something that is very influential and used as a guideline or reference for a particular community group. Linton classifies culture into two classifications: *first*, covert culture/untouchable culture, which is culture that is invisible and cannot be touched, this culture is conceptual and has been understood and understood together by the Tolaki people. Meanwhile, culture in the form of covert culture includes ideas, cultural norms, customary law and others. Secondly, overt culture/touchable

culture, which is patterned actions and works of art and objects. Mavies and Biesanz state that in essence, culture is a savior (survival kit) of humanity on this earth.

Therefore, it can be concluded that basically, culture has values that can be taken. Basically, culture has high values, the values contained in culture can be called cultural values. Cultural values are values related to the habits, thoughts, and creative works of the person himself. Each value is the result of spiritual activity, namely reason and feelings. So one of the cultures that has values in the Tolaki tribe is Mepokoaso. Mepokoaso culture is one of the cultures that still exists and thrives amidst the social activities of the Tolaki community, especially Konawe Selatan.

#### 4. Methodology

This research uses qualitative research with a library approach that attempts to explore the leadership of Mepokoaso in improving the quality of education in remote areas. Library research is a research method that relies on library materials, such as books, journals, articles, and other documents, as the primary data source to understand a phenomenon or solve a research problem. The researcher does not interact directly with the research subjects in the field, but rather conducts a review and analysis of relevant literature to draw conclusions. This research aims to see (1) the cultural values of Mepokoaso in remote areas of Southeast Sulawesi (2) inter-community relations (3) the implementation of Mepokoaso cultural values in remote areas as an educational medium to improve education.

The data sources in this research are several articles related to Mepokoaso. The data collection methods used in this study include reading several articles and conducting observations, interviews, and documentation. The research instrument in this study is the researcher herself. Then, the data processing and analysis techniques are carried out in three stages: data reduction, data presentation, and conclusion drawing. In collecting the above materials, researcher took three steps, namely: (1) regular observation in observing activities, for example: the course of the traditional ceremony process and; (2) reading several pieces of literature related to Tolaki customs, including regarding the meaning of symbols in *kalo*, both in the context of ceremonies and outside ceremonies in everyday life, as well as other symbols; and (3) observing peaceful life patterns and providing questions to be answered by respondents regarding the attitudes of contemporary Tolaki people towards mepokoaso, using sampling techniques

#### 5. Results

After conducting internet searches and interviews with several figures and reading articles, it was found (1) geographically remote villages in Southeast Sulawesi were (a) Parutelang Village, (b) Koriha Village in North Kolaka Regency, which is a new village resulting from the division and very far from the district capital, (c) Namu Village in South Konawe, (d) Runduma Island in Wakatobi, which can also be considered remote due to its difficult access and location far from the city center, and (e) Dusun in Wawosunggu in South Konawe Regency. (2) a leadership perspective, it was found that the values of Mepokoaso are: (a) unity, (b) brotherhood, (c) togetherness, (d) courage, and (3) social meaning as a characteristic of library research, *firstly* the Tolaki tribe is a group of people living in Southeast Sulawesi as an ethnic group that has existed since ancient times, even its existence is known to have appeared before the kingdom era (Husba (2015)). The Tolaki tribe has a variety of cultures that are still inherent in the lives of the community to this day, including the Mekuku Speech as a system of oral

speech and genealogy used by the Tolaki tribe in Southeast Sulawesi to mark and affirm ethnic identity and regulate formal and informal social interactions.

This finding, according to the author's view, is directly related and strengthened through the Mepokoaso custom as an identity highlight. *Secondly*, efforts to highlight identity are one way to identify the potential cultural wealth of each tribe. And this effort is not an easy thing because each region has traditions and cultural systems that are reflected in their own ways, especially in interacting in many culture expression aspects such as folktales, fairy tales, myths, legends, or stories containing the history of a place, event, or figure created to introduce past experiences to future generations. In this way, the speakers become habits or traditions within the family, group, and community. Similarly, regions throughout the archipelago adhere to an oral system as a societal tradition. Social interaction within a heterogeneous society allows for the strengthening of identity, both within the community itself, with the goal of preserving life values, and outside the community, with the goal of cultural self-existence. This aligns with Sedyawati (in the ATL news, 1996: 5), who argues that oral traditions have both social and cultural aspects. The social aspect encompasses the actors involved, the purpose of the perpetrator's activities, and the system of organizing the oral tradition in question, while the cultural aspect relates to the various messages contained in the oral tradition and how the rules of implementation and symbols are used.

*Third*, oral tradition is part of a socio-cultural event that prioritizes the mepokoaso custom which is related to the context of the community that produces the tradition in question and the community that enjoys it. The Tolaki cultural realm is one term to refer to the former territory of the Konawe and Mekongga Kingdoms, the territory of the Tolaki rulers and traditional leaders in the past. The boundaries of this territory are considered to have a historical story of the formation of the territory of power, both in terms of geographically, as well as a traditional region that prioritizes *Mepokoaso* customs in decision-making, including those who carry out traditional speaking activities as a communication system in interactions. *Finally*, Tarimana 1993 said that *Tolaki* people, both those who live in villages and live from traditional farming, as well as those who live in cities and live as employees or entrepreneurs, see the importance of maintaining culture.

*Mepokoaso* in the author's view is a symbol of identity. "unifying" or "unity" includes the preparation of customs that are of concern such as the basic customs of government, regulating and establishing the rights and obligations, functions and duties of a king and his apparatus, regulating and establishing organizational structures and personnel to organize government, and regulating the rights of the people and obligations towards the king and the country, and regulating the relationship between the king and the people. Likewise, customs. The basic principles of family and unity relations generally regulate relations between members of the nuclear family, between members of kinship groups, and between noble and non-noble groups. These basic customs of family and unity include what is called *sara* (a) *mberapu* marriage customs, (b) *merou* customs, namely rules of etiquette. The social strata of *Tolaki* language users, there are three speech groups, namely: (a) *tulura anakia* (language of the nobility), (2) *tulura lolo* (language of the middle class), and (c) *tulura ata* (language of the slave class).

## 6. Discussion

The question that needs to be answered in this discussion is why remote areas are able to maintain the *Mepokoaso* culture and leadership, unlike modern societies. A cultured society is a social group with an integrated system of values, norms, traditions, and ways of life and the

ability to manage new cultural influences without abandoning its original identity. Characteristics of a cultured society include mutual respect, mutual cooperation, preserving regional arts, and displaying refined and friendly behavior towards others. According to the researcher's observations, people living in remote areas are deeply loyal to the power of *Mepokoaso* because its noble values, such as justice, kindness, consistency, and balance, guide the lives of village communities. *Mepokoaso* culture instills mutual respect, mutual cooperation, and togetherness through traditions such as Samaturu and the Lulo dance, which promote unity, peace, and harmony within the community.

The power of *Mepokoaso* is the philosophy of life of the *Tolaki* people, the largest ethnic group inhabiting Southeast Sulawesi. Their views on loyalty to the power of *Mepokoaso* because it contains essential values including (1) Justice, Goodness, Consistency and Balance: These values are the basis for every aspect of community life, (2) Mutual Respect (*Mombekaponaako*): Emphasizing the importance of respecting others as individuals and members of society, creating peace and harmony, (3) Brotherhood (Samaturu): Encouraging society to work together, help each other, and maintain unity, (4) The Principle of Life is reflected in the principles of *Pomaamaasiaka* (mutual respect) and *Pomamaasi* (mutual assistance), which maintain harmony between humans and nature, and (5) Another manifestation of the power of *Mepokoaso* in the *Tolaki* tribe is the spirit of mutual cooperation and solidarity which is actualized through joint activities such as building a house or other large projects, as well as values such as justice, kindness, consistency, balance, brotherhood, mutual respect, mutual assistance, and reminding each other. The philosophy of *Mepokoaso* is realized through several traditions and customs. Among others (1) Lulo Dance: symbolizes friendship, togetherness, and love of peace, where everyone regardless of age or status can participate in a circle holding hands, (2) *Metalo-alo*, namely the attitude of helping each other between residents, which shows a close sense of brotherhood and (3) *Mombekapona pona ako*, *mombeka peha-pehawa ako*, and *ronga mombeka pei peiranga ako*, namely the teachings to respect each other, remind, and give advice for the common good. Because the power of

*Mepokoaso* is so deep in its adherents, by practicing *Mepokoaso*, the *Tolaki* people are seen (1) Maintaining Unity and Brotherhood as an instrument to strengthen social relations and harmony, (2) Creating a Peaceful and Harmonious Life, meaning *Mepokoaso* guides the community to live in harmony and peace with the surrounding environment, (3) Strengthening Cultural Identity serves as a strong foundation for the *Tolaki* people in maintaining and preserving their culture and local wisdom. Regarding *Mepokoasi*, Akbar (2022) found that *Mepokoaso* cultural values in the *Tolaki* people serve as a means of preaching and preventing interfaith conflict in South Konawe.

Akbar (2022) found that *Mepokoaso* in the *Tolaki* people is a culture embodied in Kalosara, namely Sara Medulu Ronga *Mepokoaso* (basic customs in family relationships and unity in general). For example, Muslim-Christian relations in Amoito Jaya Village, Wolasi District, have never experienced conflict, but the seeds of potential conflict have been identified: interfaith marriage, polarization, and religious fanaticism. Furthermore, there are three factors supporting the development of interfaith harmony: the transmission of deeply rooted and highly respected ancestral values, healthy social interaction, and the shared family ties between Muslims and Christians. There are four values contained in the *Mepokoaso* culture of the *Tolaki* tribe, namely the value of justice, the value of kindness, consistency values and balance values. These four values are actualized through attitudes: Samaturu ronga Meohai (mutual cooperation and brotherhood). *Metalo-alo* (helping each other). Kalosara Culture and Lulo



Dance. *Mombekapona pona ako* (respecting each other), *mombeka peha-pehawa ako* (reminding each other), *ronga mombeka pei peiranga ako* (and giving advice and suggestions).

The implication of this research is that after conducting research on Mepokoaso in the Tolaki Tribe as a medium of da'wah in preventing inter-religious conflict in South Konawe, it is hoped that it can become a new material and instrument in the succession of contemporary da'wah. After the community sees and knows the values contained in the Mepokoaso culture, it is hoped that the community will participate in practicing it in their daily lives in order to maintain brotherhood, unity and harmony between religious communities. And it is also hoped that the community, especially the Tolaki tribe in South Konawe, can apply the cultural values of Mepokoaso in their social life. The Tolaki dictionary states that "mepokoaso" means "to unite." Meanwhile, the Tolaki term "mepokoaso" refers to a familial sense of togetherness, related to mutual assistance, mutual cooperation, and diversity in creating a peaceful atmosphere among people.

Mepokoaso is used as well as persuasive communication in the daily reality of the Tolaki people can be translated through attitudes and actions in responding to social, group or individual issues. Media da'wah as something used to support the ongoing message from the communicant to the audience. Or in other words, that anything that can be a tool in the da'wah process that functions to effectively convey ideas (messages) from the communicator to the communicant (audience). In general, cultural values are something in the form of values that have been embedded and agreed upon by society in the form of habits as a form of behavior and response to a situation after or before it occurs. Furthermore, the values contained in the Mepokoaso culture of the Tolaki tribe apart from the definition of unity are Mepokoaso as a symbol of brotherhood, equality, solidarity, mutual cooperation and harmony. Furthermore The values embodied in the Tolaki tribe's mepokoaso culture are imbued with justice, kindness, consistency, and balance.

Furthermore, upon closer examination, mepokoaso aims to build national commitment, tolerance, and anti-violence and anti-radicalism. Religious Conflict: Throughout history, religion has made a positive contribution to society by fostering brotherhood and a spirit of cooperation among members. However, on the other hand, religion can also trigger conflict between religious communities. This is the negative side of religion's influence on society, and this has occurred in several places in Indonesia. The diversity of religions in Indonesia has led Indonesians to have differing understandings of what their respective religions teach. These differences arise from the doctrines of different religions, ethnicities, races, cultures, and between minority and majority groups. In general, the causes of conflict between religious communities are differences in doctrine, cultural differences, and the issue of majority and minority. For example, the Tolaki tribe's mepokoaso is still highly respected. community. This can serve as a medium for conveying the importance of togetherness, integrity, and harmony in addressing religious plurality. In other words, the message of mepokoaso values can be an instrument for promoting harmony and preventing interfaith conflict in South Konawe.

The implications of this findings can be seen in the daily life of the concept of mepokoaso which has a very big influence in the Tolaki tribe as a unifying value and guideline in building social, political, and religious relations, which is even applied in several forms such as the dance, a form of unifying society as a miniature of Indonesia. This term has a deep meaning about mutual respect, love, and realizing unity and harmony in society, both as fellow human beings and with the surrounding environment, including residents from other tribes who feel they live in harmony and peace without conflict.

There is a cultural understanding and even beliefs for people living in remote areas, namely Isolated communities have a view of local culture that is closely tied to tradition, tends to be conservative, and stable because of their strong connection to nature and ancestral ways of life, even though modernization is starting to erode, showing the vulnerability of their culture to outside influences. This view reflects resistance to change, as well as the potential to adapt if there are perceived benefits, or conversely, a defensive attitude if perceived as a threat, depending on the type and intensity of interaction with outside cultures. This perspective can be changed only by taking a cultural approach, like *mepokoaso*.

In sociology, adherence to local culture is seen as a strong construct of social identity, a source of values and norms that bind a community, and a means of preserving local wisdom that has the potential to solve contemporary problems. However, sociological perspectives also recognize the challenges posed by globalization and a lack of information, which can diminish the interest of the younger generation and erode local identity.

The identity perspective for communities who live in the remote area emphasizes strong ties to local social groups, such as tribes and customs, which serve as their distinctive characteristics and sources of meaning in life. This identity encompasses local norms, customs, and language that distinguish them from other groups, and is often accompanied by a sense of pride and awareness of cultural differences despite limited engagement with broader social and economic networks.

The conclusions that can be put forward in this research are (1) remote areas in Southeast Sulawesi are in Konawe, North Konawe, North Kolaka, Wakatobi, (2) management leadership of *mepokoaso* are: (a) unity, (b) brotherhood, (c) togetherness, (d) courage, (e) , and (3) *mepokoaso* has social meaning which consist of (a) a part of variety of cultures that are still inherent in the lives of the community as a system of oral speech and genealogy, (b) effort to unifying and unity, (c) oral tradition is part of a socio-cultural , (d) social strata.

As a sovereign tribe, the community and government need to preserve and maintain *mepokoaso* as a custom, because it is an important part of the Tolaki tribe's culture that serves as a foundation for equitable development, maintaining social harmony, and preserving cultural values within the community. It serves as a guide for leaders to understand the needs of the community and manage regional development based on local wisdom values and which has implications for improving the quality of productivity-based education, especially in remote areas.

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# THE ROLE OF LEADERSHIP AND MANAGEMENT IN TEACHERS' IMPLEMENTATION OF SENSORY INTEGRATION TO OPTIMIZE MOTOR STIMULATION FOR CHILDREN WITH SPECIAL NEEDS (CASE STUDY OF R.A. RUMAH SEKOLAH HASIRAH, AGES 5-6 YEARS OLD)

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**Abstract:** *This study aims to explain the role of leadership and management of teachers in the implementation of sensory integration to optimize motoric stimuli for children with special needs in the 5-6 year old group at TK Hasirah School. The study aims to explain how teachers lead and manage the sensory integration process for children with special needs to improve their motor skills. The research method used in this study is a qualitative descriptive approach, case study, with data collection through observation, interviews, documentation, and participation in research while the author acted as a teacher and mentor to the children at the Hasirah School. The results of the study show that effective teachers can lead and manage the sensory integration process well, thereby helping children with special needs to improve their motor skills. The study shows that leadership and management by teachers are important in improving the abilities of children with special needs through sensory integration. Thus, teachers can help children with special needs reach their potential.*

*Keywords: Leadership, Management, Sensory, Special Needs*

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## INTRODUCTION

Early Childhood Education (PAUD) plays a very important role in child development, both cognitively, emotionally, socially, and motorically. This is a very important lesson. When teaching children with special needs (ABK), a more in-depth pedagogical approach is required. Among the various strategies used in education, sensory integration is one that has been proven effective in stimulating children's motor skills.

Sensory integration is the ability of the central nervous system in the brain to integrate and manage all information from motor sensors properly, resulting in purposeful adaptive behavior and neurological processes that regulate how the brain receives and responds to stimuli from the surrounding environment. In children with special needs, the nervous system's ability to integrate sensory stimuli is often impaired, which impacts gross and fine motor development. The active role of teachers and educational leaders is crucial in creating an environment that supports the implementation of this strategy.

The success of implementing this strategy depends not only on the competence of teachers as implementers, but also on school leadership and management. Educational leaders are not only responsible for policy-making, but also act as facilitators, motivators, and mentors for teachers in taking the right steps. Teachers, as direct implementers, require structured management, adequate training, and support from a collaborative work environment. Both must be able to adapt to the individual needs of children and have a deep understanding of sensory-based stimulus methods.

A case study conducted at RA Rumah Sekolah Hasirah, an inclusive educational institution for children with special needs aged 5-6 years, provides a concrete picture of how teacher leadership and management can optimize children's motor stimulation through sensory

integration programs. This institution implements various integrative methods tailored to the characteristics and needs of each child, which requires close cooperation between school management, classroom teachers, and other support staff.

However, field observations show that many schools still have a limited understanding of sensory integration in special needs education. In addition, suboptimal coordination between school administrators and teachers is one of the main obstacles to implementing this strategy.

Thus, there is a gap in research in the form of a lack of studies that explore how leadership and management practices directly influence the successful implementation of sensory integration in inclusive early childhood education institutions, particularly in Indonesia. This study aims to fill this gap by thoroughly examining the leadership and management strategies of teachers at RA Rumah Sekolah Hasirah and their impact on the motor development of children with special needs. The results of this study are expected to serve as a reference in the development of inclusive education policies and the improvement of service quality for children with special needs.

## **LITERATURE REVIEW**

Children with Special Needs (CSN) are children who require adjustments to the curriculum, learning environment, or teaching approach in order to achieve optimal results. They often experience motor and sensory development challenges that impact their independence and social participation (Widyawati, 2003). An approach that has proven effective in supporting this development is sensory integration, a stimulation method that helps the brain manage and respond appropriately to stimuli from the environment (Ayres, 1972, 2005).

Sensory integration theory explains that a child's ability to respond to stimuli depends on the efficiency of the central nervous system in processing sensory input. When there is a disturbance in the sensory system, children will have difficulty controlling movement, maintaining attention, and managing emotions (Ayres, 2005). Recent research findings show that sensory integration plays an important role in improving the motor, cognitive, and social abilities of children with special needs (Amka, 2024; UNESCO, 2021). This is in line with research (Somantr, 2006) and (Sutjihati, 2017) which emphasizes the importance of consistent gross and fine motor stimulation to support child development.

In the school context, the success of sensory integration implementation is determined not only by therapeutic methods, but also by school leadership and management. The principal acts as a leader who sets the vision, mission, and policies that support inclusive education (Saptadi, 2023). Research by Achmad & Samaeng (2025) confirms that learning supervision and the provision of inclusive infrastructure are key factors in the success of ABK programs. In addition, teachers play a strategic role in developing adaptive learning strategies, creating a supportive classroom environment, and establishing effective communication with parents (Sulaiman, 2024; Julvianti et al., 2025).

The findings of this study reinforce the previous view that synergy between school leadership, teacher management, and parental involvement is a determining factor in the success of inclusive education (Undiksha, 2025). With visionary leadership and competent teachers, sensory integration can be implemented systematically, thereby having a significant impact on children's motor development and independence. This is in line with the inclusive education

framework (UNESCO, 2021), which emphasizes the importance of multi-stakeholder collaboration in creating a friendly and responsive learning ecosystem.

Although many studies have discussed the benefits of sensory integration and the role of leadership in inclusive education, most studies still examine the two separately. The existing literature has not explored how school leadership and teacher management integration support the implementation of sensory integration to optimize motor stimulation for children with special needs. This study aims to fill this gap by linking field findings on the motor development of children with special needs with the theoretical framework of inclusive leadership and learning management. Thus, this study offers a new perspective that emphasizes the importance of collaboration between school principals, teachers, and parents as a comprehensive inclusive education ecosystem.

## TABLES DAN FIGURES

**Table 1: The Role of Leadership and Teacher Management in the Implementation of Sensory Integration**

Aspect	Leadership Teacher	Teacher Management
Planning	<ul style="list-style-type: none"> <li>- Starting the sensory integration program</li> <li>- Developing an Individualized Education Program (IEP)</li> </ul>	<ul style="list-style-type: none"> <li>Developing lesson plans that accommodate motor stimuli</li> <li>Determining schedules and strategies for sensory activities</li> </ul>
Organization	<ul style="list-style-type: none"> <li>Building cooperation between teachers and parents</li> <li>Establishing a vision for sensory integration</li> </ul>	<ul style="list-style-type: none"> <li>Preparing sensory aids</li> <li>Creating a friendly and safe classroom environment</li> </ul>
Implementation	<ul style="list-style-type: none"> <li>Setting an example for the use of sensory strategies in the classroom</li> <li>Encouraging the participation of other teachers</li> </ul>	<ul style="list-style-type: none"> <li>Implementing fine and gross motor activities as needed</li> <li>Managing the timing of sensory integration</li> </ul>
Supervision	<ul style="list-style-type: none"> <li>Observing child development</li> <li>Ensuring the involvement of all parties</li> </ul>	<ul style="list-style-type: none"> <li>Record motor observation results</li> <li>Evaluate the effectiveness of the methods used</li> </ul>
Evaluation and follow-up actions	<ul style="list-style-type: none"> <li>Evaluating the success of the integration program</li> <li>Adapting the approach based on the child's development</li> </ul>	<ul style="list-style-type: none"> <li>Creating motor development reports</li> <li>Adjusting future learning plans</li> </ul>
Professional Development	<ul style="list-style-type: none"> <li>Participating in sensory integration training</li> <li>Becoming an agent of change for inclusive schools</li> </ul>	<ul style="list-style-type: none"> <li>Sharing best practices with other teachers</li> <li>Developing motor stimulation media</li> </ul>

Ayres (2005) and Dunn (2007) provide a theoretical foundation related to sensory integration and children's sensory profiles, while Sukmadinata (2011) discusses curricula that support children's individual needs. Sari and Widodo (2021) present empirical studies on the implementation of sensory strategies by teachers in inclusive schools in Indonesia. UNESCO (2009) provides global policy guidelines on inclusive education. Teachers play a key role as leaders and managers in integrating sensory approaches in the classroom by creating programs, developing responsive lesson plans, creating a supportive classroom environment, and monitoring and evaluating children's development. Teachers also continue to improve their capacity through training and sharing good practices with colleagues to create an inclusive learning environment that is responsive to children's sensory needs, thereby providing good and effective support for children to reach their full potential.

In the context of education, especially in inclusive learning involving children with special needs, the role of teachers is not limited to managerial aspects, but also leadership. Teachers are expected to be able to manage the classroom while also being role models and motivators in applying various learning approaches, one of which is the sensory integration program.

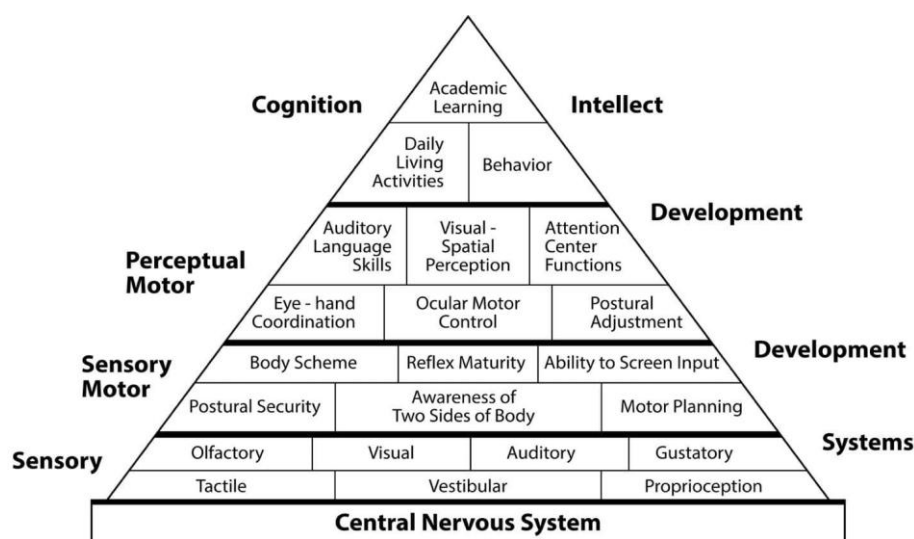
Teacher leadership and management play complementary roles in the implementation of sensory integration in inclusive schools. Teacher leadership is oriented towards vision, inspiration, and mobilization, such as initiating programs, developing Individualized Education Programs (IEPs), building cooperation with parents, and setting an example in the implementation of sensory strategies.

Meanwhile, teacher management places greater emphasis on technical and operational aspects, such as developing lesson plans, preparing teaching aids, organizing the classroom environment, recording motor development, and adjusting learning plans. Supervision and evaluation go hand in hand: leadership looks at the direction of the program's success, while management focuses on concrete data and follow-up.

By integrating both, teachers are not only able to design targeted inclusive learning, but also ensure its effective and sustainable implementation. This is in line with Bush's (2008) view of visionary leadership and Robbins & Coulter's (2016) view of operational management functions.



**Figures 2 : Stages of Sensory and Motor Integration Development**



**Pyramid of Learning** (Williams & Shellenberger, 1-4)

The Pyramid of Learning developed by Williams and Shellenberger (1996) is a conceptual model that explains the stages of child learning development as a hierarchical and integrated process. At the most basic level, the central nervous system functions as a control center that integrates various sensory inputs, including tactile (touch), olfactory (smell), visual (sight), auditory (hearing), gustatory (taste), vestibular (balance), and proprioceptive (body position awareness). This sensory integration forms the foundation for the development of sensorimotor skills, such as postural security, body schema, reflex maturation, movement planning, and the ability to filter incoming sensory input. Furthermore, at the level of perceptual motor development, children develop eye-hand coordination, ocular motor control, postural adjustment, auditory language skills, visual-spatial perception, and attention span. These stages play an important role in facilitating cognitive and intellectual development at the top of the pyramid, which includes academic learning, daily life activities, and behavior regulation. The learning pyramid emphasizes that obstacles in academic achievement and behavior often stem from sensory and motor integration disorders, so educational and therapeutic interventions need to be directed at strengthening basic developmental functions before targeting advanced cognitive abilities.

The sensory development pyramid shows that the sensory and motor systems are the strong foundation of a child's ability to learn, behave, and carry out daily activities. In other words, problems in children who have difficulty learning or exhibit unusual behavior may stem from problems with basic sensory or motor functions. By understanding this developmental sequence, parents and teachers can better help children, not only addressing the symptoms but also correcting the source.

## **Research Methodology**

This study uses a qualitative approach with a case study design. A qualitative approach was chosen because it allows researchers to explore phenomena holistically, deeply, and contextually, especially in the context of inclusive education, which is fraught with complexity

(Creswell & Poth, 2018; Merriam & Tisdell, 2016). The case study design was used so that researchers could comprehensively explore the dynamics of school principal leadership and teacher management in the application of sensory integration to optimize motor stimulation for children with special needs (Yin, 2018).

The research was conducted at RA Rumah Sekolah H asirah, an inclusive early childhood education institution that serves children with special needs. The research subjects consisted of: (1) the principal as the leader of the institution, (2) classroom teachers responsible for the learning process and the application of sensory integration, (3) children with special needs aged 5-6 years as recipients of stimulation, and (4) parents as the main supporters of their children's development.

Data collection techniques included participatory observation, in-depth interviews, and documentation studies. Observation was used to directly observe how teachers carried out sensory integration activities and how children responded motorically to the stimulation provided (Spradley, 2016). In-depth interviews were conducted with the principal, teachers, and parents to gain a broader understanding of leadership, classroom management, and child development (Kvale & Brinkmann, 2009). Documentation in the form of lesson plans, child development records, and visual documentation of activities was used as additional data to support the validity of the findings.

The main instrument in this study was the researcher himself as a human instrument (Lincoln & Guba, 1985), who played a role in designing, collecting, interpreting, and analyzing data. To support data accuracy, the researcher also used auxiliary instruments in the form of observation guidelines, interview guidelines, and documentation sheets (Sugiyono, 2019).

To maintain data validity, researchers applied source and method triangulation techniques, member checking with informants, and peer debriefing to minimize subjective bias (Miles, Huberman, & Saldana, 2014; Creswell & Poth, 2018). In addition, this study upholds research ethics, including maintaining the confidentiality of subjects' identities, obtaining official permission from the school, and ensuring that the data collection process does not interfere with the comfort or safety of children with special needs.

Overall, this methodology allows researchers to gain a comprehensive understanding of the role of school principals and teacher management in supporting the implementation of sensory integration, as well as how these practices contribute to the motor development of children with special needs. The application of sensory integration in this study refers to Ayres' (2005) theory, which emphasizes that children with sensory disorders need appropriate stimulation so that their nervous systems can respond to the environment adaptively. Therefore, the success of sensory integration is greatly influenced by the role of teachers and school leaders in organizing a learning environment that suits the sensory needs of children.

## Results

The role of the principal has proven to be very important in leading and directing schools, especially in the context of inclusive education, which requires special attention. One of the most appropriate leadership styles is transformational leadership, in which the principal is able to inspire, motivate, and support teachers and staff to achieve common goals. This is in line with Bass and Avolio (1994), who emphasize that transformational leadership can increase teacher commitment and encourage innovation in learning practices. At RA Rumah Sekolah

Hasirah, the school demonstrates transformational leadership through regular guidance, internal training, and personal coaching for teachers in dealing with children with special needs. This leadership is also manifested through collaboration with parents and the implementation of in-house training to strengthen the holistic application of sensory integration, in line with Saptadi's (2023) findings that inclusive leadership plays a role in building a collaborative and responsive school culture.

Teachers have a basic understanding of sensory integration and implement it in daily learning activities, for example through playing with textures, water, sponges, and foam. Gross motor activities such as crawling, rolling, creeping, and catching balls, as well as fine motor activities through beading, drawing, or playing puzzles, are designed to stimulate children's sensory systems. In addition, teachers also use attention focusing techniques with music and touch, which is in line with Ayres (2005) regarding the importance of sensory regulation in improving children's focus and emotional control. Teachers consistently develop Individual Learning Programs (ILPs) based on sensory observation and assessment results, as suggested by Sutjihati (2017) that motor skills development should be tailored to the characteristics and needs of each child.

The results of the observation show a significant improvement in emotional regulation, focus, and social interaction in children aged 5-6 years who consistently participated in the sensory integration program. These findings support Widyawati's (2003) study, which explains that sensory disorders can affect emotional control and attention, so that sensory integration plays an important role in helping children with autism and other children with special needs. Some children showed significant development in responding to touch and sound stimuli, as well as improvements in fine motor skills such as the ability to hold a pencil and dress independently. Parents' reports also indicated changes in their children's behavior at home, particularly in terms of independence and emotional control, which is consistent with Amka's (2024) findings that parental involvement in sensory interventions contributes to sustained positive outcomes outside of school.

## **Discussion and Conclusion**

The results of the study show that the principal plays a central role in supporting the implementation of sensory integration through a visionary and participatory leadership style. The leadership demonstrated not only covers the special needs of children and the empowerment of teachers in implementing appropriate learning strategies. The principal of RA Rumah Sekolah Hasirah plays an active role in directing, motivating, and creating a school culture that is inclusive and responsive to the diverse needs of children.

Teacher management has proven to be a key factor in the successful implementation of sensory integration. Teachers are not only implementers, but also designers of activities that can stimulate children's motor development optimally. Teachers at this school have implemented a learning approach that involves various sensory activities such as tactile games, gross and fine motor activities, and the use of multisensory media. This is supported by internal training and regular supervision facilitated by the principal, thereby creating harmonious collaboration between the leadership and teaching staff.

Based on the results of the study, it can be concluded that the leadership of the principal and teacher management have important and complementary roles in the application of sensory integration to optimize motor stimulation for children with special needs aged 5-6 years at RA Rumah Sekolah Hasirah. The principal acts as a leader, motivator, and facilitator in creating an

environment that supports inclusive learning. Teachers play a role in designing and implementing sensory-based learning activities in a systematic manner and in accordance with the children's needs.

The synergy between supportive leadership and effective teacher management contributes significantly to improving the quality of children's motor stimulation, both in terms of gross and fine motor skills. Thus, inclusive schools need to strengthen the role of the principal as a transformational leader and improve teacher capacity through training and regular mentoring so that the implementation and regular mentoring of sensory integration can run optimally and sustainably.

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## LONELINESS OF UNIVERSITY MANAGERS IN KAZAKHSTAN: CONCEPTUALIZATION OF THE PHENOMENON

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**Abstract:** The article examines the phenomenon of “managerial loneliness” in the higher education system of Kazakhstan at the levels of middle management (department heads, deans) and top management (vice-rectors, rectors). The aim of the study is to conceptualize the causes and manifestations of loneliness in university governance and to outline practice-oriented measures for its reduction. The research design is conceptual-analytical: a narrative literature review, problematization of management practices, and a substantive analysis of a co-authored article as case material. Three persistent manifestations of loneliness at the middle-management level are identified (lack of autonomy and resources; managerial powerlessness; isolation and weak peer connections), along with systemic factors at the top level (ritualized communication, rarity of problem-oriented exchange, heterogeneous team preparation). The main conclusion is that reducing managerial loneliness serves as a hidden lever for improving decision-making quality and fostering university innovation. Systemic interventions include peer communities, coaching/mentoring, and strengthening organizational support and professional communities.

**Keywords:** Higher Education in Kazakhstan, Managerial Loneliness, University Governance, Middle Management, Top Management

### 1. General

Against the backdrop of ongoing transformations in Kazakhstan’s higher education system, the ability of academic leaders to foster teamwork and networked collaboration is becoming a critical factor for institutional resilience and innovation. To provide context, let us briefly present official data for 2024–2025 on the number of universities. According to the Bureau of National Statistics (BNS), there are currently 113 active universities in Kazakhstan. Within these institutions, the estimated numbers of individuals in management positions are as follows: Rectorate: approximately 565–791 persons (based on 5–7 positions per university × 113 universities); Deans/School Directors: approximately 904–1,356 persons (based on 8–12 faculties or schools per university × 113 universities); Department Heads: approximately 2,825–6,780 persons (based on 25–60 departments per university × 113 universities).

**Diagram 1. Managerial Positions in Universities of Kazakhstan**



## 2. Introduction

Managerial loneliness is a systemic phenomenon that manifests both at the middle level (departments and faculties) and at the level of higher university management (vice-rector–rector). There is an old proverb: “If you want to go faster, go alone, but if you want to go further, go with someone.” It best fits the work of university managers (Kanagatova, A., & Melnik, D. *Forbes Kazakhstan*, 2023). In the Kazakhstani context, it is fueled by a lack of autonomy and resources, ritualization of communications, and a gap between levels of managerial team preparation. The problem is significant, since the loneliness of leaders is associated with a decline in decision-making quality, reduced innovativeness, and increased burnout.

## 3. Literature Review

Modern reviews on this topic synthesize the factors and effects of leadership loneliness, pointing to a decrease in decision-making quality and a distortion of team interactions. They highlight individual, relational, and organizational factors. For example, the classic position of “lonely at the top” (Kets de Vries, 1989) describes the isolation of top executives and the behavioral consequences. In universities, the marginality and isolation of administrators have been studied; important factors are the size of the university, the task portfolio, and the indicator of perceived mattering. Related constructs act as “bridges”: perceived organizational support (SPOS), the quality of leader–employee relations (LMX-7), and burnout (MBI). The broader social context was identified in the U.S. Surgeon General’s Report (2023) on social connectedness and in managerial practices of leader support (coaching, peer networks). In Kazakhstan, there is a shortage of empirical data on the loneliness of university administrators; this topic requires careful attention and study.

Taken together, this confirms: managerial loneliness is not a “personality trait” but a derivative of structures, relationships, and recognition within the higher education institution itself. Managers in higher education are often perceived as “lonely figures,” but numerous studies show that this is the result of organizational structures and lack of support, not a personal flaw (Kets de Vries, 1989; Lam et al., 2024). In conditions of ritualized communication, managers make key decisions alone, which lowers their quality and increases the risk of mistakes (Maslach & Leiter, 2016). The absence of team support accelerates emotional burnout, leading to cynicism and reduced productivity (Maslach & Leiter, 2016). Deans and department heads often feel excluded from strategic management processes, although they bear a significant workload—this leads to a breakdown of trust and “hidden loneliness” (*Forbes Kazakhstan*, 2023). Loneliness not only reduces the quality of managerial decisions but also slows innovation—the absence of team discussions deprives universities of creative potential (Lam et al., 2024).

## 5. Research Methodology

The research methodology was based on the following design: a conceptual-analytical study, a narrative literature review on leadership loneliness and related constructs, as well as a survey sample involving managers from seven universities of the Republic of Kazakhstan. The survey participants included department heads, deans, institute directors, vice-rectors, and rectors. The tool applied was semi-structured interviews. All procedures and methodology were grounded in ethical principles, which included anonymity, informed consent, and the depersonalization

of quotations. Our aim was to identify persistent manifestations and systemic factors, as well as to propose a set of measures suitable for implementation in the Kazakhstani context.

## 6. Results

Results and Analysis: Two Levels of Managerial Loneliness

### 1. **Middle Management Level** – Heads of Departments and Deans

Three stable manifestations of managerial loneliness were identified at this level: 1) Deficit of autonomy and resources – limited budgets and extensive approval procedures undermine agency and initiative. 2) Managerial powerlessness – responsibility without effective levers of influence generates learned helplessness and risk avoidance. 3) Isolation and weak peer connections – expressed in rare inter-faculty exchange and fragile communities of practice.

### 2. **Senior Management Level** – Vice-Rectors and Rectors

At the top level, systemic factors manifest in the following ways: 1) Ritualized communication – formal meetings displace problem-oriented dialogue and discourage disagreement. 2) Scarcity of problem-focused exchange – sensitive issues are shifted into private conversations, while “filtered” information is passed upward. 3) Uneven team preparation – the heterogeneity of managerial education within university teams hinders the development of a shared management language.



Research Table 2: Managerial Loneliness in Universities

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Level	Manifestation	Mechanisms (structural drivers)	Observable Indicators	Risks/Consequences	Quick Actions (0–90 days)	Systemic Reforms (90–360 days)	Proposed KPIs/Metrics
Middle level	Deficit of autonomy and resources	Multi-level approvals; rigidly “carnarked” budgets; reporting overload; lack of small experimental funds	Share of time spent on approvals >30%; approval levels >3; no “fast” budget lines; <1 mini-pilot/semester per department	Conservation of outdated practices; learned helplessness; attrition of proactive staff	“Pocket autonomy” (mini-budget for pilots); reduce approvals to 2 levels; time-box approvals ≤5 days; KPI of 2–3 pilots per semester	One-stop regulation; decentralization of part of the budget to the faculty/department level; digitalization of approvals; goal-based budgeting	Approval time <15%; ≥3 mini-pilots per semester per department; average approval time ≤5 days
Middle level	Managerial powerlessness (responsibility without authority)	Centralization of decisions and resources; conflicting KPIs (quality vs. enrollment/income); absence of a formalized RACI/delegation matrix	High proportion of escalations “upward”; frequent reversal of decisions at the department/faculty level; mandate satisfaction <60% (survey)	Decision paralysis; escalation culture; burnout and turnover among managers	RACI matrix; “boundaries agreement” on authority; linking authority to KPIs; regular 1:1s with deans	Delegation regulation; transition to outcome-based KPIs; authority committee; faculty-level budget and staffing limits	≥70% of decisions made at the department/faculty level; monthly escalation cases reduced; autonomy index ≥75%
Middle level	Isolation and weak peer connections	“Silos” between departments; reporting meetings instead of peer discussions; absence of peer-to-peer mentoring	<2 interfaculty projects/year; no cross-functional retrospectives; access to experts <60% (survey)	Duplication of efforts; slow diffusion of practices; emotional isolation	Weekly peer-clinics (60–90 min); inter-faculty sprints of 4–6 weeks; peer-to-peer mentoring program; case repository	Communities of practice; cross-functional project teams; annual deans’ forum; knowledge-sharing platform	≥4 interfaculty projects per year; ≥80% of managers engaged in peer-clinics; growth in network connectivity index

Upper level	Ritualized communication	Prevalence of monologues; lack of debate rules; "theatricalization of agreement"; disagreement is not encouraged	Monologues >70% of meeting time; no alternatives presented in materials; minutes record assignments rather than decisions and metrics	Blind spots; confirmation errors; strategic miscalculations	Debate rules; "red team" roles; Chatham House Rule sessions 1x/month, format "1 slide — 3 solutions — 1 risk — 1 metric."	Decision-oriented meeting regulations; facilitation training; portfolio of strategic hypotheses; independent advisors	Discussion time share ≥50%; number of alternatives per issue; ≥90% of decisions with defined success metrics
Upper level	Rarity of problem-oriented exchange	Error concealment; accreditation pressure; absence of AAR/post-mortem; repressive response to mistakes	No regular AARs; recurring failures; low reporting on lessons learned	Error repetition; loss of trust; low organizational learning capacity	Mandatory AARs (60 min) for major projects; "decision clinics" with external experts; lessons catalog with owners and deadlines	"Just culture" policy; quarterly learning reviews; integration of lessons learned into budgeting and regulations	≥80% of projects with AAR; ≥70% implementation of recommendations; psychological safety index >75%
Upper level	Multilevel preparation of managerial teams	Heterogeneous competencies; no common managerial language; absence of succession plans; shortage of professional development programs	50% of leaders without professional development in the past 12 months; non-comparable KPIs across departments; vacancies without succession plans	Personal irreplacability; "firefighting" management style; slow strategy implementation	Leadership competency model; modular PD program; shadowing/rotations 2-4 weeks; 20% of time dedicated to development	Leadership academy; succession planning; certification of managers; unified glossary of management terms	PD coverage ≥90%; closure of key competency gaps; 100% succession plans for critical roles

This table systematizes the persistent manifestations of loneliness among management teams at the middle and upper levels, their causes, indicators, risks, and intervention measures. This tool is designed for applied audit and managerial diagnostics (0–90 days – possible quick steps; 90–360 days – systemic reforms are expected).

Various international studies demonstrate the universality of this problem for the entire university community. Let us present several cases. For example, in Japan, the practice of Lesson Study has been successfully implemented, helping to overcome the isolation not only of teachers but also of management teams, and it can serve as a model for university administrators.

The phenomenon of loneliness among management teams in Kazakhstan can be addressed through institutionalized networking and the creation of professional communities of university leaders. In international practice, such communities are well established: Rectors' Clubs and university associations serve as platforms for experience exchange, joint problem-solving, and leadership support. One such initiative in Central Asia is the Central Asia Rectors' Club, launched by Almaty Management University (Kazakhstan, Almaty). This club unites universities from Kazakhstan, Kyrgyzstan, Uzbekistan, and other countries of the region. Its key idea is the development of cooperation, the design of a common educational space, and the mutual support of higher-level university management in Central Asia.

Other cases include the European University Association (EUA) and the Talloires Network of Engaged Universities. The EUA brings together more than 850 universities across Europe to discuss issues of autonomy, university development, quality of education, and leadership. At the global level, the Talloires Network of Engaged Universities unites more than 440 rectors from 92 countries.

Interaction and communication within such associations reduce the risk of managerial isolation, allow leaders to see themselves as part of the global academic community, and form “networks of meaning.” This directly alleviates leaders' feelings of loneliness, while uniting managers around the mission of universities' social engagement. Earlier, in our Forbes.kz publication with Darya Melnik (Kanagatova, A., & Melnik, D., *Forbes Kazakhstan*, 2023), we explored possible solutions. They are as follows. John Donne once wrote that no person is an island, entire of itself, and that every person is a part of the continent. For university administrators—especially those capable of creating something new and leading others—it is time to stop being islands. We see three blocks of solutions.

First, it is time to move away from the ideal of the “proud eagle” in university governance. Sharing functions (and even simple friendship—which is an undervalued but nonetheless powerful form of organizational energy) with others should be seen as strength, not weakness. In every presentation on university development, leaders should acknowledge everyone who, in one way or another, contributed to implementing the strategy—even to preparing the slides. Programs for top management should include the development of coaching competencies. Leaders should not only be able to work within a team but also to foster the growth of the team as a whole and each of its members individually.

Second, since a system of networked interaction among professionals of different profiles across universities has not yet been fully established, it needs to be deliberately designed. This should include, for example, shared chats and online platforms for department heads of history,

as well as spaces where people can informally discuss real issues in a club-like, “no-tie” format. Such meetings have started to appear in recent years—for example, foresight sessions for rectors, joint visits to foreign universities, and a recent session on developing universities’ proposals for designing Centers of Academic Excellence. But many more are needed. The speed at which managerial innovations spread in higher education depends on how often university leaders discuss problems and solutions together, and even on how easily they can simply call one another with questions.

Moreover, networked interaction helps to shape a collective position. It is one thing when one person speaks out, and quite another when ten or a hundred do. Neither deans nor rectors will be heard if they do not first share their ideas with one another.

Third, training in professional development programs—whether master’s degrees or continuing education programs—in the field of Higher Education Administration should become the norm. This in itself creates networks among graduates. Such programs also normalize individual trajectories of professional development and establish a standard of deep expertise in one’s area of work. In American universities, for example, it is common for the person responsible for Student Affairs to have defended a dissertation specifically on Student Affairs. In this way, a personal development agenda is formed, which should become the basis for meritocratic selection into management positions.

Building and developing strong teams requires cognitive flexibility—to recognize the value of different worldviews—and high emotional intelligence—to understand what is happening with people at any given moment and to be able to help them. These qualities should become part of the selection system for the national university leadership talent pool.

Humanity has evolved as a species not through isolation and solo play, but through the ability to work with others. We believe that Kazakhstani universities must evolve by the same principle (Kanagatova, A., & Melnik, D., *Forbes Kazakhstan*, 2023).

## **7. Discussion and Conclusion**

The theoretical results obtained are consistent with international data on the impact of leader loneliness on decision-making quality and team resilience. Reducing loneliness should translate into faster decision-making cycles and increased innovative output. Practical implications are needed, including the development of inter-university peer communities, the institutionalization of coaching and mentoring, meritocratic career trajectories, and KPIs for leadership development. Rectors’ Clubs and various international associations create distinctive professional “islands of trust,” where issues and problems are discussed without formalism and on the basis of trust. They help reduce barriers of isolation, support the emotional resilience of both middle and top management, and expand the horizons of managerial thinking. Such communities serve as an antidote to managerial loneliness, enhancing the quality of decisions and the innovative potential of universities.

Overall, reducing managerial loneliness among university administrators is a hidden lever for improving the quality of governance and the innovativeness of universities in Kazakhstan. This article is conceptual-analytical in nature and relies on public narratives; causal relationships are not tested in the study.

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# EVALUATION OF SCOUTING EXTRACURRICULAR PROGRAM MANAGEMENT AT SMAN 2 BOGOR USING KIRKPATRICK EVALUATION MODEL

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**Abstract:** *This study evaluates the implementation of the scouting extracurricular program at SMAN 2 Bogor using the Kirkpatrick evaluation model. A qualitative evaluative design was employed, involving eight informants (students, scout leaders, and school management) through interviews, observation, and documentation. The findings demonstrate effectiveness across all four evaluation levels: (1) students showed enthusiasm and positive perceptions (Reaction); (2) knowledge, technical skills, and leadership competencies improved (Learning); (3) discipline, responsibility, and teamwork were applied in daily life (Behavior); and (4) the program contributed to the school's vision and reputation (Results). Despite these achievements, challenges remain in advanced pioneering training and program sustainability. The study concludes that scouting contributes significantly to character development and provides practical implications for schools to enhance extracurricular management.*

**Keywords:** *extracurricular evaluation, scouting program, Kirkpatrick model, character education, program effectiveness.*

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## 1. General

Character development of students in the era of 21st-century educational transformation has become a primary concern in national education policy. The Indonesian government responded to this challenge by issuing Minister of Education and Culture Regulation No. 63 of 2014, which established Scouting as a mandatory extracurricular activity at primary and secondary education levels. The objective is to strengthen students' discipline, leadership, and social responsibility values through direct practice-based activities outside the classroom.

However, following adjustments to national education policy direction, the government through Minister of Education, Culture, Research and Technology Regulation No. 12 of 2024 stated that Scouting is no longer a mandatory extracurricular activity that must be followed by all students, although schools are still required to provide it as part of character-building extracurricular activity options.

## 2. Introduction

The gap between policy objectives and implementation of scouting extracurricular programs may also occur in secondary schools such as SMAN 2 Bogor, which deserves systematic in-depth examination. Previous research has evaluated various educational programs using evaluation models such as CIPP (Context, Input, Process, Product) and Goal-Free Model. However, the Kirkpatrick Model-based evaluation approach is still relatively rarely used in the context of scouting extracurricular activities. This model offers a layered evaluation framework, from participant reaction (Reaction), learning that occurs (Learning), behavioral change (Behavior), to long-term impact (Result).

In practice, the implementation of scouting extracurricular programs has not fully shown optimal results. Research findings indicate that some schools do not yet have consistent structure and implementation of Scout activities according to national guidelines. Several main challenges identified include lack of competent leaders, limited facilities and infrastructure, and low student participation due to perceptions that Scouting is formal and less relevant. These problems can be categorized into seven main areas: leader competence, training schedule and time, limited facilities and infrastructure, student motivation and interest, school and parental support, low leader commitment, and inadequate evaluation and assessment.

## 3. Literature Review

The development of student character in the era of 21st-century educational transformation has become a primary concern in national education policy. The Indonesian government responded to this challenge by issuing Regulation of the Minister of Education and Culture (Permendikbud) No. 63 of 2014, which established Scouting as a compulsory extracurricular activity at the primary and secondary education levels. Its purpose was to strengthen students' values of discipline, leadership, and social responsibility through hands-on, outdoor-based activities. Scouting not only teaches survival skills and teamwork but also reinforces students' spiritual, emotional, social, and intellectual aspects.

However, along with the adjustment of the national education policy direction, the government, through Regulation of the Minister of Education, Culture, Research, and Technology (Permendikbudristek) No. 12 of 2024 concerning the Curriculum for Early Childhood, Primary, and Secondary Education, declared that Scouting is no longer a compulsory extracurricular activity that all students must participate in. Nevertheless, schools are still required to provide it as part of the options for extracurricular activities that foster character building. This change aims to give students flexibility in choosing activities according to their interests and talents, while still maintaining the character-building values embedded in Scouting as one of the primary options. The policy reflects a shift from a mandatory-participatory approach to a choice-based approach, while ensuring access to character-strengthening activities in educational institutions.

In practice, however, the implementation of Scouting extracurricular programs has not yet shown fully optimal results. Findings from various studies indicate that some schools do not yet have structures and implementation of Scouting activities consistent with national guidelines. Several key challenges identified include a lack of competent instructors, limited facilities and infrastructure, as well as low student participation due to the perception that Scouting is merely a formality and lacks relevance.

The gap between policy objectives and the actual implementation of Scouting extracurricular programs is also likely to occur in secondary schools, such as SMAN 2 Bogor, which deserves to be examined more systematically. Previous studies have evaluated various educational programs using evaluation models such as CIPP (Context, Input, Process, Product) and the Goal-Free Model. However, evaluation approaches based on the Kirkpatrick Model remain relatively underutilized in the context of Scouting extracurricular activities. This model offers a layered evaluation framework, encompassing participants' reactions (Reaction), the learning that occurs (Learning), behavioral change (Behavior), and long-term outcomes (Result).

Triana and Ismanto (2020), in their evaluation of Scouting programs in vocational high schools using the Kirkpatrick Model, found that although students expressed positive reactions toward the activities, their impact on behavioral change was not yet significant, indicating the need for improvement in the learning and implementation aspects of the program. Nevertheless, most previous studies remain limited to the application of one or two levels of the Kirkpatrick evaluation model without systematically exploring the interconnections across its entire stages. For instance, Diab (2015), in his evaluation of field-based non-formal education, only highlighted the learning and reaction levels, without empirically examining long-term behavioral changes or the program's contribution to sustainable educational development goals. This gap underscores the need for a more comprehensive and context-sensitive evaluative approach in assessing the effectiveness of non-formal educational interventions.

In light of these considerations, this study aims to evaluate the implementation of the Scouting extracurricular program at SMAN 2 Bogor comprehensively using the Kirkpatrick Model. Accordingly, this research not only seeks to describe the realities of Scouting practice but also to systematically assess the program's success in shaping students' character and competencies. The study is expected to fill a gap in the literature, provide practical contributions to the development of character education policies, and strengthen outcome-based program evaluation methods within the Indonesian educational context.

The legal foundation of Scouting education in Indonesia began with the enactment of Law No. 12 of 2010 on the Scout Movement. This law establishes the Scout Movement as a non-formal educational institution mandated to foster young generations to become individuals of character, moral integrity, patriotism, law-abiding citizenship, and life skills. Article 4 explicitly states that the purpose of the Scout Movement is to nurture learners who are faithful and devoted to God Almighty, morally upright, imbued with a spirit of nationalism, and socially responsible. The law serves as a comprehensive national legal basis encompassing institutional arrangements, accreditation, certification, and the organization of Scout units such as Gugus Depan (Front Troops), Kwartir (Councils), and Majelis Pembimbing (Supervisory Boards), while also mandating synergy among stakeholders. Law No. 12 of 2010 further stipulates that every learner has the right to Scouting education as part of youth development. This foundation is reinforced by the Character Education Strengthening (PPK) program as outlined in Presidential Regulation No. 87 of 2017, which emphasizes five core values: religiosity, nationalism, independence, mutual cooperation, and integrity.

In accordance with the mandate of this law, the government issued Minister of Education and Culture Regulation (Permendikbud) No. 63 of 2014, which designates Scouting as a compulsory extracurricular activity at the primary and secondary education levels. Article 2(1) stipulates that Scouting education is to be implemented as a compulsory extracurricular activity in basic and secondary education, meaning that all students are required to participate except under special conditions that render participation impossible. Article 3(1) sets forth three



models of implementation—Block Model, Actualization Model, and Regular Model—to ensure continuity and variation in Scouting practice. The regulation specifies its purpose as an instrument to internalize values of divinity, culture, leadership, solidarity, social responsibility, love of nature, and independence, aligned with the coherent and integrative content of the 2013 Curriculum. Management responsibility is assigned to school principals, while implementation is carried out by certified Scoutmasters with at least basic instructor-level certification. Teacher-Scoutmasters are given an additional teaching workload of up to two hours per week. The regulation also stipulates authentic assessment—attitudes evaluated through observation, self- and peer-assessment; skills evaluated through performance tasks, portfolios, and journals—which strongly supports the development of student character.

The government's commitment to strengthening student character was further reaffirmed through Presidential Regulation No. 87 of 2017 on Character Education Strengthening (PPK). This regulation mandates the integration of character values into intracurricular, co-curricular, and extracurricular activities. Extracurricular activities, including Scouting, are considered an essential avenue for optimally developing students' potential, talents, thinking, and personality. They are designed to instill the five core PPK values: religiosity, nationalism, independence, mutual cooperation, and integrity. Principals and teachers are responsible for ensuring that PPK integration is effectively carried out across all educational activities, including Scouting extracurricular programs.

However, with the shift in national education paradigms toward flexibility and personalized learning, the government introduced Minister of Education, Culture, Research, and Technology Regulation (Permendikbudristek) No. 12 of 2024 concerning the Curriculum for Early Childhood, Primary, and Secondary Education. Under this policy, the status of Scouting activities changed: from being mandatory for all students to being mandatory for schools to provide, while participation for learners became optional. Although no longer compulsory for every student, schools are still required to offer Scouting as one of the extracurricular alternatives for character and social competence development. This approach aims to give students greater freedom to choose extracurricular activities aligned with their interests, talents, and developmental needs, without diminishing the strategic role of Scouting in nation-building and character formation.

Taken together, the sequence of regulations from 2010 to 2024 demonstrates a continuity of vision in fostering youth character development through Scouting education, despite adjustments in implementation in response to the evolving needs of the times and the ongoing development of national curriculum policy.

Educational policy evaluation is a systematic process of assessing the extent to which a policy achieves its intended objectives. According to Stufflebeam and Coryn (2014), educational evaluation may employ either a goal-based evaluation approach or a goal-free evaluation approach, depending on the purposes and context of the program being assessed.

Extracurricular activities are part of non-formal education that emphasize experiential learning. Program evaluations such as Scouting require a holistic approach, which assesses not only outputs but also outcomes in the form of behavioral and character changes among participants (Priyanto et al., 2022).

The Kirkpatrick Model (Kirkpatrick & Kirkpatrick, 2016) is one of the most widely used evaluation approaches in the fields of education and training. The model consists of four interrelated levels:

#### Level 1: Reaction

This level assesses participants' reactions to the program or activity. In the context of Scouting, it relates to students' satisfaction with the materials, methods, and overall atmosphere of the activities. It evaluates participants' satisfaction and engagement in experiential learning activities.

#### Level 2: Learning

This level measures the improvement of knowledge, skills, and attitudes acquired by students after participating in Scouting activities. Examples include understanding Scouting techniques, first aid skills, and values of discipline. It also evaluates the acquisition of character values, life skills, and leadership competencies.

#### Level 3: Behavior

This level evaluates behavioral changes among students following their participation in the program. In this study, the focus is on the application of discipline, leadership, and social responsibility both in school and in the community. It specifically examines observable behavioral changes, such as improved teamwork and heightened social awareness within the school environment.

#### Level 4: Results

This level measures the long-term impacts of the program on educational goals, such as the enhancement of school discipline culture, the positive image of SMAN 2 Bogor, and contributions to the achievement of the Character Education Strengthening (PPK) initiative. It also explores broader long-term impacts, including the attainment of PPK indicators, the strengthening of the school's role as a character-building institution, and students' preparedness for the challenges of the 21st century.

A comprehensive understanding of these objectives and implementation principles is essential for this study because:

Evaluation at Level 1 (Reaction) must assess whether participants perceive benefits and enjoyment from experiential learning.

Evaluation at Level 2 (Learning) must measure the internalization of character values and life skills.

Evaluation at Level 3 (Behavior) should examine changes in collaborative behavior and leadership within the school environment.

Evaluation at Level 4 (Results) relates to the achievement of Character Education Strengthening (PPK) goals and the enhancement of the school's image as an institution that instills character values through non-formal activities.

By elaborating these objectives and principles, the Kirkpatrick Model-based evaluation framework becomes more relevant and contextually aligned with Indonesia's character education policies.

Several studies have reported varying results in the implementation of Scouting extracurricular activities and their evaluation using the Kirkpatrick Model. Triana and Ismanto (2020), in their study of Scouting programs in vocational schools, identified that students gave positive responses at the reaction level, indicating enthusiasm, enjoyment, and comfort in participating in the activities. However, the results at the behavior level revealed weaknesses, as the expected behaviors—such as discipline and leadership—were not fully established in students' daily

practices. This suggests that behavioral change does not automatically occur merely through active participation in activities; rather, it requires a more consistent and structured system of guidance.

The study by Zulaikha et al. (2021) highlighted the potential of Scouting in character development, particularly through group activities that emphasize teamwork, social concern, and responsibility. Their findings demonstrated that involvement in group activities provides students with ample opportunities to practice leadership, decision-making, and ethical interaction with peers. This indicates that character values can indeed be fostered through extracurricular activities when facilitated effectively and inclusively.

Agustin and Mazidah (2024) evaluated the implementation of the character education curriculum using the Kirkpatrick approach, focusing on the reaction and learning levels. They concluded that although students generally responded positively to enjoyable and practice-based activities, the evaluation results showed that mastery of knowledge and skills was not always achieved optimally. This finding suggests the need for a more systematic pedagogical approach in delivering materials to ensure deeper and more sustainable learning outcomes.

Plaza and Samblasinio (2024), in their study “Pathways to Wellness: Examining the Educational Impact of the Scout Movement on Junior High School Learners”, explored how Scouting activities contribute to character building and student well-being at the junior high school level. Using a qualitative approach through in-depth interviews and direct observation, they found that students’ participation in Scouting positively influenced discipline, self-confidence, and mental-emotional balance. This study confirms that Scouting not only develops practical skills but also holistically supports students’ social-emotional dimensions.

Sari and Nugraha (2021) examined the policy of compulsory extracurricular activities in senior high schools and found that its implementation was often suboptimal due to structural constraints within schools. Common challenges included insufficient practice time, limited facilities, and heavy academic workloads, all of which ultimately affected student participation and the effectiveness of the activities.

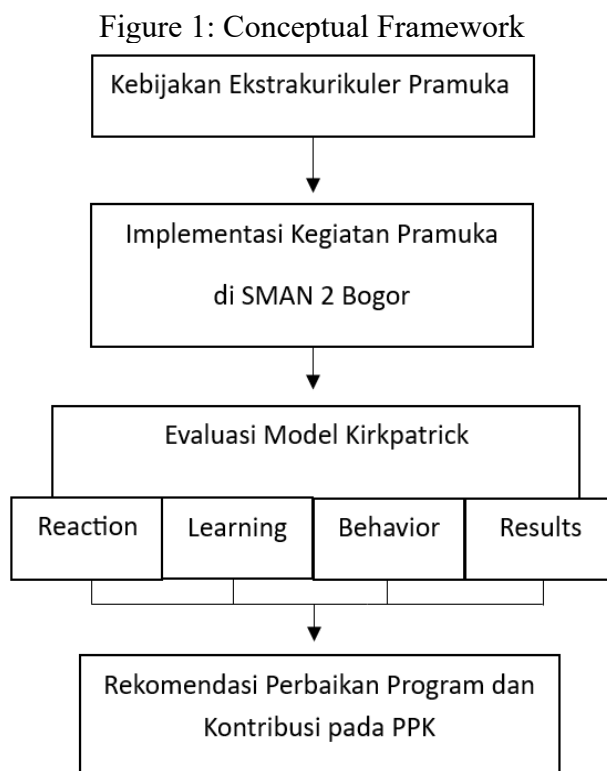
Lestari and Setyawan (2022), in an international study on the effectiveness of Scouting in developing students’ social skills, demonstrated that Scouting significantly contributes to the enhancement of soft skills such as communication, teamwork, and social awareness. They emphasized that experiential learning approaches outside the classroom can create more dynamic and relevant learning environments for students’ lives.

Finally, Mahardika (2023) conducted an evaluation of non-formal education programs using the Kirkpatrick approach, stressing the importance of aligning learning objectives with training processes. This study underscored that all four levels of the Kirkpatrick Model must be assessed simultaneously for evaluations to be comprehensive. It is not sufficient merely to determine whether participants were satisfied or understood the material; it is equally important to evaluate the extent to which participants can apply their learning in real-life contexts and whether the program produces measurable social and institutional impacts.

From these studies, it becomes evident that most research on Scouting effectiveness has focused primarily on satisfaction and learning outcomes, with relatively few addressing behavioral changes and long-term results. This gap is precisely what the present study seeks to address.

#### 4. Conceptual Framework

The conceptual framework of this study illustrates the relationship between Scout extracurricular activities, the process of implementing character education policies, and the evaluation results based on the Kirkpatrick Model.



#### 5. Research Methodology

This research aims to comprehensively evaluate the implementation of scouting extracurricular programs at SMAN 2 Bogor using the Kirkpatrick Model. The study not only attempts to describe the reality of Scout activity implementation but also systematically assess program success in forming student character and competencies. This research is expected to fill the literature gap, provide practical contributions to character education policy development, and strengthen outcome-based program evaluation methods in Indonesian education.

This research used a qualitative approach with evaluative research design. Evaluative research was chosen because the main objective of this study is to assess the effectiveness of scouting extracurricular program implementation at SMAN 2 Bogor using the Kirkpatrick evaluation model. The qualitative approach was used to obtain in-depth understanding of program implementation, participant perceptions, and impacts generated from various stakeholder perspectives involved.

The Kirkpatrick evaluation model used consists of four evaluation levels: (1) Reaction - evaluating participant reactions and satisfaction with the program; (2) Learning - evaluating improvement in participant knowledge, skills, and attitudes; (3) Behavior - evaluating participant behavioral changes after following the program; and (4) Results - evaluating program impact on the organization or institution as a whole.

The research was conducted at SMAN 2 Bogor located at Jalan Keranji Ujung No. 1, Budi Agung, Sukaresmi, Tanah Sareal District, Bogor City, West Java, 16165. The location selection was based on the consideration that SMAN 2 Bogor is one of the state schools that has had a scouting extracurricular program running for quite a long time, since November 3, 1983. The research was conducted for 1 day, on Tuesday, July 29, 2025.

The population in this research consists of all stakeholders involved in the scouting extracurricular program at SMAN 2 Bogor, including students participating in scouting extracurricular activities, scout leaders, principal and vice principal for student affairs, and teachers involved in scouting programs. The sampling technique used purposive sampling, with sample criteria for each informant category specified. The sample consisted of 4 scouting extracurricular students, 2 scout leaders, and 2 school management personnel (principal and vice principal).

This study adopted a qualitative evaluative research design. The primary purpose was to assess the effectiveness of the scouting extracurricular program using the four levels of the Kirkpatrick model. Data were collected from eight purposively selected informants, consisting of four students, two scout leaders, the vice principal, and the principal.

Data collection employed three methods:

In-depth interviews – semi-structured guides were developed for each evaluation level (Reaction, Learning, Behavior, Results). Interviews were recorded, transcribed, and validated through member checking.

Observation – researchers observed one full-day session, focusing on student participation, leader–student interactions, and the use of facilities. Field notes were systematically recorded.

Documentation study – school reports, activity plans, attendance lists, and photographs were analyzed to complement primary data.

To ensure trustworthiness, triangulation was applied across sources, methods, and time. Data analysis followed Miles and Huberman's interactive model: reduction, display (through narrative, tables, and charts), and conclusion drawing.

Primary data were obtained directly from informants through in-depth interviews with all research samples and observation of scouting extracurricular activities. Secondary data were obtained from scouting extracurricular program documents, activity reports, student achievement data in scouting, school profiles and student data, and scouting activity documentation.

Data collection techniques included in-depth interviews conducted to obtain detailed information about scouting extracurricular program implementation based on four Kirkpatrick evaluation levels. Interview guidelines were structured based on indicators at each evaluation level: Level 1 (Reaction) covering participant satisfaction, material relevance, coaching quality, and facilities; Level 2 (Learning) covering knowledge improvement, skill development, attitude changes, and scouting values mastery; Level 3 (Behavior) covering application of scouting values in daily life, behavioral changes, social involvement, and

leadership; Level 4 (Results) covering impact on academic achievement, contribution to school image, achievement of character education goals, and long-term impact on students.

Observation was conducted on scouting extracurricular activities to obtain data about implementation processes, interaction between leaders and participants, participation and enthusiasm, use of learning methods and media, and facilities and infrastructure conditions. Documentation study was conducted to obtain secondary data supporting the analysis, including curriculum and scouting syllabus, activity plans and work programs, activity reports and evaluations, achievement and student accomplishment data, and photo and video documentation of activities.

To ensure data validity, this research used triangulation techniques: source triangulation (data obtained from various different informant sources), method triangulation (data collected through various methods), and time triangulation (data collection conducted at different times). Data reliability was maintained through systematic and detailed recording during data collection, interview recording (with informant permission), data verification with informants (member checking), and consistency in research instrument use.

#### Research Limitations

This study was limited by time, as data collection was conducted within a single day, which may not fully capture long-term impacts. The focus on one school restricts generalizability. In addition, qualitative findings depend on participant perceptions, which may involve subjectivity. Access to certain documents was also constrained by school policies. Future studies should extend the evaluation period and involve multiple schools to enhance validity and comparability.

## 6. Results

Data analysis used the interactive analysis model from Miles and Huberman consisting of three main components: data reduction, data presentation, and conclusion drawing. Data reduction was conducted by selecting, focusing, simplifying, and abstracting raw data obtained from the field. Data presentation was organized in narrative text, tables, and charts to facilitate understanding and conclusion drawing. Conclusion drawing was based on reduced and presented data, with final conclusions providing a comprehensive overview of scouting extracurricular program implementation effectiveness based on the Kirkpatrick evaluation model.

SMAN 2 Bogor is one of the state senior high schools located at Jalan Keranji Ujung No. 1, Budi Agung, Sukaresmi, Tanah Sareal District, Bogor City, West Java, 16165. Established in 1958, it has become one of the leading educational institutions in Bogor City. The school's scouting extracurricular program has been running for more than 41 years since November 3, 1983, managed by Gudep 06.167-06.168 with leaders consisting of trained teachers and experienced Garuda Scouts. Scouting activities are held every Tuesday with a duration of 90 minutes (15.30-17.00 WIB).

#### Level 1: Reaction Results

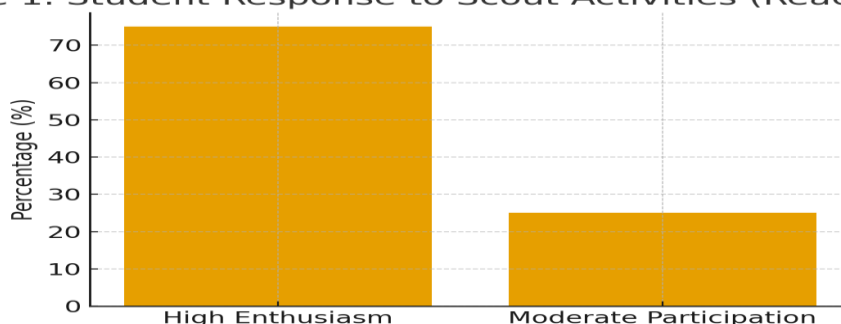
Evaluation results at the reaction stage show that students have positive impressions of Scout activities. Interview results with students are indicated by words like "exciting," "challenging," and "enjoyable" frequently appearing in their narratives. Students appreciate activities including preparation training, division distribution, basic leadership training, and camping.

Facilities and implementation time are considered supportive, and coaching methods are described as "varied and enjoyable."

Observation results show that most participants (75%) demonstrate high enthusiasm in following activities. Participants actively ask questions and participate in every implemented activity. However, around 25% of participants still show adequate participation, especially in activities requiring technical skills such as rope work and pioneering. Participants feel that scout activities are relevant to their lives as students, appreciating practical skills taught such as leadership, teamwork, and independence.

Figure 2: Student Response to Scout Activities (Reaction Level)

Figure 1. Student Response to Scout Activities (Reaction Level)



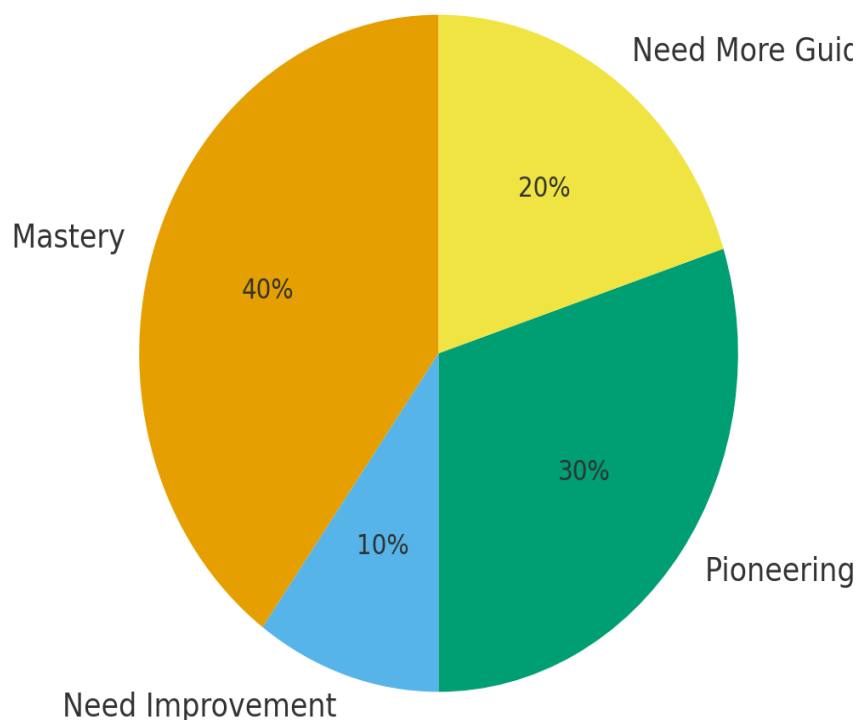
### Level 2: Learning Results

Evaluation results at the learning stage show that students obtain various substantial skills and knowledge including rope work, marching, codes, and organizational management. They are also trained in critical thinking, public speaking, and activity planning. Interview results show that participants have acquired various new knowledge related to scouting, can explain scout history well, and have understood and memorized Tri Satya and Dasa Dharma as scout honor codes.

Learning observation shows that 80% of participants are skilled in making basic rope knots, while 20% are still in the adequately skilled category. For pioneering skills, 60% of participants can make simple constructions well, while 40% still need more intensive guidance. Participants show significant improvement in leadership abilities, demonstrated by their ability to provide concrete examples of how they learn about teamwork, leadership, and discipline through scout activities.

Figure 3: Student Learning Outcomes in Scouting Activities (Learning Level)

## Student Learning Outcomes in Scouting Activities



### Level 3: Behavior Results

Application of Scout values is evident in daily life. Students demonstrate discipline, responsibility, and mutual cooperation both at school and home. They also become examples for classmates and actively lead various activities. Interview results show that participants have applied scouting values such as discipline, responsibility, and mutual cooperation in daily life, both at home and at school.

Behavioral change observation shows improvement in participant discipline. In terms of punctuality, there was improvement from the period before the program to 6 months after following activities. Likewise, compliance with rules shows positive trends. Participants show increased initiative to lead and organizational abilities, becoming more active in school activities and brave to take leadership roles in various situations.

### Level 4: Results

Scout activities have real impact on increasing self-confidence, public speaking abilities, and social participation. The four students who are key informants are known as Garuda Scout figures and receive recognition from friends and teachers. They can apply skills obtained in community activities such as social service in residential areas.

According to the Principal, scout activities contribute significantly to achieving school vision and mission, particularly in student character formation. The scouting extracurricular program supports school objectives to produce graduates who are characterized, independent, and have leadership spirit. There is positive school image improvement in society related to scouting activities, with student achievements in various scout competitions at city and provincial levels providing positive impact on school reputation.



Table 1: Summary of Kirkpatrick Evaluation Results

Level	Key Findings
Reaction	75% of students showed high enthusiasm; activities perceived as enjoyable.
Learning	80% mastered basic knots; 60% achieved pioneering skills; leadership improved.
Behavior	Increased discipline, punctuality, initiative, and teamwork in daily life
Results	Enhanced school reputation; student achievements in competitions; stronger alignment with school vision.

#### Participant Flow

Documentation study results show that attendance lists for Scout activities are available and show regular student attendance every Tuesday, reflecting positive student responses to activities through active and consistent participation. Scout leader evaluation reports are available, showing systematic reflection after each activity. Annual school reports include student character achievements from Scout activities, showing program contribution to long-term results, particularly in student character formation as the ultimate goal of education.

#### Intervention or Manipulation Fidelity

Seven students achieved Garuda Scout status and won JOTA-JOTI competitions. These achievements reflect that Scout activities impact concrete results at both individual and institutional levels. Activities are documented on official social media (Instagram Pramuka Gudavacat Tirtayasa), showing external recognition of program results, strengthening school image and community involvement.

#### Baseline Data

The research has several limitations including time constraints (conducted in 1 day period, may not capture long-term program impacts completely), location limitation (conducted only at one school, results cannot be generalized without considering context and characteristics of each school), data subjectivity (qualitative approach results in subjective data dependent on informant perceptions), and limited access (access to certain documents or activities may be limited due to school policy considerations or other factors).

## 7. Discussion and Conclusion

The scouting extracurricular program at SMAN 2 Bogor was found effective across all four Kirkpatrick levels. Positive student reactions, knowledge acquisition, behavioral changes, and institutional contributions confirm its role in character building. The study demonstrates the relevance of the Kirkpatrick model for evaluating school-based extracurricular programs.

Practical Recommendations:

Schools should provide continuous training in advanced scouting skills, particularly pioneering and leadership.

School management should ensure program sustainability through adequate facilities, consistent scheduling, and strong leader commitment.

Broader stakeholder involvement, including parents and community organizations, can strengthen the impact of scouting on student character development.

Policymakers may consider adopting outcome-based evaluation frameworks, such as the Kirkpatrick model, for other extracurricular and character education programs.

### 7.1 Program Effectiveness Based on Kirkpatrick Model

Implementation of scouting extracurricular program at SMAN 2 Bogor shows good effectiveness across all four Kirkpatrick evaluation levels. Level 1 (Reaction) shows positive participant responses to the program, with positive responses from participants indicating that emotional aspects and initial perceptions of activities become a strong foundation for program sustainability. Level 2 (Learning) shows improvement in knowledge and skills, with learning occurring not only in technical scouting aspects but also in leadership, teamwork, and communication aspects.

Level 3 (Behavior) shows positive behavioral changes in daily life. Student behavioral changes demonstrated in increased discipline and leadership prove internalization of scouting values into real life. Value-based coaching approaches such as Tri Satya and Dasa Dharma successfully transformed into habits. Level 4 (Results) shows positive impact on school organization, with program contribution to school vision achievement showing that extracurricular activities have strategic potential in strengthening school culture.

### 7.2 Theoretical and Practical Implications

Research results show that the Kirkpatrick evaluation model can be effectively applied to evaluate scouting extracurricular programs. Practically, research results can become the basis for improvement and development of scout extracurricular programs in schools, not only at SMAN 2 Bogor but also at other schools conducting similar programs. The four-level evaluation approach provides comprehensive framework for assessing program effectiveness from multiple dimensions.

### 7.3 Research Synthesis

Based on research results and discussion, it can be synthesized that implementation of scouting extracurricular program at SMAN 2 Bogor has been effective. All four Kirkpatrick evaluation levels show positive results, from good participant reactions, effective learning, real behavioral changes, to significant organizational impact. This program successfully achieves student character formation objectives and supports school vision and mission, although there are still several aspects that need continuous improvement and development.

The research contributes to filling the gap in literature regarding comprehensive evaluation of character education programs in Indonesian educational context. The systematic application of Kirkpatrick model provides valuable insights for educational practitioners and policymakers in designing and evaluating similar programs. Future research could expand the evaluation period and include multiple schools to enhance generalizability of findings.

### Acknowledgement

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