LEARNING AGILITY AMONG EDUCATIONAL LEADERS: A VUCA-READY LEADERSHIP COMPETENCY?

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ABSTRACT

Constant shifts, both in global and local spheres, be it in public or private settings, influenced by anything from disease outbreaks, politics, terrorist attacks, or natural disasters can change circumstances instantaneously, which are often described as the characteristic of a volatile, uncertain, complex and ambiguous (VUCA) environment. Hence, to weather the storm that VUCA challenges present, many practitioners as well as researchers are of the view that certain capabilities are vital to be had and developed in a leader for team and organizational success. Learning agility is, thus, seen as an important leadership competency that is crucial in facing the challenges of a VUCA world. Nevertheless, a review of the literature shows that little has been researched or being written on learning agility among educational leaders or within an educational context. Thus, this paper attempts at filling in this gap by bringing together a coherent treatment of learning agility within the context of educational leadership in the VUCA world. For further investigation and future research, a conceptual framework of learning agility which is consequential to a VUCA-ready leadership within the educational sphere is proposed.

Key words: VUCA, learning agility, leadership essential, leadership potential, leadership competency

INTRODUCTION

Organizations in various spheres of undertakings such as education, health care, industry, government, not-for-profit and military, to name a few, are looking to leadership for steering organizational success and to navigate in novel, challenging times, where accelerating pace of change, growing expectations, and rapidly evolving situations are the norms (Bawany, 2016; Dai, et al., 2013; Horney, et al, 2010; Johansen & Euchner, 2013; Rimita, et al., 2020). In fact, some are of the belief that the competitiveness of an organization lies in the ability of the organization to perform well in various spheres of activities, as it is regarded as the "key indicator representing the competitiveness of an organization" (Lim, et al., 2017. p.1). Recognizing this challenge, more and more organizations are looking at their internal organizational capacity to keep pace with the volatile, uncertain, complex and ambiguous (henceforth, VUCA) realities (Gartside et al., 2014).

Nevertheless, according to Rimita et al. (2020), "a recent study of 13,124 leaders, (found) that only 18% of the leaders were capable of leading in a VUCA world" (p.11). This is due to the fact that in most instances, when the individual leaders are confronted by increasing complexity, they either move forward or hold up (Carvan, 2015). Previous findings by McCall and Hallenbeck (2002), in De Meuse, et al., 2010) who investigated the poor performance among groups of executives working in unfamiliar surroundings indicate the need for leaders to learn and adapt to their new environments. In fact, as claimed by Carvan (2015)," survey results over time indicate a rising need to prepare leaders to face volatile, uncertain, complex and ambiguous realities...(as)...the life experience and formal learning of many senior leaders have not prepared them to act wisely and well" (p.3).

Thus, more and more researchers began to identify individual attributes that are related to long-term potential with learning agility is seen as one of the most critical leadership essential that help to enhance learning and skill development in leaders (Bywater & Lewis, 2019; Dai et al., 2013; Joiner & Joseph, 2007; Yukl & Mahsud, 2010) especially in navigating through the VUCA world (Lawrence, 2013). Since "(t)o be adaptive, it requires one to learn new ways of coping with unforeseen problems and opportunities" (Dai et al., 2013. p. 109), and hence, learning agility is used as an indicator of leadership potential (De Meuse, 2017).

While researches on learning agility are still at a nascent stage within the academic context, it has played a significant role in the practitioner world for many years (De Meuse, 2017). Still, as noted by De Meuse (2017), there are a number of scholarly articles examining the theoretical and empirical support for it as important determinant for high potential talent available (e.g; Clark & Gottfredson, 2008; Connoly, 2001; De Meuse et al., 2010; Dai et al., 2013; De Meuse et al., 2012; De Rue et al., 2012). Nevertheless, little attention has been given to learning agility as sine qua non to leadership effectiveness among educational leaders especially in facing the VUCA realities although according to Reeves and Reeves (2015), VUCA is also being regarded as a challenging environment within the educational sphere. That said, many are of the view that to be able to lead and thrive in the VUCA world is a mark of an effective leader.

EDUCATIONAL LEADERSHIP IN THE VUCA WORLD

Educational institutions are very much impacted by the changing nature of society and the VUCA world where technology is progressing exponentially well (Bolden & Regan, 2016, OECD, 2018). In the educational sector, leadership began to garner attention during the beginning of the 20th century, when "the scientific management theory was introduced with the aim of improving the quality and quantity of outcomes in the business sector" (Gumus et al., 2016. p.26). Not surprisingly therefore, development in the business world is highly likely to induce concerns within the educational sector, especially in relation to its leadership practices and behaviours that are consequential to organizational success (Suzana & Sazali, 2013).

Volatility, uncertainty, complexity and ambiguity (VUCA) which was first conceptualized within a military setting has over time gained attention within various spheres of human activities and widely adopted by business leaders to describe the conditions under which organizations operate today (Bawany, 2016; Horney et al., 2010; Rimita et al., 2020; Sarkar, 2016). Needless to say, due to the exponential development in technology globally, educational leaders too need to understand the VUCA environment and enhance their VUCA readiness to help avert VUCA-related problems (Bennet & Lemoine, 2014; Horney & O'Shea, 2015), as "the context of leadership in a VUCA world and the complexity surrounding decision-making in times of VUCA prove problematic" (Rimita et al., 2020, p.11).

Suffice, the four dimensions of VUCA, though unique on their own, are highly interrelated and can be understood as follow:

i. The letter 'V' in VUCA stands for 'Volatility'. Volatility is about the nature of change, the frequency and magnitude of change that occurs in the business environment. Volatility

- produces turbulence causing fear and aversion to risk. It creates a feeling that what we know and understand is not useful and we shall go back to basics and restart all over.
- ii. The letter 'U' in VUCA stands for 'Uncertainty'. Uncertainty is about the lack of predictability of events that could occur in (near) future. Uncertainty makes it too difficult to use the recent trends to forecast the future and forces us to wait for surprises and unexpected challenges. It causes a kind of mental paralysis through a tendency of putting in excessive yet future.
- iii. The letter 'C' in VUCA stands for 'Complexity'. Complexity renders linear problem solving methods useless and further, it pushes decision makers into dilemmas. Complexity causes a desire to find easy or 'copy-paste' solutions or else, to find scapegoats to blame.
- iv. The letter 'A' in VUCA stands for 'Ambiguity'. Ambiguity is about vagueness or confusion over reality and the possibility of misreading of events or interpretation in more than one way. Problems cannot be solved easily as the cause and effect relationship cannot be established. Ambiguity causes doubt, distrust and hesitation and slows down decision making.

(Prakash & Sindhu, 2017: 533&534)

Since "leaders in organizations contribute significantly to society and create positive social change" where "business-related problems (do) converge and translate into social problems" (Rimita et al. 2020. p.15) leadership in education in the VUCA world should be "approached from a broader perspective than the instructional perspective" (Daniels et al., 2019. p. 111). For example, within the educational technology realm "the value of educational technology research would be so much more useful if researchers, rather than starting with some 'new' things, focused their research on real problems in education (in order to) have a more meaningful impact" (Reeves & Reeves, 2015. p.3). Similarly, in the higher education context, VUCA which describes the chaotic, turbulent and rapidly changing educational environment becomes the new normal in global higher education (Waller et al., 2019).

This points to the need for effective educational leadership to adapt to the 'new normal' of disruption and instability for which appropriate perspectives and skill sets are required for organizational and team successful performance (Bawani, 2016; Elkington et al., Horney et al. 2010; Lawrence, 2013; Rimita et al., 2020; Sarkar, 2016). As leaders situated in VUCA environment, they need "to create moments of clarity and focus, whilst at the same time analyzing the shifting environment and preparing to react...(since) rigidly adhering to current strategy means risk missing opportunities" (Waller et al. 2019. p. 78). This is due to the fact that in a new era of uncertainty or volatility, previous decisions that may have worked well in a predictable setting and the standard framework underlying those decisions may not be effective anymore (OECD, 2018; Roupnel et al., 2019).

In sum, the ability to learn new skills, replace irrelevant old beliefs and apply meta-learning principles will be particularly valuable for ensuring adaptability in a VUCA world (OECD, 2018). In fact, "one solution to overcoming both threats and challenges is to have the skills, safeguards and tools...to learn the structure of the environment and replace old structures or beliefs that are no longer relevant' (OECD, 2018. p.12). Inevitably, this points to "the importance of (learning) agility...(which) came out strongly in the leadership feedback for VUCA survival" (Rimita et. al, 2020. p.15).

LEARNING AGILITY: ITS CONCEPTUALIZATION

The term learning agility was first coined by Lombardo & Eichinger (2000) who define it as "the willingness and ability to learn from experience, and subsequently apply that learning to perform successfully under new or first time conditions" (p. 322). Lombardo and Eichinger (2000) further define learning agility through four dimensions, referring to four different types of agility which are, mental agility, people agility, change agility and results agility. Burke (2016, p.2) claims that "the concept of learning agility has been gaining prominence in the practitioner world (in recent years) as a way to select and develop individual potential in organizational settings" (e.g. De Meuse et al., 2010; De Rue et al., 2012; Lombardo & Eichinger, 2000; Silzer & Church, 2009).

Interestingly, scholars have proposed several other definition of learning agility since there is no one unified agreed definition of learning agility as the word agility implies a complex, multi-dimensional and context-specific concept (De Meuse et al., 2010; De Rue, Ashford & Myers, 2012). De Rue, et al. (2012), for example, specifically distinguish the meaning of learning agility by narrowing the meaning to refer to the ability of an individual to learn fast and quick in responding to novel ideas or situations while exhibiting flexibility in learning. They further stress that learning agility implies "not getting stuck in a particular point of view and being able to transfer lessons appropriately to new lessons and experiences" (p.263).

Burke (2016) on the other hand, defines learning agility as a combination of behaviour that exhibits flexibility, speed, experimenting, collaborating, information gathering, feedback seeking and reflecting. While Hezlett and Kuncel (2012) view it as a mixture of cognitive and non-cognitive elements, whereby those with a growth mindset will direct their attention and reflect on the failure in order to improve themselves. Apart from that, learning agility is also being viewed in terms of its usability to be used as a selection tool in identifying high potentials who are fluid and adaptable (Haring et al., 2014). Interestingly, it is also seen as the best predictor for future individual performance at higher job level as current performance is seen as unreliable measure of future performance (Bedford, 2012; Dai et al., 2013; De Meuse et al. 2010; Lombardo & Eichinger, 2000).

Hallenback and Santana (2019), identified four components or sets of behaviours descriptive of learning agility, namely, seeking, sense-making, internalizing and applying. According to them, these components of learning agility allow people to learn deeply from their experiences and then apply the lessons they have learned when faced with new and challenging circumstances. While Mitchinson and Morris (2014), on the other hand, assert that learning agility can be measured based on five facets, which are, innovating, performing, reflecting, risking and defending. The first four facets are the learning enablers while the fifth is the derailer. A study conducted by a research team at Teachers College, Columbia found that high learning-agile individuals (who score highly on the four learning enabler dimensions and low on the one learning derailer dimension) are more likely to have the following traits: more extroverted, more original, more focused, more resilient and less accommodating.

Findings from research conducted by IBM in 2010 (Graven & Caldwell, 2016 in Yadav & Dixit, 2017) showed a positive correlation between learning agility of employees and "growth in new business, cost reductions, across the organization, innovative solutions that improve brand image; reductions in product life cycles; expansion of call centre productivity without staff increases (p.9,10). As a matter of fact, several studies conducted suggest that high learning agile individuals perform better in new circumstances (Connoly & Viswesvaran, 2002) since

"new jobs often require different types of knowledge, skills and capabilities that employees do not currently possess" (Dai et al., 2013. p.110).

Nevertheless, learning agility also refers not only to individual-level capability but organizational level as well whereby it focuses on the organization's ability to be adaptive to challenge by acquiring and applying appropriate knowledge and skills (Clark & Gottfredson, 2008). In fact, they identified five factors as having a crucial impact on the promotion or hindrance of organizational learning agility, namely: environmental context, learning mindset, leadership behavior, learning technology and organizational support. In relation to that, Sherehiy and Karwoski (2014) claim that "organizational agility requires development of an adaptable workforce that is able to deal with unexpected and dynamic changes in the environment" (p.466).

LEARNING AGILITY AND LEADERSHIP DEVELOPMENT

According to Collins and Horton (2004), an organization's long-term success is highly dependent on the development of its human resources, and often, it focuses on those in senior positions. Suffice to say, leadership is seen as the most important predictors of successful performance and effective adaptation to dynamic and challenging environments impacting the organization (Bass & Bass, 2009). Essential to leadership development endeavour is the ability of the leaders to deal with complexity, diversity, adversity, novelty, ambiguity (Amagoh, 2009) since "the process of leadership development requires the ability to learn" (Dai et al., 2013. p.110).

There is a critical need to identify and develop leaders who demonstrate learning agility within a continuously changing VUCA environment who can react accordingly to multiple views, paradoxes and dilemmas since it is the interpersonal and conceptual skills that demand more attention as compared to technical skills or behavioural competencies (De Meuse, et al., 2010; Lawrence, 2013; Suzana & Sazali,2013). In fact, more and more people are becoming aware that fundamentally different behaviours and mindsets are required across organizational levels especially when it concerns vertical leadership development where practices which are deemed effective at one level may or may not hold for subsequent steps (Helsing et al., 2008; Rahman & Sharif, 2015).

However, as claimed by Potsangbam (2017), organization did not successfully identify the talent needed or manage the development needs of the high potentials as preparation to face the VUCA realities. More often than not, however, the identification and assessment of high potential talent, as claimed by Silzer, et al. (2009) is based on poorly defined models as they focused more on previous performance which may be insufficient for continued success or at a higher level (Joiner, 2019). Therefore, the need to nurture a new generation of high potential leaders who can solve problems using creative, innovative and critical thinking amid ambiguity and uncertainty has become an imperative (Azionya & Oksiutycz, 2018). These high potentials are to be placed into ambiguous situations in which innovative and novel solutions are essentially required.

In fact, Dai et al. (2013) proposed that organizations need to provide the high potentials with developmental experiences as part of their leadership development since "learning agile individuals learn from job experiences and continuously develop new skills" (p.111). As claimed

by De Meuse et al. (2011), "learning from experiences requires one to deal with novelty, adversity, complexity, difficulty, diversity, uncertainty, accountability and non-authority- all of inherent in leadership development" and that "individuals with certain personal attributes will be able to handle this challenge" (p.281).

Consequently, it also implicates the importance of leadership development in nurturing this attribute in leaders in moving towards growth, development and sustainability (Collins & Horton, 2004; Rahman & Sharif, 2015) since the challenges and problems that are faced by today's organizations require different set of thinking in order to deal with the complex and novel situations (Bawany, 2016). Some begin to realize that an individual's current skill-set is of secondary importance to his/her ability to learn new knowledge, skills, and behaviors that will equip him/her to respond to future challenges. In fact, there is a growing belief that the ability to be an effective leader can be learned, and hence learning agility can be trained and developed in educational leaders. In fact, "the ability to learn the structure of one environment, and then put aside those structures (if they are irrelevant) in order to learn new structures...as well as transferring knowledge from one domain to another...is a valuable advantage...as it remains a key challenge to artificial intelligence...[since] humans are endowed with certain plasticity that makes them adaptable to change through learning" (Laukkonen et al. 2019. p.18).

There is a growing belief that the ability to be an effective leader can be learned, and hence, learning agility can be trained and developed in educational leaders. Lawrence (20130 proposed that "HR and talent management professionals must reframe leadership development activities to accommodate the faster-paced VUCA world and to focus less on behavioural competencies and more on complex thinking abilities and mindsets' (p.7). Suffice, "leadership is not about possessing a body of knowledge-or knowing it all, but about having the capacity to keep learning and to change and evolve" (Dotlitch & Noel, 1998).

DISCUSSION AND FUTURE RESEARCH AGENDA

Within the new VUCA environment where the pace of change continues to quicken, leaders in various sectors of human activities need to be prepared to embrace both future challenges and opportunities (Brodie, 2019). Educational leaders situated within a socio-organizational setting, need to empower themselves in order to cope with more demanding educational challenges, especially in today's challenging VUCA environment (Suzana & Sazali, 2013). Reflecting on past decision making to guide current and future decisions is seen as no longer viable (Codreanu, 2016) since new skills or new mindsets are needed to competently lead in today's VUCA realities (Petrie, 2011). As pointed out by Johannsen (2013), in the VUCA environment, "the dilemma is to take the VUCA world that is not only threatening but also laden with opportunity" (Johannsen, 2013 in Laukkonen et al., 2019, p.3)

Hence, in examining leadership responses to these challenges, it is critical that we understand the underlying capability associated with effective leaders in today's VUCA world. More often than not, leadership is seen as one of the most essential and effective responses to the challenges currently faced in the VUCA world. The challenge is thus far, for the leaders to be able to balance the paradoxes as existing within the VUCA environment for which learning agility is seen as a highly critical success factor for leadership effectiveness. Given the importance of learning agility in facilitating leaders to confidently face the VUCA realities, a focus on enhancing learning agility in leadership development is essential. Since learning agility

is regarded as a predictor of future success, leadership development and selection for top positions require further consideration and deeper insights.

Although there exists a substantial amount of information regarding learning agility, leadership development and the VUCA world (e.g Codreanu, 2016; Dai et al., 2013; De Meuse et al., 2010; De Rue et al. 2014; Emerick, 2011), there is little exploration on the relationship between these constructs within the educational setting. Since many are of the view that the performance of an organization depends on the capability of the leader, selecting leaders who are agile and developing this competency further is crucial for long-term success. There is a need to learn more about what contributes to learning agility for greater understanding that will have huge implications for the development of leaders, team and organization especially in today's VUCA environment.

As such, exploring the links between the antecedents of learning agility and how learning agility can be developed over time is crucial for three reasons. First, as depicted in the evidence highlighted earlier in this paper, leaders differ in their success or failure when they assume higher leadership position, which may hypothetically point to the influence of individual differences and contextual factors. Second, the continuous learning of a leader point to a developmental progress along a leader's work life that may shape his or her job performance. Third, the leaders themselves need to actively engage with the others in the organization in order for the organization to be able to perform well. Thus, research is needed to systematically examine the relationship between learning agility and the effectiveness of educational leaders to navigate successfully through the VUCA world.

The research questions that need to be addressed therefore, might include:

- i. What conditions are needed to enhance learning agility among educational leaders in order to face the VUCA world?
- ii. How might we enhance learning agility throughout the conceptualization, design, delivery and assessment of leadership development initiatives?
- iii. What organizational factors foster the improvement of learning agility among educational leaders that leverage VUCA impacts on leadership behaviour and practices?
- iv. Based on learning agility requirements, how might we better identify, support and accelerate the development of future educational leaders?

Drawing on these questions we propose a preliminary conceptual framework of the antecedents of leadership development anchored in learning agility and its outcome. As depicted in Figure 1 below, our model outlines the important dimensions that may influence the extent to which and the pace at which learning agile individuals, teams and organizations develop over time. We propose the model as a conceptual framework to highlight individual differences and organizational culture as antecedents to learning agility which need to be developed through work experiences, feedback and instruction in order to enhance the individuals, teams and organization's VUCA-readiness. Through this model, the underlying relationship that determines the impact of learning agility on effective performance of individual leaders, teams and organizations within the context of the VUCA world is illustrated.

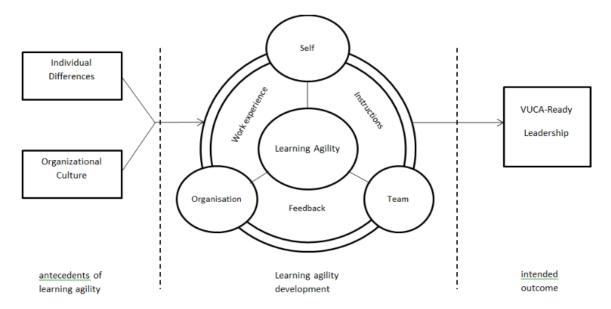


Figure 1: The proposed nomological network of learning agility

The VUCA environment is the phenomenon that has generated volatile, uncertain, complex and ambiguous realities and created the crucial need for the right competency among educational leaders to deal with the changes and challenges. In order to cope with the VUCA environment, individuals, teams and organizations need to be highly agile to respond accordingly to the challenges and opportunities abound. An agile organization, undeniably, is made up of agile teams and individuals. Thus, further research is needed to investigate and explore what individual differences and organizational culture promotes learning agility at individual, team and organizational levels which are then enhanced through work experiences, instruction and feedback that consequentially, leads to leader, team and organization VUCA-readiness.

CONCLUSION

Increasingly, within the practitioner domain, the incorporation of learning agility in leadership behaviour among leaders is seen as fundamental in responding properly to today's VUCA environment. Although there exist different definitions of learning agility or what constitutes as learning agile behaviour among leaders, it has started to gain interest among practitioners and researchers for its usability as a predictor to future successful performance, especially at higher organizational level. Nevertheless, it is still absent as an area of research or practices within the educational realm. It could be argued that to develop an agile workforce (individuals and teams) as well as an agile organization requires an understanding of the determinants of learning agility that need to and could be enhanced through work experiences, feedback and instruction. Hence, it is hoped that the proposed conceptual model will garner interest among educational leaders and researchers to initiate further exploration on learning agility as an essential competency to be enhanced in order to lead in today's VUCA environment.

REFERENCES

- Amagoh, F. (2009). Leadership development and leadership effectiveness. *Management Decision*, 47(6), 989-999. doi:10.1108/00251740910966695.
- Azionya, C., & Oksiutycz, A. (2018). Azionya, C., & Oksiutycz, A. (2019). A teaching model to promote learning agility in a university course. *The Independent Journal of Teaching and Learning*, 14(1), 6-18
- Bass, B. M., & Bass, R. (2009). The bass handbook of leadership: Theory, research, and managerial applications. New York: Simon & Schuster
- Bawany, S. (2016). "Leading in a VUCA business environment". *Leadership Excellence Essentials*, 12(7), 39-40.
- Bedford, C. L. (2012). The role of learning agility in workplace performance and career advancement. Unpublished Doctoral Dissertation, University of Minnesota, Minnesota.
- Bennet, N., & Lemoine, J. (2014). What VUCA really means for you. *Harvard Business Review*, 92(1/2).
- Bolden, R., & O'Regan, N. (2016). Digital disruption and the future of leadership: An interview with Rick Haythornthwaite, Chairman of Centrica and MasterCard. *Journal of Management Inquiry*, 25(4), 438-446. doi.org/10.1177/1056492616638173
- Bolden, R. (2011). Distributed leadership in organizations: A review of theory and research. *International journal of management reviews*, *13*(3), 251-269.
- Breen, J. M. (2017). "Leadership resilience in a VUCA world". In Elkington, R., Steege, M. V. D., Glick-Smith, J., & Breen, J. M. (Eds.) *Visionary leadership in a turbulent world: Thriving in the new VUCA context.* (pp. 39-58). Bingley, UK: Emerald Publishing Limited.
- Burke, W. (2016). Burke learning agility inventory technical report. EASI. Consult. Retrieved from https://easiconsult.com/services/blaidocs/Burke-LAI-Technical-White-Paper.pdf.
- Bywater, J., & Lewis, J. (2019). Leadership: What competencies does it take to remain engaged as a leader in a VUCA world? Assessment and Development Matters. 11(3).
- Carvan, M. T. (2015). Leadership education for the volatile, uncertain, complex and ambiguous now: A challenge to the field. *Journal of Leadership Education*. Retrieved from https://journalofleadershiped.org.
- Clark, T. R., & Gottfredson, C. A. (2008). In search of Learning agility: Assessing progress from 1957 to 2008. *A report submitted to TRCLARK LLC*. Retrieved from http://www.elearningguild.com.
- Codreanu, A. (2016). A VUCA action framework for a VUCA environment. Leadershipchallenges and solutions. *Journal of Defense Resources Management* (JoDRM), 7(2), 31-38
- Collins, D., & Holton, E. (2004). The effectiveness of managerial leadership development programs: A meta-analysis of studies from 1982-2001. *Human Resource Development Quarterly, 15(2)*, 217-248
- Connoly, J. (2001). Assessing the construct of validity of a measure of learning agility. *Dissertation Abstracts International, 62(10).* doi: 10.25148/etd.FI14060893
- Connoly, J. A., & Visveswaran, C. (2002). Assessing the construct of validity of a measure of leaning agility. Paper presented at the *Annual Conference of the Society for Industrial and Organizational Psychology*, Toronto
- Dai, G., De Meuse, K.P., & Tang, K. Y. (2013). The role of learning agility in executive career success: The results of two field studies. *Journal of Managerial Issues*, 25(2,)108-125
- Daniels, E., Hondeghem, A., & Dochy, F. (2019). A review of on leadership and leadership development in educational settings. *Educational research review, 27*, 110-125
- De Meuse, K.P., Dai, G., & Hallenbeck, G. S. (2010). Learning agility: A construct whose time

- has come. Consulting Psychology Journal: Practice and Research, 61, 119-130
- De Meuse, K. P., Dai, G., Swisher, V. V., Eichinger, R. W., & Lombardo, M. M. (2012). Leadership development: Exploring, clarifying and expanding our understanding of learning agility. *Industrial and Organizational Psychology*, *5*, 280-315
- De Meuse, K.P. (2017). Learning agility: Its evolution as a psychological construct and empirical relationship to leader success. *Consulting Psychology Journal: Practice and Research*, 69(4), 267.
- De Rue, D. S., Ashford, S. J., & Myers, C. G. (2012). Learning agility: In search of conceptual clarity and theoretical grounding. *Industrial and Organizational Psychology*, *5*(3), 258-279.
- Dotlitch, D. L., & Noel, J. (1998). *Action learning: How the world's top companies are re-creating their leaders and themselves.* San Fransisco: Josey-Bass.
- Elkington, R., Van der Steege, M., Glick-Smith, J., & Breen, J.M. (Eds.). (2017). *Visionary leadership in a turbulent world: Thriving in the new VUCA context*. Bingley, UK: Emerald Group Publishing.
- Emerick, P. (2011). Selecting learning agility and leadership context: An initial survey development phase. *Academic Leadership: The Online Journal*, 9(2), 47-58 Retrieved from https://scholars.fhsu.edu/alj/vol9/iss2/29
- Gartside, D., Silverstone, Y., & Cantrell, S. M. (2014, January). "Redesigning HR for agility", *Training*. Retrieved from https://trainingmag.com/redesigning-hr-agility/
- Graven, L. S., & Caldwell, S. A. (2016). Learning agility: The impact on recruitment and retention. New York: Pallgrave Macmillan.
- Gumus, S., Bellibas, M. S., Esen, M., & Gumus, E. (2016). A systematic review of studies on leadership models in educational research from 1980 to 2014. *Educational Management, Administration & Leadership*, *46*(1), 25-48.
- Hallenbeck, G., & Santana, L. (2019). Great leaders are great learners: How to develop learning-agile high potentials. Creative Center for Leadership. Retrived from www.ccl.org
- Haring, S., Shankar, J., & Hofkes, K. (2019). The potential of learning agility: The relationship between learning agility and success. HFMMTTalentIndex, Online assessment.

 Retrieved from https://www.hfmtalentindex.com/ en/news/the-potential-learning-agility/
- Helsing, D., Howell, A., Kegan, R., & Lahey, L. (2008). Putting the "development" in professional development: Understanding and overturning educational leaders' immunities to change. *Harvard Educational Review*, *78*(3), 437-465.
- Hezlett, S. A., & Kuncel, N. R. (2012). Prioritizing the learning agility research agenda. *Industrial* and *Organizational Psychology*, *5*(3), 296-301.
- Horney, N., Pasmore, B., & O'Shea, T. (2010). Leadership agility: A business imperative in a VUCA world. *People & Strategy, 33(4)*, 33-38.
- Johansen, B., & Euchner, J. (2013). Navigating the VUCA world. *Research-Technology Management*, *56*(1), 10-15.
- Joiner, B. (2019). Leadership agility for organizational agility. *Journal of Creating Value*, *5*(2), 139-149. Retrieved from https://doi.org/10.1177/2394964319868321
- Laukkonen, R. E., Biddel, H., & Gallagher, R. (2019). *Preparing humanity for change and artificial intelligence: Learning to learn as a safeguard against volatility, uncertainty, complexity, and ambiguity.* doi: 10.31234/osf.io/g5qwc
- Lawrence, K. (2013). Developing leaders in a VUCA environment. *UNC Executive Development*, 1-15.
- LeBlanc, P.J. (2018). Higher education in a VUCA world. *Change: The Magazine of Higher Learning*, 50(3-4), 23-26. Retrieved from https://doi.org/10.1080/00091383.2018.1507370

- Lim, D. H., Yoo, M. H., Kim, J. & Brickell, S. A. (2017). Learning agility: The nexus between learning organization, transformative learning, and adaptive performance. *Adult Education Research Conference*. Retrieved from https://newprairiepress.org/aerc/2017/papers/28
- Lombardo, M. M., & Eichinger, R. W. (2000). "High potentials as high learners". *Human Resource Management*, 39, 321-330.
- Menon, S., & Suresh, M. (2020). Organizational agility assessment for higher education institution. *The Journal of Research on the Lepidoptera, 51(1),* 561-573.
- Millar, C. C. J. M., Groth, O., Mahon, J. F. (2018). Management innovation in the VUCA world: Challenges and recommendations. *California Management Review, 61(1), 5-14*.
- Mitchinson, A., & Morris, R. (2014). Learning about learning agility. Creative Center for Leadership. Retrieved from www.ccl.org
- Pearse, N.J. (2017). Change management in a VUCA world. *Visionary leadership in a turbulent world: Thriving in the new VUCA context*, 81-105. doi.org/10.1108/978-1-78714-242-820171005
- Potsangbam, C. (2017). Adaptive performance in VUCA era- Where is research going? *International Journal of Management*, *8*(6), 99-108. Retrieved from http://www.iaeme.com/ijm/issues.asp?JType=IJM&VType=8&IType=6
- Prakash, M. S. & Sindhu. (2017). Leadership challenges in a VUCA world and competencies required to overcome the challenges. Paper presented at 10th *International Conference on Recent Innovations in Science, Engineering and Management*. Dhruva Institute of Engineering and Technology, Nalgonda, Telangana State. Retrieved from http://data.conferenceworld.in/DHRUV 10JULY17/P533-538.pdf
- Rahman, F., & Sharif, M. Y. (2015). Determinants of the effectiveness of leadership development programs: A literature review. In *Proceedings of 11th International Business and Social Science Research Conference*. Retrieved from http://ur.aeu.edu.my/534/
- Rimita, K., Hoon, S. N., & Levasseur, R. (2020). Leader Readiness in a Volatile, Uncertain, Complex, and Ambiguous Business Environment. *Journal of Social Change*, *12*(1), 10-18. doi: 10.5590/JOSC.2020.12.1.02
- Reeves, T. C., Reeves, P. M. (2015). Educational technology research in a VUCA world. *Educational Technology*, 26-30. Retrieved from https://www.jstor.org/stable/44430353? seq=1#metadata info tab contents
- Roupnel, S., Rinfre, N., & Grenier. (2019). Leadership development: Three programs that maximize learning over time. *Journal of Leadership Education*. 18(2) 126-137. doi: 10.12806/V18/I2/T1
- Sarkar, A. (2016). We live in a VUCA world: The importance of responsible leadership. Development and Learning in Organization: An International Journal. 30(3), 9-12 doi/10.1108/DLO-07-2015-0062/full/html
- Sherehiy, B., & Karwoski, W. (2014). The relationship between work organization and workforce agility in small manufacturing enterprises. *International Journal of Industrial Ergonomics*. *44*(3), 466-473. doi: org/10.1016/j.ergon.2014.01.002
- Silzer, R., & Church, A. H. (2009). The pearls and perils of identifying potential. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, *2*(4), 377-412.
- Suzana, A. L. & Sazali, Y. (2013). Leadership Development for Educational Leaders; An Integrated Model. Institut Aminuddin Baki.
- Waller, R. E., Lemoine, P. A., Mense, E. G., Garretson, C. J., & Richardson, M. D. (2019). Global higher education in a VUCA world: Concerns and Projections. *Journal of Education and Development*, *3*(2), 73-83. doi:10.20849/jed.v3i2.613

- Yadav, N., & Dixit, S. (2017). A conceptual model of learning agility and authentic leadership development: Moderating effects of learning goal orientation and organizational culture. *Journal of Human Values*, 23(1), 40-51.
- Yukl, G., & Mahsud, R. (2010). Why flexible and adaptive leadership is essential. *Consulting Psychology Journal: Practice and Research*, 62(2), 81-93.