

Navigating the VUCA Paradigm and Generative AI in Language Education and Assessment

*Mohamad Fadhili Yahaya

Academy of Language Studies Universiti Teknologi Mara Perlis Branch

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ABSTRACT

The 21st-century educational landscape operates within a persistent state of Volatility, Uncertainty, Complexity, and Ambiguity (VUCA), an environment significantly intensified by the COVID-19 pandemic and the rapid emergence of Generative Artificial Intelligence (Gen AI). This leads to the needs to place education under a proper purview to ensure its continuous progress. In doing so, this paper attempts to explore how these disruptive forces have transformed language learning and assessment, transitioned traditional classrooms into ubiquitous learning spaces where sources of knowledge are limitless, and how educators and students should manoeuvre in the VUCA and Gen AI contexts of teaching and learning. Grounded in three theoretical perspectives, this study examines the changing dynamic of learner autonomy, knowledge construction, and the challenges posed by excessive learner reliance on Gen AI tools. In Self-Determination Theory (SDT), the focus of the drive for learning involved three main needs namely, autonomy, competence and relatedness needs. Meanwhile, in Connectivism, learning demands the integration of diverse inputs and in constructivism, the learners need to build their own understanding based on the inputs. These three theories address on the needs for learners to take the centre stage in learning. The paper also argues that AI-generated submissions cast doubt on learners' true linguistic ability and traditional product-based assessments risk obsolescence. Hence, to preserve assessment authenticity and evaluate learner maturity, this paper advocates for a pedagogical shift toward process-oriented evaluations and oral defence mechanisms. Furthermore, it outlines essential educator competencies—including vision, adaptability, agility, holistic systems thinking, and practical wisdom—required to navigate future VUCA disruptions and ensure the enduring relevance of language education.

Keywords: VUCA Paradigm, Ubiquitous learning, Generative AI, Language Assessment, Language Education

INTRODUCTION

Volatility, Uncertainty, Complexity and Ambiguity (VUCA) are not just any ordinary four meaningless words. Instead, they reflect the very dimension of the state of the world where things are no always calm, certain, simple and clear (Bennett & Lemoine, 2014). The VUCA state of being can be witnessed in many if not all social dimension i.e. education, business, politics, healthcare etc.

The rapid and radical advancement of technology specifically information technology and artificial intelligence have been among the main instigators of this environment. However, at that point it was limitedly being used by only some interested intellectuals.

Nonetheless, when the world was plagued with the COVID-19, the new norms were introduced. As the pandemic was at its peak, what was invested by some interested quarters became a resolution as the Global Movement Restriction Order was introduced at every corner of the world. Consequently, more people were beginning to delve into this only lifeline.

Similarly, education was also not spared as the new norms of learning began to find its ways in education. Since the learning process needed to proceed regardless of the situation, ubiquitous learning where learning can be conducted anywhere and at any time became a temporary solution. This has led to a redefinition of classroom as classroom was no longer about sitting in the confinement of the four walls. Such approach, though was initially

a struggle to both the educators and learners, had gradually been embraced and accepted (Tarker, 2020). From that point onwards, education is no longer the same.

The changes in education appears to be endless as technology has taken a centre stage in both learning and teaching. This includes the emergence of Artificial Intelligence (AI) specifically Machine Learning. As a subset of Machine Learning, Generative Artificial Intelligence has rapidly and radically transformed the landscape of education. Though the impacts of VUCA factors have been extensive to education, this paper will focus only on language education. Specifically, it will discuss the change on language learning landscape, the evolution of language assessment, educators' competencies for the future and the future of language assessment and education.

Theoretical perspective in defining knowledge in language education

At its core, language education seeks to improve learners' language competency. In order to guide this learning process in the right direction, it is necessary to explore how knowledge is constructed and understood. To that end, this section explores three main theoretical perspectives that shape our approach to language education: Self-Determination Theory, Connectivism, and Constructivism.

First, Self-Determination Theory (SDT) describes the motivation state of the person. SDT looks at motivation in learning, in this case, language learning from three main needs namely, autonomy, competence and relatedness needs. In autonomy, learners learn better if they are free to control what and how they like to learn (Guay, 2022). If this is possible, their interest in the subject matter can influence their performance. In competence, learners would be more interested in the subject matter if their competency level is adequate. Meanwhile, relatedness connects all the inputs that they can gain from the sources to their needs. If they are comfortable and felt pleasant with the input, they are more likely to associate themselves with them (Deci & Ryan, 2012).

Second, Connectivism assumes that learning can be dynamic and prosper if the many sources were put together. Information should not be obtained from one single input. The teachers' role is not about the provider of knowledge, instead they should become the curators of lesson, designing how the learning should happen by taking into consideration resources from other sources. To a certain extent, the element of autonomy in self-determination theory can also be found in connectivism.

Finally, Constructivism argues that learners play a bigger role in the learning. They are supposed to construct their own understanding of the subject matter. In order to do so, they have to take charge of their learning. This theory is generally similar to the concept of SDT and Connectivism in that the role of the learners is much bigger.

The changing landscape of language learning

Traditionally, teacher was seen as the sole provider of information and knowledge. However, at the turn of the 21st century, learning is no longer a linear process and the sources of information and knowledge appears to be limitless. This was the result of the spurt of technology leading to the invention of world wide web and network. Such growth in technology has triggered the changes in education creating a VUCA environment to the education.

As technology continues to improve, Artificial Intelligence began to make way in the world. The uses of Artificial Intelligence in creating text, images, audio and video have been explored leading to the development of Generative AI (Gen AI). The application of Gen AI technology, although it has not yet become extensive, has led to significant changes that can be observed. Teachers begin to explore AI for teaching ideas, materials and information while learners begin to explore AI for solutions to the task assigned to them.

Since Generative AI is showing little sign of slowing, the impact on education specifically language education has been unavoidable. Traditional approach in teaching was considered obsolete as it was seen as somewhat irrelevant to this new and ever-changing environment (Minciu et al., 2025).

As resources are limitless, learners have become more autonomous enabling them to control what and how they are going to use this resources (Chiu, 2024). Compounded with existence of Gen AI tools, they need to be able to evaluate and make decision on how they would like the information to be used as the catalyst for their growth. However, the main issue is whether they have the ability to do so.

According to the SDT, learners need to have the right drive to actually work through this plethora of information and connect the dots among the multiple sources of information as learning, while according to the Connectivist, learning is supposed to be dynamic. Learners are supposed to include the new information they obtained from AI and combined with information from other sources (Siemens, 2005). However, this depends, of course, on their abilities to construct their understanding of the subject matter. The fear is when they actually do not have the right drive nor the ability to connect with other sources and construct their new understanding. Eventually, this can lead to the possibility of excessive reliance on AI as a solution.

Navigating the future of language assessment

The VUCA effects and the emergence of AI in education has challenged the approach of how language performance should be measured. The learners' reliance in AI for solutions to their exercise, take home assignments, and essay production has casted doubt on whether their submission is the product of their true ability and proficiency. For example, applying classroom homework as a form of formative assessment may no longer be practical as learners are able to tap in the assistance of AI to generate solutions to the questions (Chui, 2024). The same can be said to other forms of assessment. Hence, to assess the learners based on the input they produce may not be able to portray their true ability of their performance.

On that basis, how should educators measure learners' language ability? If educators are to accept the learners' product as a reflection of their ability, how can we ensure that they have the fundamental know how in producing the similar standard output when the tools are not available?

Among the approaches that can be considered would be to refocus the assessment on the whole process of developing the solutions. The assessment should be about how the solution is produced. This would enable the teacher to assess how the learners construct their solution which can exhibit the authenticity of the work as well as the maturity of the learners' solution production process.

For example, the teacher begins by assigning the learners with the task. Then, the learners are asked to conceptualise the task. The learners are allowed to seek relevant materials or search through AI. Next, learners are to develop a draft as a solution to the task. The draft has to be reviewed until the product is ready. This may require repeating the process of going through the materials. Once the learner feels that the draft is ready. An oral defence of the solution should be followed. Feedbacks received during the oral defence should be used to improve the draft. Once it is ready, the draft is then submitted for assessment.

Figure 1 Proposed process of assessing learners' production



Another approach that can be considered involved oral defence of the production. Similar to earlier suggestion, this approach enables the learners to justify the authenticity and maturity process of their work.

Although these approaches may work at this point, the VUCA situation of the world means that nothing is permanent. There may come new challenges in the future which may require different approaches. This shall be the test of whether language education can remain relevant.

Educators' competencies of the future

When I started my teaching in the early 90s, interconnected computer network (internet) was something new and not available to everyone. My former colleagues believed that as I was just coming fresh from the university, I should be the one handling a newly installed computer class for the school, teaching computer skills and internet. Despite not having a computer certification, I felt that it was a blessing that they allowed me to do so. This has become an eye-opener for me as I began to develop the traits of becoming more versatile in my approach to teaching and learning.

As I have gone through two main industrial revolutions, specifically Industrial Revolution 3.0 and Industrial Revolution 4.0, I have developed the belief that the transformation of education is an on-going process. Hence, the versatility of educators to embrace the past, the current and the future of education is an utmost important to ensure that educators remain relevant.

In ensuring the relevancy of educators, they should be able to address the demand of the VUCA world. How they are able to deal with the Volatile, Uncertain, Complex and Ambiguous World of teaching and learning can help them to manoeuvre their lesson and thus, remain relevant.

The Volatile, Uncertain, Complex and Ambiguous environment of the world has eventually led to disruptions of education as mentioned earlier. These sudden changes can happen anytime which eventually was proven when the world was suddenly plagued with the COVID-19.

To be able to address the situation, educators have to have a vision of what they want to achieve coupled with sense of adaptability and resilience to explore new approaches and solutions (Vulpe & Probac, 2021). Educators have to have a sense of agility and the ability to tolerate ambiguity and develop a sense of understanding of what needs to achieve. They also need to be clear of what needs to be done and be open for new ideas.

The following table displays the main traits that educators should have:

Table 1 VUCA and essential educators' traits

	Descriptions	Essential Educator's Traits
Volatility	Sudden and unstable shift in education	Vision, Adaptability and resilience
Uncertainty	Unable to predict what will be happening	Understanding, Agility and tolerance of ambiguity
Complexity	The nature of the language learning is intertwined	Holistic system thinking and Clarity
Ambiguity	There is no clear solution to the issue in education	Intellectual humility and practical wisdom

CONCLUSION

The intersection of the VUCA paradigm and Generative AI has permanently altered the trajectory of language education and assessment. As ubiquitous learning environments and AI tools dismantle traditional classroom boundaries and linear knowledge transfer, educators can no longer rely solely on product-based outputs to measure authentic language proficiency. Instead, language assessment must evolve to evaluate the maturity, transparency, and authenticity of the learner's production process through strategies such as process-oriented evaluations and oral defences.

Ultimately, the resilience of language education in an unpredictable future hinge on the versatility and competencies of educators. Navigating sudden shifts, ambiguities, and technological disruptions requires instructors to move beyond conventional teaching roles and actively embody vision, adaptability, agility, systems thinking, and intellectual humility. By anchoring pedagogical approaches in foundational learning

theories—Self-Determination Theory, Connectivism, and Constructivism—while remaining adaptable to continuous change, educators can successfully guide learners through the complexities of the VUCA world and safeguard the future relevance of language education.

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