National Language under VUCA and BANI World: The Predicament of Teaching Thai Language and Perspectives from Southern Thailand Educational Institutions

Radchadaporn Tantasit
School of Education and Liberal Arts, Walailak University
222 Thaiburi, Amphoe Thasala Nakhon Si Thammarat 80161, Thailand
E-mail address: radchadaporn.ta@wu.ac.th
ORCID: https://orcid.org/0009-0009-6386-9786

ABSTRACT

Aim. The challenge in Development in the education in Thailand is to enhance the efficacy of Thai language acquisition among students while simultaneously transforming the overall Thai language instructional system. this research has two research objectives which have been established. The primary goal is to investigate the viewpoints on Thai language instruction in the modern world. The second objective is to investigate whether teachers of varying ages hold similar or divergent viewpoints on different facets of Thai language instruction. These objectives are intended to provide information for policy proposals concerning Thai language education.

Methods. The research utilises a mixed-methods methodology, which involves the integration of quantitative surveys with school administrators (N = 80), teachers (N = 175), and students (N = 170). In addition, qualitative interviews (N = 15) were administered. All participants are situated in in Southern Thailand Educational Institutions.

Results. The research found unanimous agreement among the sample group. mostly falling under "strongly agree." All groups prioritise essential employment skills, intercultural communication, and interdisciplinary integration. Technology integration is crucial, yet viewpoints vary, especially among different age groups of teachers. Younger educators prioritise global communication and language evolution, while older educators prioritise technology adoption.

Conclusion. The research findings highlight the urgency of promoting Thai language skills in alignment with the evolving VUCA and BANI world. It suggests re-

vising the education system to equally support Thai language development alongside STEM subjects.

Keywords: VUCA-BANI world, Thai language teaching, national language policy, challenge of instructing the Thai language, Southern Thailand

Introduction

In the new normal times, the global scenario is undergoing substantial transformations that affect several facets of society, including education. This transition necessitates a reassessment of the techniques and strategies used in Thai language instruction in Thailand's educational establishments. As a result of the influence of volatile, uncertain, complex, and ambiguous (VUCA) (Roşca et al., 2023), and brittle, anxious, non-linear, and incomprehensible (BANI) world conditions (Lechner & Schlüter, 2023), although VUCA and BANI have subtle distinctions, both aim to focus on equipping learners with the skills and knowledge to effectively navigate through unforeseen and complicated situations (Asimiran et al., 2023; Kjaerum, 2022; Korsakova, 2020). Therefore, various educational institutions are integrating technology into instructional methodologies, adopting effective educational management policies, and prioritising the development of skills that are relevant (Waller, 2019). and there are curriculum designs that encourage the fundamental skills and abilities that students need for their professional and personal lives (Brylina et al., 2021). Thus, it is imperative for educational management in Thailand to place a strong emphasis on developing adaptability skills and giving priority to flexible learning approaches. This will enable students to effectively navigate the uncertainties that arise in the constantly evolving global landscape.

In the VUCA and BANI worlds, Thai language learning is evolving. As the national language, Thai plays a crucial role in the country's progress (Kanoksilapatham, 2023). Language proficiency is key for young people to thrive in a rapidly changing global environment (Chantarat & Chookhampaeng, 2023). Recent research highlights the importance of language skills for success in this shifting context. Thai language education must adapt to social needs and prepare students for global citizenship by fostering adaptable thinking, analytical skills, and the ability to navigate uncertainty.

Generally, the problems of Thai students' language skills are due to a shortage of Thai language teachers, leading to non-language teachers taking on Thai teaching roles. Outdated knowledge and a lack of development among Thai language teachers contribute to primary school students struggling with reading, writing, and literacy (Chanthao, 2018). Aligned with the main challenges faced by Thai language teachers in first-grade primary school classrooms were teaching methods, instructional planning and learning materials, and assessment and evaluation, according to research by Jatuporn Misekul and colleagues (2022). Studies also show that Thai language

teachers often rely on traditional lecturing, leading to student disengagement, and use summative assessments that do not cater to individual learning needs, resulting in a lack of critical thinking skills (Phiwhleung et al., 2020). Moreover, there are issues with managing the learning content of the Thai language core curriculum. This is because students struggle with the memorisation of letters and vowels as well as comprehending the principles of vowel sound alterations. These factors are crucial in causing mispronunciations, which in turn lead to challenges in reading aloud and writing. This is regarded as a significant and persistent problem in Thailand.

The purpose of this article is therefore to investigate and evaluate the viewpoints of various local stakeholders in Thai language education: school administrators, teachers, and students in educational institutions in Thailand. The objective is to analyse and suggest enhancements to the policy of teaching Thai that are in line with the BANI world. The article's primary research questions pertain to analysing the perspectives of the sample group. Firstly, which element of teaching the Thai language in the BANI world is the most significant? Secondly, Thai language teachers of different ages may have varying perspectives on adjusting Thai language teaching methodologies in the BANI world. The article will employ a mixed-methods research approach to develop a policy proposal for teaching Thai in the BANI World and strengthen government policies on Thai language teaching. This approach will analyse statistical survey data using Statistical Package for the Social Sciences (SPSS) and support qualitative research findings through in-depth interviews and focus group discussions. The research findings will inform the development of a policy proposal for teaching Thai in the BANI world. This proposal aims to strengthen government policies on Thai language education as a national language by aligning teaching methodologies with the demands of the BANI world, thus ensuring the effective preparation of Thai students for the challenges of modern life.

The Concept of the VUCA-BANI World and Learning Management in the Context of Global Society

The concepts of VUCA and BANI stem from distinct contexts yet share the common objective of addressing contemporary challenges. VUCA, initially developed by the U.S. military post-Cold War, serves as a framework to characterise the dynamic, unpredictable, complex, and ambiguous nature of the world, particularly concerning challenges presented by adversaries (Ramachandran, 2021). Consequently, the military was compelled to swiftly adapt its strategies and technologies to mitigate these evolving threats. The VUCA concept, initially introduced in the business world to describe volatility, uncertainty, complexity, and ambiguity during financial crises, later extended to global education (Forsythe et al., 2018). As technology advances,

the complexity of situations in the VUCA world increasingly impacts various systems (Bawany, 2016). The VUCA world is defined by four key elements: volatility, uncertainty, complexity, and ambiguity (Horney et al., 2010).

The BANI world is a recent concept introduced by educators and management specialists in response to the increasing complexity and rapid changes in the modern environment. BANI stands for brittle, anxious, nonlinear, and incomprehensible (Huicab-García, 2023). "Brittle" refers to systems' vulnerability to sudden failures under pressure, "anxious" reflects uncertainties in unpredictable surroundings, "nonlinear" describes the lack of expected patterns in events, and "incomprehensible" highlights the growing difficulty of understanding and analysing situations. The BANI world underscores the need for individuals and organisations to adapt and navigate through the complexities of today's rapidly evolving and uncertain environment (Sadyrina et al., 2016).

Both eras have seen ongoing progress, impacting the education system. The main challenge is rapid, uncertain changes driven by volatility, especially in technology, student demographics, and societal expectations. Technological advancements require quick adaptation while shifting demographics and evolving societal norms present challenges in addressing diverse learning needs (Gunawan & Widiati, 2019). Societal demands now require graduates to possess academic knowledge, critical thinking, creativity, adaptability, and resilience, prompting a shift to competency-based education. The uncertainty of workforce needs and economic conditions emphasises the importance of continuous learning and flexibility. Educational institutions must foster a growth mindset, promoting innovation and lifelong learning to navigate uncertainty and change (Zhou et al., 2020). Efficient management practices must align with modern demands (Pannipa et al., 2023). Additionally, Afiq Azri Mohd Ghani et al. (2022) identified the VUCA world as a key driver in the shift to online learning, which affects the emotional development of vulnerable students, especially those from low-income families.

The researcher explored studies on teaching and learning management relevant to the modern societal context and found that within the VUCA (volatile, uncertain, complex, ambiguous) world, teaching management must focus on competency development, as highlighted in various studies (Mukhlisah, 2023). The VUCA framework stresses the importance of diverse knowledge and adaptability to unforeseen circumstances in organisational management (Dawson, 2023). Regalado's 2012 research revealed that technology is a key driver of educational transformation, urging teachers to adapt to new learning methods that facilitate easier access to information. Among others, this has led to the rise of online education platforms like MOOCs (Regalado, 2013).

Additionally, fostering a culture of flexibility is crucial for adapting to changes in educational management (Bennett & Lemoine, 2014). Ricardo Swain-Oropeza and José Renteria-Salcedo's 2019 Tec21 education model emphasises emotional

intelligence, interdisciplinary collaboration, and creative technology use in response to global challenges (Swain-Oropeza & Renteria-Salcedo, 2019). Zhou's 2020 research highlighted technology's role in enhancing workforce adaptability, with tools like video conferencing and virtual reality platforms supporting global flexibility and personalised evaluation systems (Zhou et al., 2020). These findings align with Sharon Stein (2021), which advocates for educational policies prioritising critical thinking, emotional intelligence, and wisdom.

In the era of a volatile, uncertain, complex, and ambiguous world, educators should prioritise the significance of continuous learning throughout one's life and modify their teaching and learning methods to incorporate new dimensions. These dimensions include utilising multimedia (Hypermedia), promoting self-directed learning or exploration, adopting learner-centred learning approaches, implementing personalised learning strategies, and incorporating entertainment-focused learning techniques (Nikolovic & Milovanovic, 2021). In addition, scholars have suggested of educational technologies that facilitate learning, such as YouTube, podcasts, Coursera, Khan Academy, Ted Talks, MOOCs, games, Twitter (Kadijevich & Gutvajn, 2021), and virtual reality (Proykova, 2021). Shane Dawson was discovered through research conducted in 2023. The paper discusses the importance of embracing uncertainty and complexity to promote teaching and learning innovation in higher education. It highlights the use generative AI, like ChatGPT, on education, highlighting the need for increased scholarship and innovation in integrating AI into educational practices (Dawson, 2023). The results of numerous research studies clearly indicate, as summarised in Zhou's research, that many countries have developed and utilised educational systems to enhance learning effectiveness and improve the quality of education for learners. These countries include the United States, the United Kingdom, Australia, and New Zealand (Zhou et al., 2020).

The COVID-19 pandemic in 2020 led to nationwide school closures and significant changes in instructional methods. The Chinese government launched the School's Out, But Class's On program to address these challenges, creating the largest online education platform, involving 270 million students and nearly 20 million teachers. This initiative has transformed teaching and learning models globally, emphasising advanced information technology to enhance education (Zhou et al., 2020). In Malaysia, research highlights the impact of the VUCA world on learners' cognitive skills, with school leaders playing a vital role in improving outcomes, motivating teachers, and aligning education with curriculum standards to raise quality (Nuankaew et al., 2023). However, more research is needed to address the specific challenges of teaching the Thai language in the VUCA and BANT world, which results in educational disparities. Current studies focus mainly on teaching methodologies and technology use, underscoring the need for further exploration into modern approaches to Thai language instruction.

Thai as National Language and Instructing the Thai Language in Contemporary Thailand

Research on Thai language instruction emphasises the need to adapt education to changing sociolinguistic conditions. Studies highlight the importance of integrating Global Englishes (GE) frameworks into Thai higher education to enhance students' intercultural communication skills (Miao & Ambele, 2023). Additionally, research on Thai language instruction in primary schools reveals challenges in students' grammatical and social-communicative skills, suggesting the need for program improvements. A study in Kalasin Province, Thailand, found communication difficulties among elementary students, with a mean score of 4.32 (SD = 0.63) for grammar and social communication, and 4.23 (SD = 0.62) for teachers' instructional management, particularly concerning the VUCA world challenges (Chantarat & Chookhampaeng, 2023).

Most research conducted in Thailand examines the impact of the VUCA and BANI world on education, particularly emphasising the application of technology to address emerging challenges. The COVID-19 pandemic has expedited the digital transformation of the education sector, influencing learning standards and making it essential to utilise data analytics and machine learning to evaluate learning outcomes post-pandemic. The COVID-19 pandemic disrupted global education, leading to "learning loss," a decline in students' academic abilities due to educational interruptions. Studies from India, Ghana, Jordan, and Germany highlight challenges like transitioning to remote learning, reduced social interaction, concerns about education quality, and increased stress (Gottschalk et al., 2023; Moh et al., 2023; Singh et al., 2020; Tanta & Swastikasari, 2023; Tetteh et al., 2023). Efforts to mitigate these impacts include online teaching strategies, enhanced instructor support, and addressing digital inequalities.

Atthapong Phiwhleung et al. (2020) identifies factors hindering language learning, such as the lack of curriculum alignment, monotonous teaching methods, and insufficient assessment practices in Thai language education. Teachers' reliance on textbook lectures and limited use of diverse assessment tools result in students excelling at memorisation rather than critical thinking. Additionally, research shows that many teachers lack time for professional development, and inadequate media use fails to engage students.

Jatuporn Misekul et al. (2022) discusse challenges in Thai language teaching, particularly in media use, lesson planning, and assessment. Teachers with 6–10 years or over 15 years of experience face more significant difficulties, possibly due to over-familiarity with technology. Rattana Chanthao (2018) highlights that rural Thai teachers' insufficient literacy skills affect student outcomes. Improving teacher training in rural areas is essential. Previous research has focused on technology to address educational issues, particularly Thai teaching. Studies suggest prioritising Thai language instruction for better academic outcomes and socioeconomic progress, but more research is needed on management strategies specific to Thai language teaching. This article examines the perspectives of educators and students on adapting teaching methods and proposes future policies.

Methodology

Research Design

This research aims to identify differences or similarities in the perspectives of teachers from various age groups regarding prioritising specific aspects of Thai language teaching in the VUCA and BANI world and to propose potential policy recommendations for Thai language education. A mixed methods approach combines quantitative and qualitative data to comprehensively address the research question (Creswell & Creswell, 2017). Quantitative data were collected to analyse the viewpoints of the sample groups, while qualitative data were used to support the findings.

Research Scope and Sample Group

The research sample includes school administrators, students, and Thai language teachers, selected through simple random sampling. Data collection involved surveys and focus group discussions for 80 school administrators, surveys and personal interviews for 175 teachers, and surveys and interviews for 170 students. Teachers' age groups were categorised according to Erik Erikson's psychosocial development theory (Erikson, 1950).

Data Collection and Research Instruments

The research was conducted in two phases: the first focused on developing research instruments, and the second on data collection. The researchers reviewed relevant concepts in the tool development phase to refine the questionnaires and interview guides. Data collection occurred over four weeks, following approval from the Institutional Review Board (IRB), to ensure ethical standards and minimise potential harm to participants. This study used two research instruments, questionnaires and interviews, to gather quantitative and qualitative data from school administrators, Thai language teachers, and students in Southern Thailand. The questionnaires were created on Google Forms and distributed online via Facebook groups for Thai language teachers and educational networks. The 55-item rating scale questionnaire covered 11 topics (see Tables 1 and 2) and was evaluated by three experts using the Item Objective Congruence Index (IOC) (Rovinelli & Hambleton, 1976). Cronbach's alpha reliability test yielded values above 0.67, confirming satisfactory reliability.

Semi-structured interviews with 30 questions were conducted with 15 randomly selected participants: 5 school administrators, five teachers, and five students. Interviews were held in Thai, lasting 20 minutes for individuals and 45 minutes for group discussions. Data was coded as Is (student interviews), It (teacher interviews), and FA (focus group of administrators) to ensure confidentiality.

Data Analysis

The researchers conducted an analysis of two types of data: quantitative data analysis and qualitative data analysis. For quantitative data analysis, the researchers examined data obtained from questionnaires and employed descriptive statistics, such as calculating the mean ($\overline{x}$) and standard deviation (SD), utilising the SPSS software. The researchers utilised content analysis techniques for the qualitative data analysis.

Results

The research explores whether school administrators, teachers, and students have different attitudes toward Thai language teaching and learning in the modern world. The analysis shows that the sample groups share similar views, as indicated by the average scores on the Likert-type scale, ranging from 3.41 to 4.00, reflecting "strongly agree." The divergence of opinions is minimal, as shown in Table 1.

Table 1

Consistent perspectives on instructing the Thai language in the modern world of the sample groups

Dimensions	Items	school administrators (N=80)	teachers (N=175)	Students (N=170)
		Mean (SD)	Mean (SD)	Mean (SD)
Emphasising necessary skills for future employment.	Soft skills are important for work.	4.00 (.00)	3.95 (.22)	4.00 (.00)
	Non-violent communication is essential for teamwork.	4.00 (.00)	4.00 (.00)	4.00 (.00)
	Analytical thinking skills are crucial for quality work.	4.00 (.00)	4.00 (.00)	4.00 (.00)
	Problem-solving skills are vital, particularly for complex issues.	4.00 (.00)	4.00 (.00)	4.00 (.00)
	Communication skills are key for leadership development.	4.00 (.00)	4.00 (.00)	4.00 (.00)
		4.00 (0.00)	3.99 0.04	4.00 0.00
	Emphasising cultural diversity.	4.00 (.00)	3.80 (.40)	3.8 (.31)
	Linking content related to culture.	3.99 (.11)	3.93 (.25)	3.38 (.49)
	Focus on learning about culture, beliefs, and communication	4.00 (.00)	3.93 (.26)	3.50 (.501)

Dimensions	Items	school administrators (N=80)	teachers (N=175)	Students (N=170)
		Mean (SD)	Mean (SD)	Mean (SD)
Inter-cultural communication.	Create a diverse cultural environment.	3.94 (.24)	3.76 (.43)	3.57 (.497)
	Offer real-life opportunities for cross-cultural communication.	4.00 (.00)	3.86 (.35)	3.81 (.393)
		3.98 (.06)	3.98 (.05)	3.98 (.06)
	Teach the Thai language alongside English.	3.94 (.24)	3.78 (.42)	3.91 (.29)
	Link Thai with English from simple to complex.	3.98 (.16)	3.94 (.24)	3.95 (.23)
Communicating in international contexts.	Create a bilingual learning environment for the classroom.	3.53 (.64)	3.54 (.68)	3.69 (.55)
	Emphasise activities to practice language skills in both Thai and English.	3.98 (.22)	3.87 (.49)	3.96 (.27)
	Bilingual digital media promotes Thai students' optimal English proficiency.	3.95 (.19)	3.80 (.35)	3.96 (.11)
		4.00 (.00)	3.90 (.44)	4.00 (.00)
Interdisciplinary integration.	Assign tasks for students to solve problems or create work.	4.00 (.00)	3.90 (.44)	4.00 (.00)
	Interdisciplinary integration enhances analytical thinking.	3.98 (.16)	3.97 (.17)	3.99 (.08)
	Emphasise interdisciplinary work.	4.00 (.00)	4.00 (.00)	4.00 (.00)
	Team teaching connects learners to the essence of integration.	3.95 (.22)	3.95 (.21)	3.98 (.15)
	Technology supports integrated teaching.	4.00 (.00)	4.00 (.00)	4.00 (.00)
		3.99 (.07)	3.96 (.10)	3.99 (.04)

Note. N+425.
Source. Own research.

The averages in the table indicate that the sample group has very similar opinions on the fourth main point. First, when teaching the Thai language in the modern world, teachers should focus on essential skills for future work. These skills include soft skills, peaceful communication skills, data analysis skills, analytical thinking, and problem-solving skills ($\overline{x}$ = 4.00, 3.99, 4.00). The qualitative research findings are consistent. ("Work

skills are highly important for teaching Thai in the modern world because we should focus on preparing students to effectively use the Thai language in the workplace. Skills such as communication, collaboration, and time management all impact work success." [FA5]) Moreover, the administrators also believe that developing work skills in Thai language teaching will help students connect with the outside world and apply their knowledge in real life. ("Soft skills help learners navigate the complexities of the modern world effectively and adapt to the world of work by collaborating well with others, which is extremely important" [FA]). It is in accordance with the viewpoints of both the teachers and students. ("Work skills will help students succeed in the future, both academically and professionally." [IT1]), („I believe these soft skills are extremely important for all students because they help us grow and achieve greater success in life. Therefore, I strive to continuously develop these skills because I don't want to fall behind" [IS2]).

At the same time, Thai language teachers should prioritise communication in an international context. They should encourage linking or comparing the Thai and English languages, starting from simple to more complex levels. Classroom activities should promote students' use of the English language, and teachers should use bilingual digital media in Thai language classes ($\overline{x}$=4.00, 3.90, 4.00). The majority of Thai language instructors hold a favourable viewpoint regarding the instruction of Thai language using the English language. They perceive it as important for contemporary pupils, but they require assistance from pertinent organisations and actively pursue chances for personal growth. ("Teaching Thai in English is a significant challenge for us, but it is worthwhile because it helps improve our own English skills and is also essential for contemporary students." [IT1]) (I agree with teaching Thai alongside English because it helps students develop skills in both languages, understand cultures and prepare for the future. However, in Thailand, it is still challenging. First, we must prioritise improving Thai language teachers' English skills." [FA]) Nevertheless, several factions of Thai language instructors continue to express apprehension and maintain divergent viewpoints. This matter underscores the variety of perspectives and difficulties encountered in the implementation of the policy to educate Thai in English. ("I don't think I'm ready to teach Thai in English. I'm concerned that students won't understand, and I don't have time to improve my English skills because teachers already have a lot of work these days." [IT4]) The students that possess a high level of proficiency in the English language concur. ("That's good. Like international students, we will improve our English." [IS1]) Regarding students who lack proficiency in English, their viewpoints differ. ("If that's the case, it will be tough for us because we won't understand the lessons. I want the teachers to use simple translations so that we can understand the material." [IS3])

Third, teachers should adopt an integrative approach to teaching Thai language by incorporating it into various subjects, implementing activities that highlight the practical application of knowledge from different disciplines, and collaborating with multiple teachers to enhance students' comprehension of integration principles. Teachers should employ technology to augment their instructional approaches ($\overline{x}$=3.99, 3.96, 3.99).

The sample group endorse the implementation of integrated Thai language instruction due to their belief that it enhances students' proficiency in Thai, facilitates comprehension of content within its authentic context, fosters the development of analytical thinking and problem-solving abilities, and equips students for the demands of the 21st century (Students who learn Thai through integrated instruction often achieve good academic results, display creativity, are confident in expressing themselves, and can apply their knowledge in real life, according to my experience [IT5]). Nevertheless, certain school principals express apprehension regarding the preparedness of teachers, instructional materials, and the evaluation of learning results. (I am well aware of the challenges we are facing, such as teacher readiness, instructional materials, and the assessment of learning outcomes. Therefore, I am committed to developing teachers." [FA]) The students' perspective is that ("I recommend a blended approach to teaching Thai, combining integrated and traditional methods. Integrated teaching makes learning engaging but challenging for some students, while traditional teaching is easy to understand but dull." [IS5]). Fourth, it has been to emphasise cross-cultural communication skills, focusing on creating a multicultural learning environment, integrating culturally relevant content, and promoting learners' ability to communicate across cultures in real-life situations ($\overline{x}$=3.98, 3.98, 3.98), respectively. Other opinions: The sample group holds a variety of perspectives, as indicated in Table 2.

Table 2

Inconsistent perspectives on instructing the Thai language in the modern world of the sample groups

Dimensions	**Items**	**school administrators (N=80)**	**teachers (N=175)**	**Students (N=170)**
		Mean (SD)	**Mean (SD)**	**Mean (SD)**
Integrating technology into the classroom teaching of the Thai language.	Technology is essential for teaching the Thai language.	4.00 (.00)	3.92 (.26)	4.00 (.00)
	An online platform efficiently improves language proficiency.	3.15 (.36)	3.08 (.27)	3.07 (.28)
	A fun, engaging online platform for teaching Thai.	4.00 (.00)	4.00 (.00)	4.00 (.00)
	Video clips effectively stimulate the learning process.	3.09 (.28)	3.10 (.30)	3.11 (.32)
	The application successfully engages learners' interest.	4.00 (.00)	4.00 (.00)	4.00 (.00)
		3.65 (.09)	3.62 (0.10)	3.63 (.08)

Dimensions	Items	school administrators (N=80)	teachers (N=175)	Students (N=170)
		Mean (SD)	Mean (SD)	Mean (SD)
Adapting amidst changes.	Emphasising adaptation to rapid changes.	3.99 (.11)	3.96 (.20)	3.45 (.779)
	Focus on content related to current situational changes.	3.99 (.11)	3.87 (.428)	4.00 (.00)
	Emphasise learners' adaptability skills.	3.91 (.40)	3.61 (.755)	3.40 (.811)
	Provide opportunities for diverse ways of working.	3.96 (.25)	3.62 (.754)	4.00 (.00)
	Creating learning experiences amidst environments that require adaptation.	3.96 (.25)	3.61 (.755)	3.36 (.88)
		3.96 (0.20)	3.73 (.51)	3.64 (.47)
Skills for learning.	Organise activities to stimulate thinking and create challenging situations.	4.00 (.00)	4.00 (.00)	4.00 (.00)
	Let students choose their preferred learning styles.	3.94 (.24)	3.88 (.33)	3.91 (.285)
	Technology helps stimulate effective learning skills.	3.78 (.42)	3.79 (.409)	3.83 (.373)
	A lively, enjoyable learning environment fosters good learning skills.	4.00 (.00)	4.00 (.00)	4.00 (.00)
	Creative, developmental feedback fosters good learning skills in students.	4.00 (.00)	4.00 (.00)	4.00 (.00)
		3.94 (.09)	3.92 (.18)	3.95 (.10)
Language change.	Contemporary content aligns with language changes.	3.30 (.77)	3.17 (.88)	3.57 (.68)
	Digital media helps understand language changes effectively.	3.90 (.30)	3.65 (.48)	3.88 (.32)
	Create practical scenarios for language practice.	4.00 (.00)	3.83 (.37)	4.00 (.00)
	Analyse current language to understand changes.	3.98 (.16)	3.71 (.453)	3.98 (.17)
	Technology is crucial for language change.	3.88 (.43)	3.54 (.76)	3.86 (.41)
		3.81 (.23)	3.59 (.46)	3.86 (.21)

Dimensions	Items	school administrators (N=80)	teachers (N=175)	Students (N=170)
		Mean (SD)	Mean (SD)	Mean (SD)
The use of online courses and learning resources.	Teaching using various online programmes.	3.94 (.24)	3.78 (.42)	3.91 (.29)
	Online courses allow learning anytime, anywhere.	3.98 (.16)	3.87 (.34)	3.98 (.15)
	Online resources create valuable, enjoyable learning experiences.	3.91 (.28)	3.78 (.42)	3.98 (.15)
	Online courses are flexible and have modern learning assessment systems.	3.98 (.16)	3.82 (.39)	3.96 (.19)
	Online courses create a strong learning community for students.	3.93 (.27)	3.70 (.43)	3.95 .21
		3.95 (.12)	3.80 (.35)	3.96 (.27)
The use of instructional media.	Currently, media differs from the past.	4.00 (.00)	3.93 (.25)	4.00 (.00)
	Digital media stimulates learners' interest the most.	3.88 (.37)	3.73 (.61)	3.98 (.13)
	Teaching media should be modern and relevant.	3.91 (.28)	3.92 (.27)	3.94 (.24)
	Prioritise digital media over handmade.	4.00 (.00)	4.00 (.00)	4.00 (.00)
	Use media that helps understand modern Thai culture and society.	3.95 (.21)	3.95 (.21)	3.98 (.15)
		3.92 (.14)	3.87 (.26)	3.97 (.09)
Assessing and evaluating students.	Emphasising assessment for development rather than judgement.	3.75 (.74)	3.68 (.75)	3.63 (.91)
	Currently, assessment should be done using technology.	3.86 (.41)	3.79 (.46)	3.90 (.36)
	Focus on measurement, flexibility, and applying knowledge at work.	3.91 (.28)	3.85 (.62)	3.80 (.49)
	Emphasise measuring problem-solving and analytical skills in complex situations.	3.80 (.49)	3.83 (.38)	3.92 (.276)
	Emphasising individual student assessment.	3.85 (.53)	3.57 (.83)	2.95 (.92)

Dimensions	Items	school administrators (N=80)	teachers (N=175)	Students (N=170)
		Mean (SD)	Mean (SD)	Mean (SD)
		3.83 (.22)	3.74 (.34)	3.67 (.29)

Note. N=435.
Source. Own research.

There's a strong consensus on revamping Thai language education for a rapidly changing world. Both school administrators ($\overline{x}$=3.96) and students ($\overline{x}$=3.95) prioritise adapting instruction to societal shifts. Administrators view online learning platforms as a crucial tool that aligns with students' preferences for engaging media ($\overline{x}$=3.97). Developing well-rounded learning skills ($\overline{x}$=3.94) is another key focus for both groups. This includes creating stimulating learning environments, offering students choices in learning formats, and providing constructive feedback. They further emphasise the importance of media integration for educational purposes ($\overline{x}$=3.85). They encourage teachers to use formative assessment to guide student development, focusing on assessing students' adaptability to change and technology utilisation ($\overline{x}$=3.85). It is also crucial to tailor curriculum development to these adaptations ($\overline{x}$= 3.81). The average score of 3.65 views technology integration as a supplementary tool, despite its importance. Overall, this highlights a collaborative effort to equip Thai language learners with the adaptability and skills needed to thrive in a dynamic world. Thai language instructors recognise the need to revamp instructional methods for the modern world. Their focus prioritises developing students' strong learning skills (average score: 3.92), followed by integrating language conversion techniques and educational tools ($\overline{x}$=3.87). They also view the utilisation of online resources ($\overline{x}$=3.80) and effective assessment methods ($\overline{x}$=3.74) as crucial. Adaptability to societal changes ($\overline{x}$=3.73) is a key element, while technology integration comes in as a supplementary tool ($\overline{x}$=3.62). This highlights a shift towards equipping students with the adaptability and skills to navigate an ever-changing world.

Students prioritise engaging learning media ($\overline{x}$=3.97) in Thai language instruction for the modern world, particularly online resources ($\overline{x}$=3.96).This highlights a desire for interactive and accessible learning. Developing strong learning skills ($\overline{x}$=3.95) and language conversion techniques ($\overline{x}$=3.86) are also important. Interestingly, assessment and evaluation ($\overline{x}$=3.67) rank lower, followed by adaptability to change ($\overline{x}$=3.64) and technology use ($\overline{x}$=3.63). Figure 1 suggests that the age of the instructor may influence these preferences. This data provides valuable insights for tailoring Thai language education to better engage students in the modern world.

Figure 1

The average opinions of teachers of different ages

	A	B	C	D	E	F	G	H	I	J	K
25-35	3.59	4.00	3.72	3.98	3.93	3.68	3.87	3.88	4.00	3.91	3.78
36-45	3.63	3.99	3.77	3.99	3.92	3.58	3.85	3.78	3.96	3.90	3.75
≥46	3.65	4.00	3.69	3.98	3.90	3.46	3.62	3.65	3.93	3.90	3.65

Note. N=175.

Source. Own research.

The survey results (Image 1) reveal interesting variations in how Thai language teachers across different age groups view teaching methods. While all teachers prioritise essential employment skills ($\bar{x}$=12.19), there are some differing opinions on certain aspects. Younger teachers (25–35) and older teachers (46+) share similar average scores ($\bar{x}$=4.00), while mid-career teachers (36–45) have slightly different priorities ($\bar{x}$=0.11). Interdisciplinary Teaching: Younger teachers place a higher value on this compared to mid-career and senior teachers ($\bar{x}$=0.14–0.17). Cultural Communication, Learning Skills, and Teaching Media: All age groups show high agreement ($\bar{x}$=0.01). Online Resources: Younger teachers show greater enthusiasm compared to older teachers ($\bar{x}$=0.23). Adaptability and Assessment: All age groups prioritise these equally ($\bar{x}$=11.8). Significant differences emerge in three areas: Global Communication and Changes in Thai Language: Younger teachers value these more ($\bar{x}$=3.88, 3.68) compared to technology use ($\bar{x}$=3.59). Technology Integration: Older teachers place the most importance on technology ($\bar{x}$=3.65), followed by global communication ($\bar{x}$=3.65) and language changes. Mid-Career Teachers: Take a middle ground on these three aspects.

These findings suggest a generational shift in teaching priorities. Younger teachers value preparing students for a globalised world ("The world has changed from what it used to be. It's not that technology isn't important; it is very important. However, to help Thai children step into the global world, we must focus on training them

to use English alongside Thai." [IT]), ("We are modern teachers, all proficient in using technology. Therefore, using English alongside Thai is considered a new and challenging aspect for Thai teachers." [IT5]), Additionally, the research findings include the interesting opinion of one teacher. ("Currently, technology alone is not enough. The personalities of Thai language teachers today should also change. Modern Thai language teachers must be contemporary and dynamic, not outdated, as personalities can effectively attract students." [IT3) while older teachers lean towards technology integration. ("Technology is very important these days. Students will be more interested in learning if the lesson incorporates technology." [IT1]). This data can inform strategies to bridge these gaps and create a more unified vision for Thai language education. Most Thai students prefer using technology for teaching Thai due to its enjoyable and captivating nature. Students perceive technology as a means to improve the effectiveness of Thai language learning and advocate for teachers to incorporate a broader range of contemporary Thai teaching resources. ("I like it because it's more fun and interesting than traditional learning methods." [IS1], "I want teachers to use a wider variety of modern technology-based teaching resources for Thai language instruction." [IS4])

Discussion

This research addresses a key issue in Thai language education: balancing 21st-century skills with a strong foundation in the Thai language. Findings show that respondents prioritise work-related skills, aligning with the National Education Plan (2017–2036), which aims to develop learners with 21st-century skills based on the 3Rs (reading, writing, arithmetic) and 8Cs. The 3Rs focus on basic literacy and numeracy, while the 8Cs include critical thinking, creativity, collaboration, communication, media literacy, ICT literacy, career skills, and compassion (Sakonnakhom Lekathikan Sapha Kan Sueksa, 2017). These are defined as essential characteristics for Thai children in the 21st century.

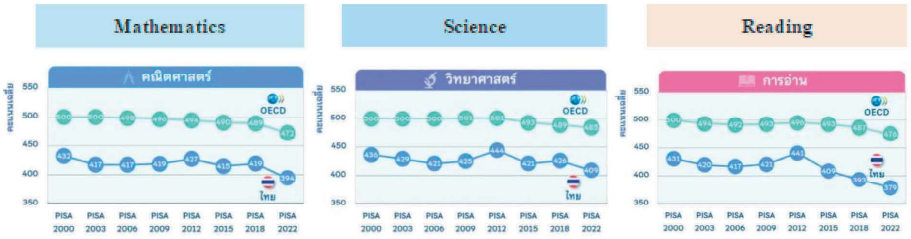
However, the strategy for human resource production and development, research, and innovation to enhance national competitiveness, as specified in the current version of the National Education Plan, aims to promote integrated learning of specialised knowledge in science, engineering technology, mathematics (STEM), and English language skills development. This contradicts the stated objective of the 3Rs, which aims for learners to be able to read, write, and perform arithmetic. The government has yet to prioritise the development of Thai language skills among students, which is essential both for establishing a solid educational foundation for Thai learners and emphasis of its status as national language.

Unfortunately, the existing data has shown negative implications for Thai students' academic achievement following the criteria of Programme for International Student Assessment (PISA). That is Thai students consistently score lower than students from

all other Asian economies, including Singapore, Macao-China, China (including Beijing, Shanghai, Jiangsu, and Zhejiang), Hong Kong SAR, and Japan. The PISA test, administered in August 2022 by the Institute for the Promotion of Teaching Science and Technology (IPST), assessed 8,495 students from 279 schools across Thailand. The 2018 PISA results showed lower average scores for Thailand in reading ($\overline{x}$=379), mathematics ($\overline{x}$=394), and science ($\overline{x}$=409) (Technology, 2022). Moreover, compared to the 2018 data, the average scores of OECD member countries in all three areas showed a decline. If this trend continues unaddressed, it suggests a sustained decline in academic performance, as illustrated in Figure 2. This underscores the need for immediate action to address the issue.

Figure 2

PISA 2022 assessment results for Thailand



Note. The text to the left of the numbers is "average score."
Source. Sathaban Kan Son Witayasat Lae Theknoloyi, 2023 (CC-BY)

Thailand's low PISA scores highlight the urgency of improving Thai language skills. because strong Thai language proficiency is the foundation for effectively learning other languages. In education policy, the government and Ministry of Education need to prioritise Thai language development alongside STEM subjects.

The second observation, based on Thailand's National Language Strategy (2018–2024), highlights the alignment between research on language skills and the strategy's focus on language for sustainable peace. This suggests that the sample groups prioritise communication skills to foster collaboration. The Royal Society Commission recommends using the mother tongue as a foundation for learning other languages and promoting bilingual education by integrating the native language and Thai. However, this policy creates ambiguity for students in choosing between the official and native languages, affecting their reading, writing, analysis, and problem-solving abilities.

The 2022 nationwide Reading Test (RT) showed a mean reading proficiency of 79.93% among Thai students, while the National Test (NT) in the Thai language had an average score of 55.86% (Office of the Basic Education Commission, 2023). To adapt to the volatile, uncertain, complex, and ambiguous (VUCA) world, Thailand should implement a bilingual education policy that integrates Thai and English rather than promoting local

languages alongside Thai. Any changes should be carefully evaluated with input from education experts to ensure their relevance to Thailand's educational needs.

The Basic Education Commission should also revise the Thai language curriculum to align with the BANI world and the country's 4.0 development plan, aiming to produce global citizens with 21st-century skills. The current curriculum, based on the 2008 framework, may not address modern challenges due to shifts in globalisation, technology, and socio-political factors. To improve alignment, the curriculum should integrate advancements in 11 domains, including technology, employability skills, cross-cultural communication, language adaptation, global communication, online resources, interdisciplinary instruction, and innovative assessment methods. This would strengthen the effectiveness of Thailand's Thai language education policy.

Existing teaching methods must be revised to integrate the Thai language into the modern world. Emphasising the teaching strategies identified across 11 aspects in this research is crucial. Many of these align with Thai language teaching methods in U.S. Buddhist temples, where technology is used to teach Thai in various settings. This includes prioritising interactive learning, fostering creative problem-solving, and incorporating educational apps alongside traditional methods. These strategies are consistent with research by Andrea Lesková et al. (2023), which highlights the importance of adapting educational policies to modern needs. The authors advocate for cultivating digital intelligence (EQ) alongside traditional intelligence (IQ), preparing individuals for the complexities of contemporary society.

The proposed policies aim to equip individuals with cognitive, technical, metacognitive, and socio-emotional skills necessary for the digital era while ensuring a balance between technology use and mental health. Emphasising values, critical thinking, and digital literacy will enable individuals to navigate the fast-paced technological advancements of the 21st century (Lesková et al., 2023). The COVID-19 pandemic has exacerbated learning loss, particularly in Thai language proficiency, highlighting the need for policies to enhance Thai language education. This includes investments in teacher training, curriculum development, and infrastructure. Early language intervention programs and technology integration can further improve learning outcomes.

Promoting intercultural communication, critical thinking, and lifelong learning will equip students with the resilience, adaptability, and global citizenship skills required in the VUCA/BANI world. Investing in Thai language education will empower students to succeed in an increasingly interconnected and uncertain future.

Conclusion

This research examined the attitudes of school administrators, teachers, and students towards Thai language education in the modern world. The analysis revealed broad agreement across all groups, with average values between 3.41 and 4.00 on a Likert

scale. The findings highlight a shared priority to adapt Thai language teaching methods, emphasising essential skills for future employment, including soft skills, communication, analytical thinking, leadership, and intercultural communication. There is also a focus on interdisciplinary integration and teaching Thai in international contexts.

The groups differ in some areas. School administrators prioritise adapting to societal changes and online learning, while teachers focus on refining methods, integrating technology, and assessing students' adaptability. Students emphasise learning media, language transformation, and adaptability. Age influences teachers' views: younger teachers prioritise global communication and linguistic evolution, while older teachers focus on technology. Mid-career teachers show a balanced approach.

In conclusion, the research underscores the need to adapt Thai language teaching to contemporary challenges, considering the perspectives of all local stakeholders in shaping national policy.

REFERENCES

Asimiran, S., Abdullah, A., & Alias, S. N. (2023). VUCA world: The commitment of teacher organisation and student outcome in Malaysian primary school. *International Journal of Academic Research in Business & Social Sciences*, *13*(5), 1475–1487. https://doi.org/10.6007/IJARBSS/v13-i5/16551

Bennett, N., & Lemoine, J. (2014). What VUCA really means for you. *Harvard business review*, *92*(1/2), Article 1126.

Chanthao, R. (2018). Thai language teaching problems and teacher development of elementary schools in rural Thailand. *Advances in Natural and Applied Sciences*, *12*(1), 1–5. https://doi.org/10.22587/anas.2018.12.1.1

Phiwhleung, A., Jorungphanthu, B., & Siriwatthanathakul, N. (2020). Saphap Kan Chatkan Rianru Khong Khru Phasa Thai: Naothang Kan Kae Panha [Thai language teachers' learning management conditions: Solutions for problem solving]. *Journal of Education Mahamakut University Faculty of Education*, *8*(2), 195–211.

Bawany, S. (2016). Leading in a VUCA business environment. *Leadership Excellence Essentials*, *33*(7), 39–40.

Brylina, I. V., Okonskaya, N. K., Ermakov, M. A., & Brylin, A. V. (2021). Education of the future in the conditions of VUCA world. In I. Kovalev & A. Voroshilova (Eds.), *Economic and Social Trends for Sustainability of Modern Society (ICEST-III 2022)* (pp. 1372–1380). The European Proceedings of Social and Behavioural Sciences. https://doi.org/10.15405/epsbs.2021.09.02.154

Chantarat, T., & Chookhampaeng, Ch. (2023). Problems with teaching and learning Thai language for communication competency for elementary school students. *Journal of educational issues*, *9*(1), 36–48. https://doi.org/10.5296/jei.v9i1.20524

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). SAGE Publications Asia-Pacific Pte. Ltd.

Dawson, S. (2023). Embracing Uncertainty and Complexity to Promote Teaching and Learning Innovation. *Pacific Journal of Technology Enhanced Learning*, *5*(1), 15–16. http://dx.doi.org/10.24135/pjtel.v5i1.171

Erikson, E. H. (1950). *Childhood and Society*. WW Norton & Co, Inc.

Forsythe, G., Kuhla, K., & Rice, D. (2018). Can you do VUCA? 5 *Key Strategies for Success. Chief Executive*, *294*, 41–50.

Ghani, A. A. M., Pek, L. S., Mee, R. W. M., Ismail, M. R., Nabila, U., Tazli, A., & Yob, F. S. C. (2022). Impact of VUCA world on children's emotional development during online learning. *International Journal of Public Health Science*, *11*(3), 800–807. http://dx.doi.org/10.11591/ijphs.v11i3.21405

Gottschalk, M., Milch, P. M., Albert, Ch., Werwick, K., Braun-Dullaeus, R. C., & Stieger, Ph. (2023). Medical education during the Covid-19 pandemic long-term experiences of german clinical medical students. *PLoS ONE*, *18*(6), Article e0286642. https://doi.org/10.1371/journal.pone.0286642

Gunawan, S., & Widiati, D. S. (2019, May 3). *Tuntutan dan tantangan pendidik dalam teknologi di dunia pendidikan di era 21* [Demands and challenges of educators in technology in the world of education in the 21st century] [Conference presentation]. Seminar Nasional Pendidikan Program Pascasarjana Universitas PGRI Palembang, South Sumatra, Indonesia.

Horney, N., Pasmore, B., & O'Shea, T. (2010). Leadership agility: A business imperative for a VUCA world. *Human Resource Planning*, *33*(4), 32–38.

Huicab-García, Y. (2023). Gestión del talento humano en el entorno BANI. *593 Digital Publisher CEIT*, *8*(1–1), 155–165. https://doi.org/10.33386/593dp.2023.1–1.1533

Kadijevich, D. M., & Gutvajn, N. (2021). Feedback supporting deep and strategic approaches to learning and studying: A case study on production cost. In B. Domazet & M. Raspopowvić Milić (Eds.), *12th International Conference on E-Learning* (pp. 119–121). https://ipir.ipisr.org.rs/bitstream/handle/123456789/864/Feedback_supporting_deep_and_strategic_approaches_to_learning_and_studying_a_case_study_on_production_cost_2021.pdf?sequence=1&isAllowed=y

Kanoksilapatham, B. (2023). Thai university students' self-regulated learning in an online learning environment. *3L: Southeast Asian Journal of English Language Studies*, *29*(2), 119–132. http://dx.doi.org/10.17576/3L-2023–2902–09

Kjaerum, M. (2022). A decisive moment: Human rights or authoritarianism? It is a choice. *Global Discourse*, *12*(3–4), 697–703. https://doi.org/10.1332/204378921X16333404176547

Korsakova, T. V. (2020). Higher education in VUCA-World: New metaphor of University. *European Journal of Interdisciplinary Studies*, *6*(1), 93–100.

Lechner, J., & Schlüter, N. (2023). Sustainable and resilient system development in a Vuca world: An empirical study to develop a process orientated method of risk and technical change management in automotive industry. *Proceedings of the Design Society*, *3*, 3255–3264. https://doi.org/10.1017/pds.2023.326

Lemoine, P. A., Hackett, P. T., & Richardson, M. D. (2017). Global higher education and VUCA – volatility, uncertainty, complexity, ambiguity. In S. Mukerji & P. Tripathi (Eds.), Handbook of research on administration, policy, and leadership in higher education (pp. 549–568). IGI Global Scientific Publishing. https://doi.org/10.4018/978–1-5225–0672–0.ch022

Lesková, A., Uličná, Z., Tkáčová, H., Leka, K., & Alvarez Mateo, D. (2023). Challenges and current issues of education in the era of digital and technological changes. *Journal of Education Culture and Society*, *14*(2), 319–327.

Miao, F., & Ambele, E. A. (2023). Thai students'a wareness attitudes of global Englishers pedagogy and target interlocutor. *European Journal of English Language Teaching*, *8*(3), 66–80. https://doi.org/10.46827/ejel.v8i3.4877

Misekul, J., Nichaphan, S., Detphitaksirikul, K., Misisuwan, N., & LilaPhonpinij, S. (2022). Kan sueksa panha lae naothang kanjatkan rianru khong khru phasa Thai radap chan prathom sukksa pi thi 1 klum rongrian radap kan sueksa khan pheunthan thi khao ruam khrongkan phatthana khunphap kan sueksa lae kan phatthana thongthin doimai sathaban udomsueksa pen phi liang khreungkhai phak klang ton bon [The study of problems and learning management approaches of Thai language teachers in grade 1 at basic education level schools participating in the quality education and local development project with higher education institutions as network leaders in the upper central region]. *Journal of Mahachulalongkornrajavidyalaya University*, *13*(2), 177–191.

Moh., S., Etoom, M., Aldaher, K. N., Abdelhaq, A. A., Alawneh, A., & Alghwiri, A. A. (2023). Distance learning in physiotherapy education during the COVID-19 pandemic: Students' satisfaction, perceived quality, and potential predictors of satisfaction. *Physiotherapy Theory and Practice*, *39*(7), 1513–1518. https://doi.org/10.1080/09593985.2022.2042438

Mukhlisah, F. (2023). Examine the competencies for upskilling in VUCA era (volatility, uncertainty, complexity and ambiguity). *KnE Social Sciences*, *8*(11), 229–246. Springer. https://doi.org/10.18502/kss.v8i11.13550

National Institute of Mental Health. (2018, July). *Anxiety disorders*. U.S. Department of Health and Human Services, National Institutes of Health. https://www.nimh.nih.gov/health/topics/anxiety-disorders/index.shtml

Nikolovic, T. M., & Milovanovic, M. (2021, September 23–24). Innovative approach to personalised teaching and learning in the VUCA world. In B. Domazet & M. Raspopovi Milić (Eds.), *12th International Conference on E-Learning* (pp. 60–65). https://www.researchgate.net/profile/Tatjana-Mamula-Nikolic/publication/355153719_INNOVATIVE_APPROACH_TO_PERSONALIZED_TEACHING_AND_

LEARNING_IN_THE_VUCA_WORLD/links/616051e6ae47db4e57a8efa4/INNOVATIVE-APPROACH-TO-PERSONALIZED-TEACHING-AND-LEARNING-IN-THE-VUCA-WORLD.pdf

Nuankaew, P., Nasa-Ngium, P., Kunasit, T., & Nuankaew, W. S. (2023). Implementation of data analytics and machine learning in Thailand education sector. *International Journal of Emerging Technologies in Learning*, *18*(5), 175–191.

Pannipa, N., Kanthapong, N., Buddhachanya, S., Thitasāro, A., & Klomkul, L. (2023). State of the art for educational management in VUCA world. *Journal of Propulsion Technology*, *44*(4), 30–42. https://doi.org/10.52783/tjjpt.v44.i4.791

Proykova, A. (2021, September 23–24). *Virtual Science Laboratories: Will They Replace the Physical Laboratories* [Conference presentation]. 12th International Conference on eLearning (eLearning-2021), Belgrade, Serbia. https://futuremath.pmf.uns.ac.rs/docs/multiplierEvents/eLearning/E-learning-Dissimination-Proceedings%20-%2012th%20International%20Conference%20on%20e-Learning%20 2021.pdf#page=11

Ramachandran, R. (2020). *Leading in a VUCA world. Ushus Journal of Business Management, 20*(1), 89–111. https://ssrn.com/abstract=3831107

Regalado, A. (2013). The most important education technology in 200 years. *Technology Review*, *116*(1), 61–62.

Roşca, V. I., Roman, M., Cimpoeru, S., Manafi, I., Prada, E. M., & Mureşan, L. (2023). The VUCA world of Arab and Moldovan migrants in Romania. In M. Busu & V. Vargas (Eds.), *17th International Conference on Business Excellence*, *17*(1), 276–284. Springer. https://doi.org/10.2478/picbe-2023–0029

Rovinelli, R. J., & Hambleton, R. K. (1976). *On the use of content specialists in the assessment of criterion-referenced test item validity*. Springer. https://files.eric.ed.gov/fulltext/ED121845.pdf

Sadyrina, V. V., Potapovaa, M. V., Gnatyshinaa, E. A., & Danilova, V. V. (2016). Students' adaptation in the social and cultural dynamics. *International Journal of Environmental & Science Education*, *11*(15), 8580–8591.

Sakonnakhom Khana Kammakan Kan Sueksa Khan Phuen Than. (2023). *Rabot Kan Chatkan Kan Sop* [Examination Management System]. Ministry of Education. http://180.180.244.48/NT/ExamWeb/FrLogin.aspx?ReturnUrl=%2fNT%2fExamWeb%2f

Sakonnakhom Lekathikan Sapha Kan Sueksa. (2017). *Phan Kan Sueksa Haeng Chati Phor.Sor. 2560–2579* [National Education Plan 2017–2027]. Prikhwan Graphic Co., Ltd.

Singh, A., Romero, M., & Muralidharan, K. (2020). *COVID-19 learning loss and recovery: Panel data evidence from India* (Working Paper No. 22/112) RISE. https://doi.org/10.35489/BSG-RISEWP_2022/112

Stein, S. (2021). Reimagining global citizenship education for a volatile, uncertain, complex, and ambiguous (VUCA) world. *Globalisation, Societies and Education*, *19*(4), 482–495.

Swain-Oropeza, R., & Renteria-Salcedo, J. A. (2019, November 6–7). *Tec21 can be an educational model for a VUCA world* [Conference presentation]. IEEE 11th International Conference on Engineering Education *(ICEED)*, Kanazawa, Japan. https://doi.org/10.1109/ICEED47294.2019.8994923

Tanta, T., & Swastikasari, M. M. (2023). Learning management in the COVID- 19 pandemic based on blended learning on education management students University of Cenderawasih Jayapura. *Kwangsan: Jurnal Teknologi Pendidikan*, *11*(1), 165–185. https://doi.org/10.31800/jtp.kw.v11n1.p165--185

Tetteh, L. A., Krah, R., Ayamga, T. A., Ayarna-Gagakuma, L. A., Offei-Kwafo, K., & Gbade, V. A. (2023). Covid-19 pandemic and online accounting education: the experience of undergraduate accounting students in an emerging economy. *Journal of Accounting in Emerging Economies*, *13*(4), 825–846. https://doi.org/10.1108/jaee-07–2021–0242

Sathaban Kan Son Witayasat Lae Theknoloyi. (2023, December 6). *PISA 2022 Assessment Results*. PISA Thailand. https://pisathailand.ipst.ac.th/news-21/

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. http://dx.doi.org/10.20849/jed.v3i2.613

Zhou, L., Wu, S., Zhou, M., & Li, F. (2020). 'School's out, but class' on', the largest online education in the world today: Taking China's practical exploration during the COVID-19 epidemic prevention and control as an example. *Best Evid Chin Edu*, *4*(2), 501–519.