Research Paper

Assessment on Knowledge, Attitude and, Behavior of Myanmar Instructors in the Context of Education 5.0 Principles

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Abstract

As education evolves alongside technological advancements, it is crucial to understand how instructors perceive and adopt modern teaching methodologies, including artificial intelligence (AI), project-based learning, cooperative learning, gamification, and learning management systems (LMS). The primary aim of this study is to examine the knowledge, attitudes, and behaviors of Myanmar instructors in the context of Education 5.0 principles. The study employs a survey method, involving 102 instructors employed in private higher education institutions. Findings indicate a strong correlation between knowledge, attitude, and behavior, suggesting familiarity with the principles of Education 5.0. Furthermore, the study highlights a gap in scale development concerning these education 5.0 principles, positioning this research as a step toward filling this void. The implications of these findings are significant for private higher education institutions in Myanmar, offering valuable insights into curriculum development, instructor training, and the integration of technology in education.

Keywords: *Education 5.0 Principles, Artificial Intelligence (AI), Project-based Learning, Cooperative Learning, Gamification, Learning Management Systems (LMS).*

INTRODUCTION

Today, society's evolution has become compatible with modern technology. Modern technology has transformed the way human beings interact with the world (Watts, 2023). People have become more productive, more interconnected, and more efficient over the past few decades due to technological advancements. In the context of historical tracking, the advent of new technology has ushered in a new era, giving rise to a new paradigm known as the Industrial Revolution (Keser, 2019). Scholars commonly delineate the industrial revolution into five phases: Industry 1.0, marked by the advent of steam engines in the eighteenth century; Industry 2.0, characterized by mass production through electrical power; Industry 3.0, defined by automation enabled by advanced computer systems; and Industry 4.0, distinguished by digital transformation through the integration of the Internet of Things (IoT) and Cyber-Physical Systems (CPS) across both social and commercial domains.

Industry 4.0 has dramatically changed the social structure, and a new transformation towards an opulent, human-centered approach has emerged, known as the super-intelligent society or Industry 5.0. The Japanese government has highlighted the focal points of Industry 5.0, or a super-intelligent society, which involves the use of technology in industrial production and other social aspects, such as education and social welfare services (Kitano, 2016). In other words, a knowledgeable society or Industry 5.0 will utilize technology correctly. Unlike other industry transformations, Industry 5.0 explores the forces of technology pushing to make more power available to human beings than the ordinary usage of technology in society. In fact, the role of technology in Industry 5.0 stood as the complementary force for the existence of human beings. Kitano (2016) briefly discussed the evolution of industry in his works. Figure 1 provides an abstract concept of the change during the Industrial Revolution.
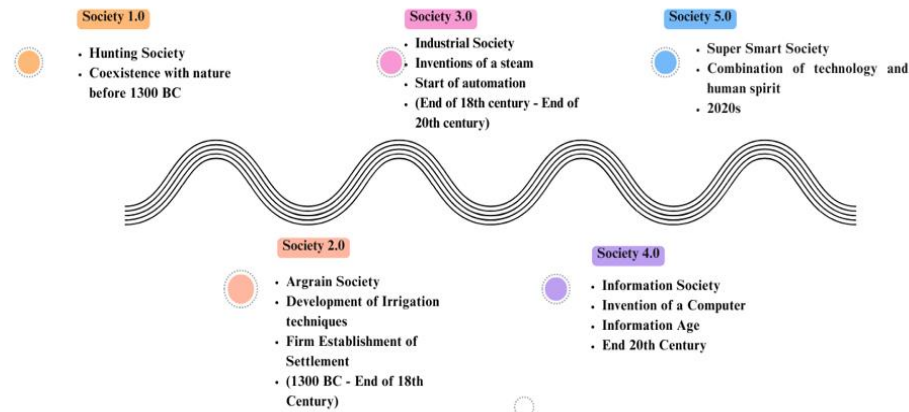
Figure 1. Society Evolution
Source: Kitano (2016)

In the educational aspect, the development of the education industry is also classified into five phases. Education 1.0 heavily emphasizes rote learning, which encourages memorization, and classroom teaching with few concerns about technology usage in the teaching process. Limited use of technology is found in education 2.0 phases, and engagement in collaborative learning is limited, starting the blended learning process. Education 3.0 employed a comprehensive technology integration and student-centered learning approach. Technology is the core element for education 4.0. Education 4.0 began to utilize artificial intelligence tools in the teaching process, but it is still limited in personalizing learning. Today, the education principle is evolving to Education 5.0, which emphasizes personalized learning by leveraging modern artificial intelligence, virtual reality, and augmented reality. The central concept of Education 5.0 is 'human first'.

The principle of education was changing as society's values shifted. Technologies bridge the gap between the developed and developing worlds. All institutions, particularly educational institutions, monitor, track, and develop strategies to capitalize on opportunities arising from global societal changes. Unlike other nations, Myanmar faces unique local problems that are significant barriers to exploring the changing global society since 2021. Thus, this paper aims to assess the readiness of Myanmar instructors to adopt Education 5.0 principles in their daily work, considering the nation's limitations. The examination of instructors' readiness on Education 5.0 principles used a three-fold approach: knowledge, attitude, and behavior in this study.

Problem Statement

The Myanmar education system has historically been predominantly state-led, with government education policy exerting a profound influence on the entire educational landscape. Successive regimes have politicized education principles, which have been a significant contributing factor to the system's persistent weaknesses. Most students, teachers, and other stakeholders in the education field remain influenced by teacher-centered approaches, showing resistance to pedagogical reform.

There is no doubt that the adoption of technology in the education process has become necessary, particularly following the COVID-19 pandemic and the 2021 military coup. These disruptions have challenged conventional education principles while simultaneously fostering the emergence of new practices in some areas. In reality, Myanmar's education system has leapfrogged certain stages by integrating educational technologies.

Nevertheless, the system continues to face numerous challenges. Chief among them is the absence of a unified framework grounded in effective government policy, which has relegated education to a lower priority for stakeholders amid ongoing conflict and tension between the SAC, EROs, and the NUG. Therefore, this study focuses on instructors' readiness to adopt Education 5.0 principles and examines how they apply these principles in classrooms, despite the existing constraints. The findings are expected to inform future policymakers, practitioners, and education experts in designing more effective nationwide policies by aligning them with instructors' readiness and capacities.

The Myanmar education system, historically dominated by state control and politicized educational principles, suffers from resistance to pedagogical reform and limited adaptability among educators. Traditional teacher-centered approaches remain deeply entrenched, despite the urgent need for transformation brought on by the COVID-19 pandemic and the 2021 military coup, which accelerated the adoption of educational technologies. While these disruptions catalyzed partial leaps toward modern education practices, the absence of a unified, stable education policy—exacerbated by ongoing conflict among the SAC, EROs, and NUG—has left instructors with inconsistent guidance and support. As a result, the readiness of instructors to implement the progressive, learner-centered principles of Education 5.0 remains unclear and underexamined. This research examines instructors' knowledge, attitudes, and behaviors toward Education 5.0, aiming to inform future education policies that align with Myanmar's unique socio-political and technological context.

Research Aims

The primary objective of this study is to evaluate the knowledge, attitudes, and behaviors of Myanmar instructors regarding the principles of Education 5.0.

Research Objectives

The specific objectives of this study are as follows:
1. To identify the instructors' knowledge, attitude, and behavior on education 5.0 incubators.
2. To test the relationship between the instructor's knowledge and attitude towards education 5.0 incubators.
3. To analyze the correlation of Instructors' attitude and behavior for the education 5.0 incubators.
4. To determine the test on the relationship between Instructors' knowledge and behavior for education 5.0 incubators.

LITERATURE REVIEW

This section describes the concise literature review on education 5.0, revealing its conceptual gap and practical gaps, as well as this study use the Knowledge-Attitude-Behavior (KBA) framework towards the education 5.0 principles.

Education in Myanmar

According to Lwin (2019), the evolution of the Myanmar education system can be categorized into six distinct phases.
- First, the period before independence, also known as the colonial era.
- Second, the years after independence (1948–1962).
- Third, the socialist regime (1962–1988).
- Fourth, the military rule regime (1988–2010).
- Fifth, the wave of democratization (2011–2021).

- Sixth, the return to military rule (2021–present).

In each era, the Myanmar education system reflects the symptoms of a weak state that cannot adequately provide citizens' welfare (Shah, 2019). The significant turning points of the education system are summarized in this section.

Before The Independence Period (1885- 1948)

The British Empire took control of the entire Myanmar region as a result of the Anglo-Burmese Third War in 1885. The British introduced the modern public administration system to the Myanmar kingship system. The British colony established an education system that replaced the traditional monasteries' education system in Myanmar. As a Western-style-led system, the medium of instruction is the English language, and the main objectives are to nurture the human resources for colonial administration.

The education system in Myanmar during the colonial era consisted of three pillars: primary, secondary, and pre-university sectors. These pillars are vernacular school, Anglo-vernacular school, and English school education. Local authorities manage vernacular schools and reach out to most students across the country. Anglo-vernacular and English schools are targeted at high-income families due to their high tuition fees. Lwin (2019) suggested that the educational principles (teaching style, curriculum, and class administration) of vernacular schools, Anglo-vernacular schools, and English schools tend to standardize the agricultural, rural life, and human resources for the colonial bureaucratic mechanism.

After the Independence Period (1948 – 1962)

The newly formed government of Myanmar, after the declaration of independence, introduced a new education policy for the country that encouraged free education for all citizens. It was limited to enforcing this policy nationwide due to the civil war. This policy has a significant impact on urban areas under government control. In 1958, the U Nu government announced the Burmese language as the medium of instruction, and English was taught only at the 5th-grade standard (the beginning of middle school). U Nu, the first prime minister of the Union of Myanmar, had an education policy aligned with welfare state policy in terms of:
1. To articulate the democratic principle across the country.
2. To train and nurture technicians and professionals for the country's rehabilitation
3. To ensure that every citizen of Burma has a solid foundation of good citizenship.

Overall, Myanmar's education policy, particularly during the U Nu government regime, was a beacon of hope in the region. The policy, which was aligned with global educational concepts, including the pilot testing of the "1951 pilot education act", showed promise for the future of Myanmar's education system.

Socialist Regime (1962 – 1974)

General Nay Win took the country's authority from the U Nu government and announced the socialist ideology as the country's core ideology in 1962. General Nay Win and his affiliates introduced the Burmese Way of Socialism, which included the nationalization of private property in every sector. General Nay Win nationalized all private schools, and as a result, Christian schools could no longer serve rural areas. As a result of this nationalized scheme, weaknesses emerged in various aspects of the national education system. Although General Nay Win announced an education policy based on social values, it has not created equal opportunities for all citizens to exercise their educational rights. Centralized examinations are the primary criterion for students' academic performance, such as those who pass with an A list, who have a chance to apply to science subjects for further studies. Some foreign registration card holders were barred from attending

professional universities, such as the University of Medicine and the Technological University. General Nay Win's educational policy is deeply mixed with political misconceptions in many areas. Those practices were major causes for the weakness of Myanmar's Education system compared to regional countries and limited the instructors' capacities for an effective education system.

Military Rule Regime (1988 -2010)

The "8888" democratic revolution was remarkable for its pivotal turning points in the country's transformation. General Nay Win's Burmese way of socialism and his regime came to an end with the "8888" democratic revolution. General Saw Maung took over the country's authorities in 1988, and he promised the country that he would transfer power to the next elected government. In the 1990 election, Aung San Suu Kyi led the National League for Democracy (NLD), which won a landslide victory, but the military refused to transfer state authority to the NLD. Myanmar's political landscape has very complicated issues at this time. The military detained Aung San Su Kyi and other opposition persons, and General Saw Maung also retired from the position of Head of State. General Than Shwe developed the military-led committee and acted as the Head of State. There were no immediate crucial changes in educational policy, but some important developments occurred, such as curriculum changes and advancements in the teaching profession of that time.

On the curriculum side, especially for basic education, science subjects were taught in English for grades IX and X. This scheme poses a challenge for teachers to deliver effective instruction. Additionally, students tend to memorize without critical analysis of complex subjects, as they often need to write in English on these subjects in their exams. According to Lwin (2019), the secondary grade curriculum does not balance between higher education courses and industry requirements. Thus, the government curriculum cannot equip students with the necessary employability skills to succeed as professional workers in the real world.

The global educational concept was revised to accommodate students' assessments, transitioning from a one-sided approach to a multi-sided approach at this stage. The Myanmar government still practices a "pass-fail" assessment system for promoting grades. This appears to be the lack of a continuous system of students in terms of intellectual, moral, physical, and other attitudes and skills. The "pass-fail" assessment system has produced a tuition system and a weakness in analytical thinking in academic subjects. Additionally, this system has increased the students' dropout rate over the years (Kyi, 2000), resulting in a decline in the school enrollment rate, which led to significant problems in the educational environment, including inadequate school facilities, poor textbook quality, low teacher quality, and limited use of information technologies in education.

The quality of the teaching profession declined significantly during this regime. Several contextual factors contributed to the decline of the teaching profession. Among them, filling the number of teaching staff, especially in the basic education system, is linked to solutions that solve the country's unemployment problem. Appointing fresh graduates from art and science universities as Junior Assistant Teachers (JATs) and Senior Assistant Teachers (SATs) without proper teaching and pedagogical training programs is clear evidence of compromising the quality of the teaching staff. Most teachers lack professional skills and a professional identity in society, which affects their classroom management practices and other teaching activities. The global concept of education has been evolving rapidly; however, Myanmar's education system remains rooted in traditional concepts, with no formal grades.

Waves of Democratization (2011- 2021)

General Than Shwe led the State Peace and Development Council (SPDC), which was transformed into a structure of a democratic government system through the 2008 constitution

law. Myanmar's democratization has two waves – the first, from 2011 to 2015, under the President U Thein Sein (former Prime Minister of the SPDC Administration), and the second wave, from 2015 to 2021, led by Daw Aung San Suu Kyi after the SPDC. Both governments tried to reform the Myanmar education system in those two waves. In July 2012, the President U Thein Sein Government made a remarkable initiative for the National Education Development framework, officially launching the Comprehensive Education Sector Review (CESR) (Soe et al., 2017). The CESR scheme was developed in collaboration with internal and external technical experts. This CESR focuses on seven areas, including the use of ICT. Overall, the first wave of democratization tested the Myanmar education reform, transitioning from a centralized to a decentralized system, through the CESR framework.

The second wave of Democratization started in 2015 under the administration of the National League Democratic government. There were four mechanisms for implementing the NLD government's education policy. They were the National Education Policy Commission (NEPC) was established in September 2016 as a statutory body to provide education policies for "the promotion of national development" and to oversee the National Curriculum Committee (NCC – formed in 2016), the National Accreditation and Quality Assurance Committee (NAQAC – formed in 2017), and the Rectors' Committee. The significant changes in education reforms include a major revision to the primary curriculum level of basic education, assisted by the Japan International Cooperation Agency, marking the first change in 20 years (Lall, 2023). The other NLD government reforms include changing the teacher education program from a two-year to a four-year degree program, aligning it with the standards of ASEAN countries. Moreover, the government emphasizes universities' quality assurance programs through the AUN-QA framework, which aims to graduate students with high employability skills to fill the labor market gap.

Post-COVID and 2021 Coup Regime (2021- Present)

On February 1, 2021, it was a nightmare for all Myanmar citizens. The Myanmar Military took the country's authority from a civilian-led government and detained all the heads of state. This action of 2021 led to the coup and detention of political leaders, which led to the detention of the country's future, including the education sector. In fact, the majority of citizens heavily depend on the public education sector rather than the private sector or the informal sector. Myanmar did not have a private education law before the 2021 coup. The 2021 coup presents numerous challenges for educational development, especially regarding teacher training, as many trained teachers are involved in the civil disobedience movement and are far away from the classroom. Moreover, Myanmar has now faced significant challenges, such as brain drain, due to various situations. In the higher education sector, the state-run university enrollment rate drops to 70% (Padone, 2023). The dropout rate among university students has gradually disappeared from the academic atmosphere. This is a significant issue for a country's long-term socio-economic well-being.

There were a few positive aspects among the negative aspects in Myanmar. The first is that citizens can break away from traditional educational thoughts and adopt international educational syllabi, such as the International General Certificate of Secondary Education, Secondary Diplomada, and General Education Development. These international educational programs, offered by private educational organizations, have reached a tiny percentage of high-income citizens within the total population. On the other hand, students and teachers in vulnerable areas have limited opportunities to meet international standards of this kind. For such students, the National Unity Government's (NUG) Ministry of Education, along with some ethnic armed organizations (EROs), provided an interim education scheme for students in the armed resistance area. To bridge the gap in Myanmar education after the 2021 coup, technology is playing a significant role. The adoption of technology

in education was somewhat prohibited for Myanmar's educational players, as their educational principles were too far removed from the global education concept.

Overview of Education 5.0 and Its Dimensions

Education is the mechanism that delivers the wisdom for distinguishing right from wrong as a fundamental human right (Ahmad, 2023). The education system comprises a systematic design to fulfill the needs of society. Each nation shapes its education system in accordance with its own needs, and the system remains dynamic and continually evolving (McGettrick, 2006). It evolves. Ahmad (2023) proposed an evolution of the education system and its principles in a five-phase model. The scholars suggested that the very first journey of educational evolution started with the 1.0 era, which placed more emphasis on passive teaching. After a few decades, the advancement of technology has ushered in a new era of education, characterized by 2.0 principles. Education practitioners will utilize Education 2.0 principles, combined with limited technology, to achieve interactive learning. The education 3.0 era significantly altered the former instructor-centered approach to a student-centered learning approach. The advancement of Artificial Intelligence has had a profound effect on changing educational principles. The education 4.0 era heavily emphasizes the usage of AI in teaching and learning management systems. The last version of the education 5.0 principles was developed by the Zimbabwean government, particularly through the Ministry of Higher and Tertiary Education, Innovation, Science, and Technology Development (MHTEISTD). The education 5.0 principles integrate advanced technologies with collaborative learning, project-based learning, and critical thinking.

Education 4.0 focuses on aligning education with the demands of the Fourth Industrial Revolution by integrating advanced technologies, such as AI, automation, and personalized learning, to produce tech-savvy, job-ready graduates. In contrast, Education 5.0 expands this vision by incorporating human-centered values, including ethics, empathy, community service, and national development. Originating from Zimbabwe, Education 5.0 not only embraces innovation and digital tools but also aims to produce socially responsible graduates who contribute to industrialization and solve real-world problems through project-based and collaborative learning approaches.

The global interest in Education 5.0 stems from its integration of advanced technologies, such as artificial intelligence, robotics, and digital platforms, into education systems that promote collaborative learning, project-based learning, and critical thinking. These principles align closely with the skills required in today's dynamic workforce, where adaptability, innovation, and problem-solving are essential. Unlike previous models, Education 5.0 prioritizes the development of entrepreneurial graduates who are equipped to contribute to national development and global competitiveness.

Moreover, the COVID-19 pandemic and geopolitical disruptions—such as those affecting Myanmar—have accelerated the adoption of educational technologies worldwide, highlighting the need for education systems that are resilient, inclusive, and digitally enabled. Education 5.0 provides a responsive and flexible framework that enables nations to overcome traditional barriers by leveraging technology to personalize learning, decentralize access, and foster innovation ecosystems. Consequently, Education 5.0 is not just a Zimbabwean innovation but a globally relevant blueprint for rethinking education as a driver of sustainable development, peacebuilding, and socio-economic transformation—particularly in countries facing systemic educational challenges.

The education 5.0 principles encompass 21st-century skills by applying advanced technologies in the education system. This paradigm focuses on advanced digital technologies that leverage the learners' high-order skills such as critical thinking, collaborative learning, innovation,

communication, and character development (Rane, 2024). The origin points of the Education 5.0 principles align with the curriculum in Zimbabwe, as well as Andy's developmental needs (Muzira, 2020). Thus, education 5.0 focuses on the formation of individuals capable of adapting to change, creating innovative ways, and developing a smart character by utilizing advanced digital technologies (Santos, 2023). Numerous research studies were conducted on education at that time. After a careful review of previous scholars, this study identified five key dimensions for the education 5.0 principles. These dimensions are the use of Artificial Intelligence, project-based learning, gamification or game-based learning, cooperative learning, and the use of a learning management system.

Artificial Intelligence

Today, Artificial Intelligence technologies go beyond adopting content to anticipate the individual needs, resulting in a more effective educational landscape. Instructors, with well-designed and research-based curriculum context requirements and more, create a customized mechanism for each learner (Yousuf, 2021). The incorporation of AI into education has a profound impact that enriches students' learning experiences and enhances the effectiveness of the entire educational process. Most research has focused on extracting the overall benefits of using AI in the education process from a student's perspective. This study suggests the usage of AI in the education process from the instructor's perspective. The integration of AI into an educational context offers several benefits for instructors, including the development of instructional models, saving time for assessing students' performance, and providing personalized lessons (Sywelem, 2024).

Project-Based Learning

Project-Based learning, or PBL, is the second dimension for education 5.0. This approach places students at the center of real-world challenges and cases, enabling them to solve problems within their own contexts. PBL allows students to stimulate their critical thinking and develop an out-of-the-box thinking style for addressing real-world challenges. This PBL approach provides students with valuable opportunities to experience the real world. This study assesses the instructors' opinions and readiness to use PBL as one technique for implementing education 5.0 principles (Alacapınar, 2008).

Gamification or Game-Based Learning

The study utilized game-based learning as one of the foundations for education 5.0. Integration of. Game-based learning is a crucial component of today's pedagogical strategies. The gaming strategies provide students with gaming elements, such as rewards, competition, and enjoyment, to foster long-term engagement and interest in the learning process. Moreover, Kapp (2012) argues that the use of games in an educational context stimulates students' reinforcement and motivation to participate in the learning process. There were various gaming tools for educational contexts, ranging from simple to technology-based games (Sáez-López, 2022). The Education 5.0 paradigm enables the integration of technology-based games into teaching pedagogy. The use of gaming in education has transformed the traditional knowledge transmission process into an experience-based approach. Therefore, this study examines the instructors' knowledge, attitudes, and behaviors in using gamification to implement the Education 5.0 principles.

In the context of Education 5.0, the principles of project-based learning, artificial intelligence, gamification, cooperative learning, and learning management systems are especially crucial for transforming traditional education models. Project-based learning encourages students to engage in real-world problem solving, fostering innovation and critical thinking. Artificial intelligence personalizes the learning experience by offering adaptive feedback and tailored content, which is

essential in diverse classrooms with varying student abilities. Gamification increases student motivation through interactive and rewarding experiences, making learning more engaging and less rigid. Cooperative learning fosters collaboration, communication, and peer support—skills essential for both academic achievement and community development. Learning management systems offer flexible access to educational content, ensuring continuity of learning even in unstable or remote environments, such as conflict-affected areas. Compared to conventional teaching methods, these Education 5.0 components are more aligned with the goals of producing innovative, socially responsible, and future-ready graduates.

Cooperative Learning

Education 5.0 is concerned with cooperative learning, not only to facilitate student interactions, but also to promote the sharing, exchange, and collaboration of student knowledge on projects. However, the traditional teacher-centered learning approach is being replaced by Education 5.0, which emphasizes a peer learning style, moving towards a peer-centered approach. Cooperative learning not only improves student academic performance but also enhances their soft skills, including communication, teamwork, and negotiation skills (Alias, 2017). According to the benefits of cooperative learning, the education 5.0 paradigm adopted cooperative learning as one dimension of this principle.

Learning Management System

The application of a learning management system (LMS) fosters the efficiency of academic workload and favors personalized learning in the educational landscape. The traditional LMS merely provides a communication platform between the instructors and learners. However, today, LMS does more work for the personalized learning process through the application of Big Data analytics. Therefore, today, school and educational institution administrations have designed the technology infrastructure for using LMS in the educational process. Academic data can help professors to analyze their teaching pedagogy and influence changes in line with student needs, requirements, and expectations. Many online educational sites have been developed, and multiple courses tailored to individual student preferences have been introduced. Improvement in the educational sector depends upon acquisition and technology.

Knowledge-Attitude-Behavior

The Knowledge-Attitude-Behavior (KAB) model process originated from learning theory (Bandura, 1976) and diffusion of innovation theory (Rogers, 1995). According to Roger (1995), members of a social system accept innovation through four stages over time. The stages include knowledge acquisition, persuasion, decision, and confirmation. In addition, Bandura (1976) suggested that individual behaviors are learned through social context. Another perspective used to consider behavior changes is the theory of planned behavior by Ajzen (1991), which provides a framework for understanding the relationship between behavioral intention and behavioral attitudes.

This study employed the Knowledge-Attitude-Behavior (KAB) model to examine instructors' knowledge, attitudes, and behaviors regarding the Education 5.0 principles. Knowledge is the understanding of the information, which is the conscious and non-symbolic perception of meaning. There are five categories of knowledge on education 5.0 principles: AI, knowledge, Project-based Learning (PBL) knowledge, Gamification knowledge, cooperative learning, and Learning Management System knowledge. Attitude refers to a positive or negative evaluation of an objective (Ajzen & Fishbein, 2000). Behavior refers to regular activities that are influenced by widely shared social norms and beliefs (Bourdieu, 1990). The KAB model is a structured, standardized

questionnaire completed by a target population that can quantify and analyze what is known (knowledge), believed (attitudes), and done (behavior) regarding a topic of interest (Nguyen et al., 2019; Andrade et al., 2020).

Conceptual Framework

This study employed knowledge, attitude, and behavior as key dimensions to test the principles of Education 5.0. For each variable, it applied all education 5.0 principles, namely: 1)usage of AI, 2) Project-based learning, 3) Gamification knowledge, 4) cooperative learning, and 5) Learning Management Style (LMS). After a careful review of previous studies, the framework for the entire study was constructed as follows.
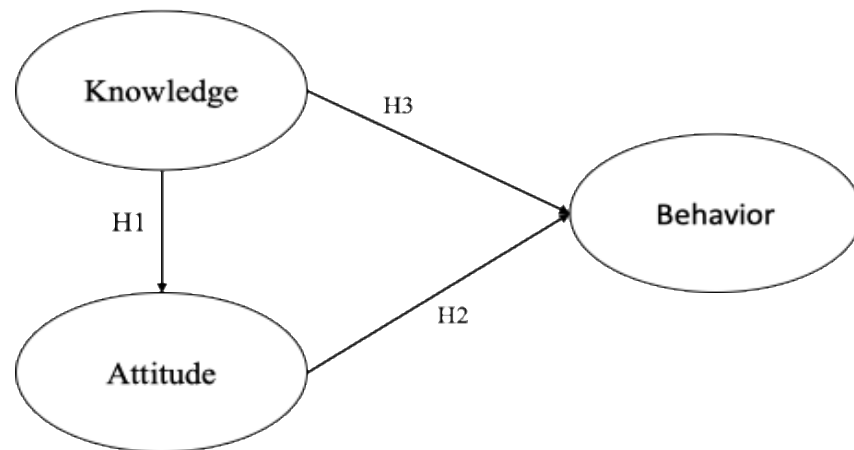

Figure 2. Conceptual Framework of the Study
Source: Schwartz (1975)

This study developed three key variables to assess instructors' readiness for education 5.0 principles. The study applied the five key Education 5.0 principles, namely artificial intelligence, project-based learning, gamification, cooperative learning, and learning management style. All these Education 5.0 principles are applied to all variables —attitude, knowledge, and behavior. According to the results of previous literature, this study proposes the following hypotheses.

H1: There is a positive relationship between Knowledge and Attitude of the Instructor on the education 5.0 principles in Myanmar.

H0: There is no positive relationship between Knowledge and Attitude of the Instructor on the education 5.0 principles in Myanmar.

H2: There is a positive relationship between Attitude and the Behavior of the Instructor on the education 5.0 principles in Myanmar.

H0: There is no positive relationship between Attitude and Behavior of the Instructor on the education 5.0 principles in Myanmar.

H3: There is a positive relationship between Knowledge and the Behavior of the Instructor on the education 5.0 principles in Myanmar.

H0: There is no positive relationship between Knowledge and the Behavior of the Instructor on the education 5.0 principles in Myanmar.

RESEARCH METHOD
Questionnaire Design

This study primarily applied the survey method. The systematic questionnaire is a crucial part of this study. This questionnaire consisted of four parts. The first one is the demographic

profile of respondents. In this part, the study used age, education, affiliation, number of service years, and specialized subject as key demographic factors. The second part of this questionnaire assesses instructors' knowledge of the 5.0 dimensions of education, and the third part evaluates their attitude towards and concern about these dimensions. The final part assesses their behavior regarding all dimensions. This study applied the five education 5.0. The five dimensions for education 5.0 by comparing the education 4.0 principles, namely artificial intelligence, project-based learning, cooperative learning, gamification, and the use of Learning Management Systems. This study developed five-point Likert scale questions based on the five principles and conducted a pilot test with 30 instructors to assess the questionnaire validity and reliability. According to the results of the pilot test, this study makes revisions and corrections to the first-generated questionnaire as necessary.

Selection of Respondents

This study has a significant focus on instructors of Myanmar's private higher education institutions as the primary respondents. According to the announcement by the Ministry of Education, Myanmar (2024), there are 23 private higher education institutions registered under the regulations of the Private Higher Education Law enacted in 2024. The central area of this study is Yangon, the heart of Myanmar. There are 15 private higher education institutions in Yangon. Among them, as the embryonic phase of industry, some institutions do not have full-time faculty members; therefore, this study excludes institutions without full-time faculty. Therefore, this study targeted the seven institutions that have full-time faculty members. Those seven higher private educational institutions are Myanmar Imperial College, Strategy First International College, Gusto International College, NMA College, DBU International College, Taxila College, and Royal Academic Institute. Those institutions delivered the Higher National Diploma syllabus developed by Pearson Education, the United Kingdom Universities' syllabus, and the Thai Private University Syllabus in various fields, including business management, Computer science, engineering, and some liberal arts education. According to the full-time faculty list of these seven institutions, 102 instructors participated in this research, from developing questionnaire items to answering the survey questions.

Data Analysis

Descriptive analysis, reliability and validity analysis, and correlation analysis are the primary techniques used to analyze the collected data. A descriptive analysis was used to examine the demographic profiles of the respondents. To assess the reliability and validity, four fundamental indicators were used: individual item factor loading, Cronbach's alpha, composite reliability for each variable, and average variance extracted (AVE) for each variable (Hair et al., 2017). The Pearson correlation analysis was used to test the proposed hypotheses. For the use of Pearson correlation in data analysis, the Pearson Correlation test is a statistical tool used to determine the strength of associations between two variables (Wonu, 2021).

FINDINGS AND DISCUSSION
Demographic Statistics

55 people out of 102 are Female, Which Means that more than 50% of respondents are female instructors, due to the female academician majority dominance in the academic world. The majority of respondents are between 30 and 35 years old. The last portion of respondents is above 50 years old. Notably, most of the academic staff in the private higher education industry are young. A large portion of respondents hold a Master's degree and its equivalent. According to this survey result. Myanmar Imperial College has hired more full-time faculty members than any other institute in

Myanmar. The second full-time faculty member hired by Strategy First Institute and DBU International College is the minimum number of full-time faculty members. More than 50% of respondents have access to 3 to 7 services at the respective institute.

Table 1. Profile of Respondents

Items	Variables	N	Percentage
Gender	Male	47	46
	Female	55	54
	Prefer not to say	0	0
Age	>30	30	29
	30 - 35	43	42
	35 - 40	20	19
	45 - 50	5	6
	50<	4	4
Education	Master Degree or equivilence	77	75
	Ph.D	25	25
	Post Ph.D	0	0
Affilation	Myanmar Imperial Collage	34	34
	Strategy First International Collage	32	33
	Gusto International Collage	20	21
	Taxila Collage	5	4
	NMA Collage	3	2
	DBU International Collage	2	1
	Royal Academic Institute	6	5
Service Year	>3	22	22
	3-5	42	41
	5-7	30	29
	7<	8	8
Filed of Expertise	Business	30	31
	Socail Scinences	12	11
	STEM	27	26
	Computer Sciences	33	32
	Other	0	0

Source: Survey Data (2024)

Item Analysis

The primary objectives of this study are to assess the reliability and validity of each construct for the education 5.0 principles from three perspectives: 1) instructors' knowledge, 2) instructors' attitude, and 3) instructors' behavior. Therefore, this study adopted the recommendations of Hari et al., which included four fundamental indicators: individual item factor loadings, Cronbach's α, composite reliability of the latent variables, and average variance extracted (AVE) by the latent variables. The factor loading is used to measure how well an indicator measures each construct. The value of factor loading is typically above 0.7, indicating a strong relationship between the

observed variable and the latent constructs (Thurstone, 1931). The researchers proposed using Cronbach's alpha and composite reliability to test the consistency between each construct. The value of both indicators above 0.7 also ensures the internal consistency over time. For the case of multicollinearity issues between constructs, the study employed discriminant validity. The results of each item analysis are presented in the tables below for all dimensions of the 5.0 education principles, viewed from three perspectives: knowledge, attitude, and behavior.

Item Analysis of Instructors' Knowledge on Education 5.0 Principles

This section reports the findings derived from four fundamental indicators assessing instructors' knowledge of the Education 5.0 principles. The analysis is grounded in five core principles of Education 5.0, which serve as the observed variables. In total, sixteen items were employed to measure these variables comprehensively.

1. Artificial Intelligence
2. Project-Based Learning
3. Gamification
4. Cooperative learning
5. Learning Management System (LMS).

Table 2. Construct on Reliability and Convergent Validity of Knowledge Scale Items

Construct	Items	Factor Loading	Mean Value	Composite Reliability	Average Variance Extracted	Cronbach's Alpha Value
Artifical Intelligence	AIK1	0.923	3.66	0.951	0.867	0.922
	AIK2	0.917	3.66			
	AIK3	0.954	3.65			
Project Based Learning	PBLK1	0.733	3.41	0.91	0.718	0.863
	PBLK2	0.886	3.71			
	PBLK3	0.87	3.87			
	PBLK4	0.892	3.79			
Gamification	GK1	0.734	3.68	0.898	0.748	0.826
	GK2	0.93	3.74			
	GK3	0.918	3.76			
Cooperative Learning	CLK1	0.816	3.65	0.678	0.435	0.313
	CLK2	0.355	3.54			
	CLK3	0.718	3.38			
Learning Management System	LMSK1	0.882	3.81	0.9294	0.814	0.884
	LMSK2	0.921	3.55			
	LMSK3	0.904	3.58			

Source: Survey Data (2024)

According to the results of factor loading, all 16 constructs have factor loadings above 0.7. The Cronbach's alpha values are above 0.7, except for the cooperative learning constructs related to knowledge dimensions. For the part of discriminant reliability, the data on knowledge dimensions for the 5.0 principles of education are presented in Table 3, excluding cooperative learning. For the item analysis of the knowledge variable of education 5.0 principles, all constructs

are reliable and valid, except for cooperative learning. Thus, this study concludes that there is a need to revise the scale items of cooperative learning.

Table 3. Discriminant Validity of Knowledge Scale Items

Correlations	Artificial Intelligence	Project Based Learning	Gamification	Cooperative Learning	Learning Management System
Artificial Intelligence	0.931				
Project-Based Learning	.550**	0.847			
Gamification	.683**	.772**	0.865		
Cooperative Learning	.285*	.400**	.335**	0.66	
Learning Management System	.333**	.381**	.321*	0.073	0.92

Source: Survey Data (2024)

Items Analysis of Instructor's' Attitude on Education 5.0 Principles

There were a total of 15 items for measuring the instructors' attitude on the 5.0 principles of education. To determine the reliability, internal consistency, and validity of each item for the attitude variable, this study employed the CR, Cronbach's alpha value, and AVE.

Table 4. Construct on Reliability and Convergent Validity of Attitude Scale Items

Construct	Items	Factor Loading	Mean Value	Composite Reliability	Average Variance Extracted	Cronbach's Alpha Value
Artificial Intelligence	AIA1	0.92	3.47	0.95	0.862	0.919
	AIA2	0.914	3.48			
	AIA3	0.951	3.71			
Project based Learning	PBLA1	0.89	3.41	0.94	0.845	0.907
	PBLA2	0.923	3.71			
	PBLA3	0.945	3.87			
Gamification	GA1	0.894	3.85	0.93	0.804	0.875
	GA2	0.885	4.03			
	GA3	0.912	3.98			
Cooperative Learning	CLA1	0.882	3.88	0.95	0.859	0.917
	CLA2	0.948	3.84			
	CLA3	0.949	3.83			
Learning Management System	LMSA1	0.822	3.41	0.91	0.767	0.845
	LMSA2	0.907	3.31			
	LMSA3	0.897	3.37			

Source: Survey Data, (2024)

The statistical output reveals that all 15 items of all constructs are above 0.7, and the values of Cronbach's alpha are also above, indicating that all these measurement items for instructors' attitude were valid in this study. Table 5 describes the discriminant validity of the attitude scale items. According to the results of statistical analysis, the square root of the Average Variance Extracted (AVE) for each construct is more than its correlations with other constructs.

Table 5. Discriminant Validity of Attitude Scale Items

Correlations	Artifical Intelligence	Project Based Learning	Gamification Mean	Cooperative Learning Mean	Learning Management System Mean
Artificial Intelligence	0.928				
Project Based Learning	.405**	0.919			
Gamification	.574**	.644**	0.897		
Cooperative Learning	.496**	.405**	.424**	0.93	
Learning Management System	.465**	.589**	.448**	.309*	0.876

Source: Survey Data (2024)

Item Analysis of Instructors' Behavior on Education 5.0 Principles

There are 15 scale items for the five constructs of education, 5.0 Principles. The factor loadings indicate how well each item represents its respective construct. Ideally, a loading above 0.70 is recommended. However, in the AI construct, item AIB2 has a very low factor loading (0.159), suggesting that it does not contribute effectively to the measurement and may need to be removed or revised. Similarly, in the Gamification construct, GB1 (0.553) and GB2 (0.516) have weaker loadings, indicating potential issues with measurement quality. Other constructs, including PBL, CL, and LMS, show strong factor loadings above 0.70, ensuring robust measurement.

Table 5. Construct on Reliability and Convergent Validity of Behavior Scale Items

Construct	Items	Factor Loading	Mean Value	Composite Reliability	Average Variance Extracted	Cronbach's Alpha
Artificial Intelligence	AIB1	0.644	2.984	0.856	0.668	0.730
	AIB2	0.159	3.000			
	AIB3	0.804	3.219			
Project-Based Learning	PBLB1	0.797	3.952	0.937	0.832	0.895
	PBLB2	0.806	3.889			
	PBLB3	0.894	3.885			
Gamification	GB1	0.553	3.476	0.826	0.615	0.664
	GB2	0.516	3.381			
	GB3	0.776	3.411			
Cooperative Learning	CLB1	0.692	3.509	0.918	0.790	0.861
	CLB2	0.829	3.476			
	CLB3	0.848	3.454			

Construct	Items	Factor Loading	Mean Value	Composite Reliability	Average Variance Extracted	Cronbach's Alpha
Learning Management System	LMSB1	0.835	3.587	0.951	0.868	0.923
	LMSB2	0.842	3.571			
	LMSB3	0.927	3.576			

Source: Survey Data (2024)

The composite reliability (CR) values for all constructs exceed 0.70, which confirms that the items within each construct consistently measure the intended concept. To assess convergent validity, the average variance extracted (AVE) was examined. All constructs surpass this threshold, with above 0.5. Cronbach's Alpha (α) was evaluated to measure internal consistency, with a threshold of $\alpha \geq 0.70$ being acceptable. PBL (0.895), CL (0.861), and LMS (0.923) display strong reliability, while AI (0.73) falls within the acceptable range. However, Gamification (0.664) is slightly below the ideal threshold, indicating potential reliability concerns. The result of discriminant validity is shown in Table 6.

Table 6. Discriminant Validity of Behavior Scale Items

Correlations	Artifical Intelligence	Project Based Learning	Gamification Mean	Cooperative Learning Mean	Learning Management System Mean
Artifical Intelligence	0.817				
Project Based Learning	0.76	0.912			
Gamification	.348**	0.205	0.784		
Cooperative Learning	0.213	.404**	.530**	0.888	
Learning Management System	.326**	.538**	.284*	.550**	0.931

Source: Survey Data (2024)

Result of Hypotheses Testing

This study employed Pearson correlation analysis to test the proposed hypothesis. The study proposed three alternative hypotheses. According to the result of the Pearson correlation analysis, those three research alternative hypotheses are accepted in this study. The result of the Pearson correlation analysis is shown in Table 7.

Table 7. Pearson Correlation Analysis

No.	Hypothesis	Pearson Correlation	P-Value	Decision
1.	Knowledge →Attitude	.783	.000	Accept
2.	Attitude → Behavior	.866	.000	Accept
3.	Knowledge → Behavior	.809	.000	Accept

Source: Survey Data (2024)

According to the result of person correlation analysis , the correlation between Knowledge and Attitude (r = 0.783, p = 0.000) is strong and statistically significant, suggesting that higher knowledge levels are associated with a more positive attitude. The relationship between Attitude and Behavior (r = 0.866, p = 0.000) is even stronger, indicating that a positive attitude has a significant influence on behavior. Similarly, Knowledge and Behavior (r = 0.809, p = 0.000) show a strong correlation suggesting that increased knowledge directly impacts behavior.

This section presents the research findings in relation to the four objectives and outlines their implications for policy, institutional practice, and academic discourse. Specifically, the study evaluates instructors' knowledge, attitudes, and behaviors concerning the principles of Education 5.0 within the context of private higher education in Myanmar, employing five constructs to represent the concept: Artificial Intelligence, project-based learning, gamification, cooperative learning, and learning management systems.

CONCLUSIONS
Objectives 1: To identify the instructors' knowledge, attitude, and behavior on education 5.0 incubators.

The study employed descriptive statistics to provide evidence for objective 1, which aimed to identify the instructors' knowledge, attitude, and behavior regarding the 5.0 principles of education. The results of the study reveal that the overall mean values of each variable were 3.32, 3.67, and 3.48, respectively. Therefore, the respondents in this study agree with all scale items of the 5.0 education principles. The lowest mean value is in the knowledge dimensions because instructors do not link their tasks to the Education 5.0 principle when implementing these principles, such as using AI tools, cooperative learning, project-based learning style, gamification, and utilizing LMS. The highest mean value is in attitude dimensions, which indicates that instructors have a strong desire to apply the Education 5.0 principles in relevant ways. Thus, the study suggested that the school management team and other responsible persons should establish a solid foundation in education 5.0 principles and design the necessary infrastructure to implement these principles in practical ways.

Objectives 2: To test the relationship between the Instructor's knowledge and attitude for education 5.0 incubators.

According to the results of the Pearson correlation analysis, a positive correlation exists between knowledge and attitude. Instructors' knowledge strongly shapes their attitude toward the 5.0 principles of education. This study focuses on the majority of instructors in private higher education institutions, who are more likely to be familiar with modern education principles, as these institutions offer degrees from Western-led universities locally. In this type of work, instructors typically work with Western-led educational principles in various forms. Therefore, they have the desire to implement the Education 5.0 principle in terms of aligning their institution.

Objective 3: To analyze the correlation of Instructors' attitude and behavior for education 5.0 incubators

A statistically significant positive relationship was found between attitude and behavior in relation to the 5.0 principles of education. This study strongly suggests that if institutions' management instills an uncompromising attitude in instructors that reflects the actual behavior of the education 5.0 principles. The attitude reflects the way of thinking behind the instructors' education 5.0 principles. This thinking will help them view their behavior from an academic perspective.

Objective 4: To determine the test on the relationship between Instructors' knowledge and behavior for education 5.0 incubators.

The results of the Pearson correlation analysis showed a significantly positive relationship between knowledge and behavior. This finding examines the extent to which respondents possess sound knowledge of Education 5.0 principles, positing that such knowledge increases the likelihood of their behavior aligning with these principles in academic practice. If they do not know this principle, it would not be possible to behave in their academic aspect. Therefore, the responsible administrators of this respective institution should incorporate the education 5.0 knowledge into instructors' job-related concerns.

Implications

Policy Implications

The Ministry of Education in Myanmar enacted the Private Higher Education Law in 2024 to guide private higher education institutions. This study will enable policymakers in education in Myanmar to consider the instructors' readiness for the modern education 5.0 principles. The policymakers of Myanmar should construct education policies that align with three key pillars: learners' conditions, instructors' qualifications, and institutional arrangements. The Ministry should develop its National Qualification Framework in accordance with the 5.0 education principles. This study supports the key concept of education 5.0 principles from the readiness perspective of instructors.

Practical Implications

Private higher education institutions should update themselves by revising and upgrading their key educational principles. The institution should be aware of its development based on the qualifications of its instructors and the quality assurance framework. A private higher education institution differs from other business types. It should lead to long-term focus. The institution fills the gap in the human resources development scheme, which is typically a challenge in Myanmar, as a developing country. Therefore, private higher education should develop instructors' qualifications to respond to the updated education principles, particularly those outlined in the 5.0 principles.

Additionally, bridging the gap between theoretical knowledge and practical application through internships, industry collaborations, and experiential learning can further strengthen student outcomes. Technology integration, including learning management systems (LMS), artificial intelligence (AI)-based education tools, and digital resources, can enhance accessibility and engagement. To ensure long-term institutional development, PHEIs should implement strategic policies, student feedback mechanisms, and international collaborations to expose students to global best practices, ultimately improving academic performance and employability. By adopting these approaches, private higher education institutions in Myanmar can create a more effective and sustainable learning environment that nurtures well-rounded graduates prepared for the evolving job market.

Theoretical Implications

This study contributes to the academic discourse by addressing the gap in scale development related to the integration of Education 5.0 principles—Artificial Intelligence (AI), Project-Based Learning (PBL), Cooperative Learning (CL), Gamification (GB), and Learning Management Systems (LMS)—in private higher education institutions in Myanmar. While prior research has explored these individual principles, a comprehensive scale to measure their collective impact on students' knowledge, attitudes, and behavior remains lacking. By developing and validating a reliable

measurement model, this study provides a foundation for future research and empirical testing in higher education settings. The strong correlations found in this study reinforce the importance of AI-driven personalized learning, PBL for real-world problem-solving, CL for collaborative skill-building, gamification for engagement, and LMS for digital transformation in education. The findings provide a validated framework for evaluating how these principles influence student learning outcomes, thereby filling a critical research gap. Future studies can build on this work by refining the scale, testing it across diverse educational contexts, and examining its long-term impact on student success and institutional effectiveness

LIMITATIONS & FURTHER RESEARCH

This study is limited to instructors from private higher education institutions in Yangon, which may not fully reflect the perspectives of educators in public or rural institutions across Myanmar. In addition, the reliance on self-reported survey data introduces potential response bias and restricts the ability to establish causal relationships between knowledge, attitude, and behavior. Future research should expand the scope by including instructors from public universities and rural institutions to provide a more comprehensive view of Myanmar's education sector. Longitudinal and mixed-method studies are also recommended to capture causal relationships and deeper insights into the implementation of Education 5.0 principles.

REFERENCES

Ahmad, S. (2023). *Education 5.0: Requirements, enabling technologies, and future directions.* https://doi.org/10.1049/pbpc065e_ch14

Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, *50*(2), 179-211.

Ajzen, I., & Fishbein, M. (2000). Attitudes and the attitude-behavior relation: Reasoned and automatic processes. *European review of social psychology*, *11*(1), 1-33.

Alacapınar, F. (2008). Effectiveness of project-based learning. *Eurasian Journal of Educational Research (EJER)*, (33). https://doi.org/10.1007/s10798-008-9063-7

Andrade, C. (2020). The limitations of online surveys. *Indian journal of psychological medicine*, *42*(6), 575-576. https://doi.org/10.1177/0253717620957496

Alias, N. S. (2017). Perception of teacher on cooperative learning. *MATEC Web of Conferences, 150,* 05068. https://doi.org/10.1051/matecconf/201815005068

Bandura, A. (1976). Self-reinforcement: Theoretical and methodological considerations. *Behaviorism*, *4*(2), 135-155.

Bourdieu, P. (1990). *The logic of practice*. Stanford university press.

Hair, J. F. Jr. (2017). PLS-SEM or CB-SEM: Updated guidelines on which method to use. *International Journal of Multivariate Data Analysis, 1*(1), 107–123. https://doi.org/10.1504/ijmda.2017.087624

Kapp, K. M. (2012). *The gamification of learning and instruction: game-based methods and strategies for training and education*. John Wiley & Sons. https://doi.org/10.1145/2207270.2211316

Keser, H. (2019). Technology trends, education 4.0 and beyond. *Contemporary Educational Researches Journal, 9*(3), 40–45. https://doi.org/10.18844/cerj.v9i3.4269

Kitano, H. (2016). *Society 5.0: Co-creating the future.* Keidanren. https://www.keidanren.or.jp/en/policy/2018/095_booklet.pdf

Kyi, K. M. (2000). *Economic development of Burma: A vision and a strategy, a study by Burmese Economic Association.* https://doi.org/10.2307/2659595

Lall, M. (2023). *Myanmar: Politics, economy, society* (N. F. Adam Simpson, Ed.). Routledge. https://doi.org/10.4324/9781003386063-17

Lwin, T. (2019). *Education in Burma (1945–2000).* Thinking Classroom Foundation.

McGettrick, B. (2006). *Foundations of educational systems.* In *Quality of human resources: Education* (Vol. 1). UNESCO. https://doi.org/10.1080/1353832970030304

Muzira, D. R. (2020). Perception of educators towards the adoption of Education 5.0: A case of a state university in Zimbabwe. *East African Journal of Education and Social Sciences, 1*(2), 43–53. https://doi.org/10.46606/eajess2020v01i02.0020

M. M. (2024). *A Study on the Role of Basic Education in Myanmar (2002/03-2022/23)(Myo Myint Thu, 2024)* (Doctoral dissertation, MERAL Portal).

Nguyen, N. T., Wereley, S. T., & Shaegh, S. A. M. (2019). *Fundamentals and applications of microfluidics.* Artech house.

Padone. (2023). *Enrolment in state-run universities down '70%' since coup. University World News.* https://www.universityworldnews.com/post.php?story=20230309103718327

Rane, N. C. (2024). Contribution of ChatGPT and similar generative artificial intelligence for enhanced climate change mitigation strategies. *SSRN.* https://doi.org/10.2139/ssrn.4681720

Rogers, E. M. (1995). Lessons for guidelines from the diffusion of innovations. *The Joint Commission journal on quality improvement*, *21*(7), 324-328.

Sáez-López, J. M. (2022). Gamification and gaming proposals, teachers' perceptions and practices in primary education. *Interaction Design and Architecture(s) Journal, 53,* 213–229. https://doi.org/10.55612/s-5002-053-011

Santos, L. C. (2023). The evolution of education and emerging educational technologies: A comparative analysis between education 4.0 and education 5.0. *Federal Rural University of Pernambuco.* https://doi.org/10.56238/sevened2023.008-015

Schwartz, S. (1975). The justice of need and the activation of humanitarian norms. *Journal of Social Issues*, *31*(3), 111-136.

Shah, R. (2019). Myanmar's education system: Historical roots, the current context, and new opportunities. In R. Shah, *Education and international development working paper 34.* https://doi.org/10.1007/978-3-319-93812-7_4

Soe, A. M. Z., Swe, M. S. N., Aye, N. N. K. M. & Mon, N. H. (2017). *Reform of the education system: Case study of Myanmar.* Parliamentary Institute of Cambodia.

Sywelem, M. M. (2024). Artificial intelligence and the sustainability of educational services: An overview. *World Journal of Social Sciences and Humanities, 1*(10), 8–17. https://doi.org/10.12691/wjssh-10-1-2

Thurstone, L. L. (1931). Multiple factor analysis. *Psychological Review, 38*(5), 406–427. https://doi.org/10.1037/h0069792

Watts, T. (2023, April 14). *The role of technology in the future and its impact on society*. Times of India – Readers' Blog. https://timesofindia.indiatimes.com/readersblog/amitosh/the-role-of-technology-in-the-future-and-its-impact-on-society-52565/

Wonu, N. (2021). Test of significance of correlation coefficient in science and educational research. *International Journal of Mathematics and Statistics Studies, 9*(2), 53–68. https://doi.org/10.21275/sr22915140002

Yousuf, M., & Ali, A. (2021). The role of artificial intelligence in education: Current trends and future prospects. In *2021 International Conference on Information Science and Communications Technologies (ICISCT)*. 1–7. IEEE. https://doi.org/10.1109/icisct52966.2021.9670009