Tuijin Jishu/Journal of Propulsion Technology
ISSN: 1001-4055
Vol. 45 No. 2 (2024)

The Application of Critical Thinking in the Self-Learning Process for Students in Ho Chi Minh City: A case of Online Learning

Nguyen Thi Ngoc Linh
Faculty of Tourism, Van Lang University, Ho Chi Minh City, Vietnam
Email: linh.ntn@vlu.edu.vn

Abstract
Self-learning plays a crucial role in the education of students, particularly the Generation Z. This generation, characterized by their digital fluency and access to vast information, benefits greatly from the practice of self-directed learning. This study explores the significance of self-learning for students in general and the Generation Z in particular in Vietnam. It highlights how self-learning enables students to acquire new knowledge, enhances their critical thinking skills, and fosters personal growth. The study also emphasizes the importance of self-motivation, resourcefulness, and adaptability in the online learning process. With the increasing reliance on technology and the evolving nature of work, self-learning becomes an essential tool for students to stay relevant, develop lifelong learning habits, and thrive in the rapidly changing world.

Keywords: education, self-learning, critical thinking skills, lifelong learning, technology.

1. Introduction

The Generation Z, born between the mid-1990s and early 2010s, is growing up in a world shaped by rapid technological advancements. With smartphones, social media, and instant access to information, this generation is often referred to as the "digital natives." As they navigate through the complexities of the modern era, one skill becomes increasingly vital for their success: lifelong learning. Lifelong learning refers to the continuous acquisition of knowledge, skills, and competencies throughout one's life. In today's fast-paced and ever-changing world, the ability to adapt, learn, and grow is essential. For the Generation Z, lifelong learning is not just a choice; it is a necessity. Technology plays a pivotal role in shaping the learning landscape for the Generation Z. With the internet at their fingertips, they have access to an unprecedented wealth of information and resources. They can explore diverse topics, engage in online courses, and connect with experts from around the globe. Technology has democratized education, allowing young learners to take control of their own learning journeys. However, the reliance on technology also presents challenges. The constant influx of information can be overwhelming, making it crucial for the Generation Z to develop critical thinking skills. They need to discern reliable sources, evaluate information, and think critically to distinguish between fact and opinion. Technology, when used effectively, can empower the Generation Z to become discerning learners and critical thinkers. [3] In this context, this article explores the significance of lifelong learning for the Generation Z and the role of technology in facilitating their educational journey. It delves into the benefits of embracing a lifelong learning mindset, such as adaptability, innovation, and personal growth. Furthermore, it examines how technology can be harnessed to enhance self-directed learning, foster collaboration, and expand educational opportunities. As the Generation Z steps into an uncertain future, their ability to embrace lifelong learning and leverage technology will be instrumental in navigating the challenges and seizing the opportunities that lie ahead. By cultivating a passion for learning, embracing technology, and developing critical thinking skills, the Generation Z can position themselves as lifelong learners ready to thrive in the dynamic and ever-evolving world.

2. Literature review

The youngest generation of students, commonly referred to as Gen Z, exhibit a preference for independent learning styles that are more visual and kinesthetic, rather than passive (Hampton and Keys, 2017; Isaacs et al., 2020). Research indicates that Gen Z students often seek collaboration, initially engaging in independent thinking and then discussing ideas as a group (Williams, 2019). [4] Considering that learning style plays a crucial role in the individual learning process (Zoghi et al., 2010; Burger and Scholz, 2014), educators should take this into account when teaching Gen Z students. The traditional teacher-centered teaching approach may not align well with the learning style of Gen Z students. Therefore, it is necessary for educators to adapt their teaching practices and transition from a teacher-centered approach to a learner-centered one. An instructional method called Sandwich teaching recognizes the importance of individual learning by incorporating alternating phases of collective and individual learning (Bock et al., 2020). The collective learning phase resembles traditional lectures but is kept within the students' attention span of 20-25 minutes (Bunce et al., 2010). The individual learning phase involves active learning, where students apply their acquired knowledge through specific tasks such as partner discussions, interviews, or small-group work. The alternating structure of collective and individual learning phases facilitates a seamless transition between passive and active learning experiences. Sandwich teaching, initially developed in the United Kingdom, is a teaching model that incorporates both theoretical learning and practical application. [5] It was first implemented in medical classroom settings at Heidelberg University in Germany. This approach emphasizes the integration of theory and practical work through activities such as group discussions, cross-learning, and learning reports. By adopting this teaching method, students take on an active role in their learning process by preparing before class, engaging in discussions, and interacting with their peers. Meanwhile, teachers assume the role of guides and facilitators, providing support and assistance to students throughout the teaching process.

3. Research Methodology

Theoretical research methods involve the study and analysis of existing theories, concepts, and published research pertaining to child development and emotions. This type of research serves to establish a knowledge base and theoretical framework, offering concepts and ideas to comprehend and elucidate phenomena within the field of study. On the other hand, the observational method entails the systematic observation and documentation of children's behavior and facial expressions in real-life situations. When investigating children's emotions, direct observation of emotional expressions such as crying, laughter, or fear can provide valuable insights into their development and emotional manifestation. Observation methods can be implemented through the use of audio or video recording systems, or through direct visual monitoring.

4. Research result and discussion

The results of fostering a lifelong-learning mindset and applying skills are diverse and can bring numerous benefits to individuals and society. From personal development to creating career opportunities, adapting to change, fostering creativity, improving communication and collaboration, and contributing to social development, the outcomes are significant and far-reaching.

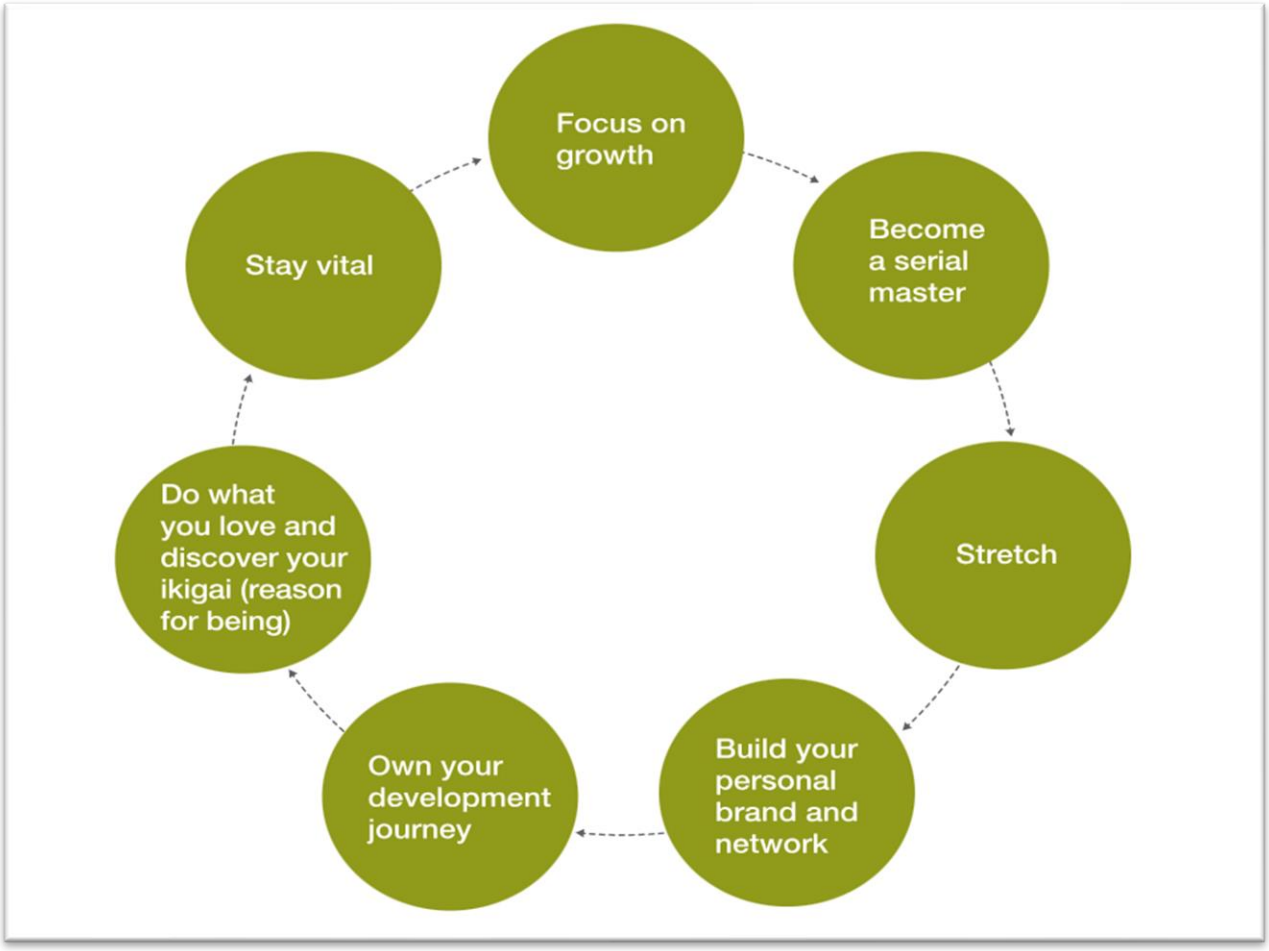

Figure 1. A lifelong-learning mindset consists of seven essential elements
Source : Nick van Dam, Learn or Lose, Breukelen, Netherlands (2016)

A lifelong-learning mindset encompasses seven essential elements that are crucial for continuous growth and development. The first element is curiosity, which drives individuals to explore and seek knowledge, nurturing a natural inquisitiveness about the world. Open-mindedness is the second element, encouraging individuals to embrace different ideas, perspectives, and experiences, fostering a willingness to consider alternative viewpoints. The third element is adaptability, emphasizing the importance of being flexible and open to change, embracing new technologies and acquiring new skills as the world evolves. Persistence is the fourth element, highlighting the need for determination and resilience in the face of challenges, enabling individuals to maintain motivation and continue learning and improving. Critical thinking is the fifth element, emphasizing the ability to analyze information, evaluate its credibility, and think independently and logically to solve problems effectively. Reflection, as the sixth element, involves introspection and self-assessment to evaluate one's own learning progress, strengths, and areas for improvement, ultimately enhancing the learning experience. The final element is collaboration, recognizing the value of working together and actively participating in group projects, discussions, and interactions. This fosters the exchange of ideas, learning from others, and the development of essential interpersonal skills. the foundation of a lifelong-learning mindset, enabling individuals to adapt, grow, and succeed in a rapidly changing world. By embodying these elements, individuals can embrace continuous learning and achieve personal and professional fulfillment throughout their lives.

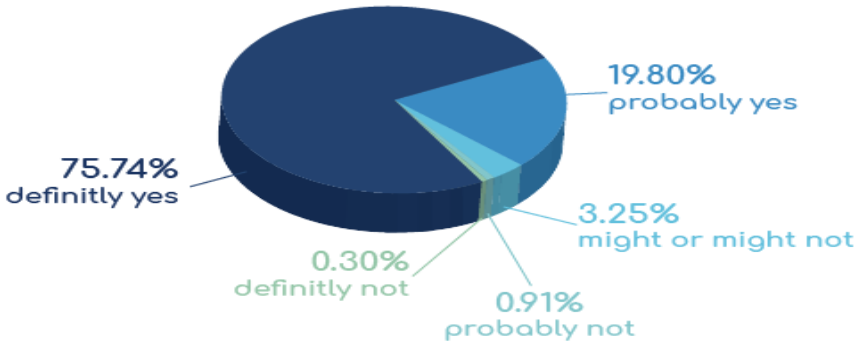

Figure 2. Do you believe that critical thinking skills are necessary in today's world
Source: Reboot foundation (2018)

Critical thinking skills are more important than ever in today's world. With the abundance of information available and the prevalence of fake news and misinformation, individuals need the ability to critically evaluate and analyze the information they encounter. In a rapidly changing and complex society, critical thinking skills enable individuals to problem-solve effectively, navigate diverse perspectives, and make informed decisions. They are particularly valuable in the digital age, where information overload and the need for media literacy are prominent. Additionally, critical thinking skills foster adaptability, ethical decision-making, and personal growth. By developing and applying critical thinking skills, individuals can better navigate the challenges and complexities of the modern world, ultimately leading to more informed and responsible participation in society.

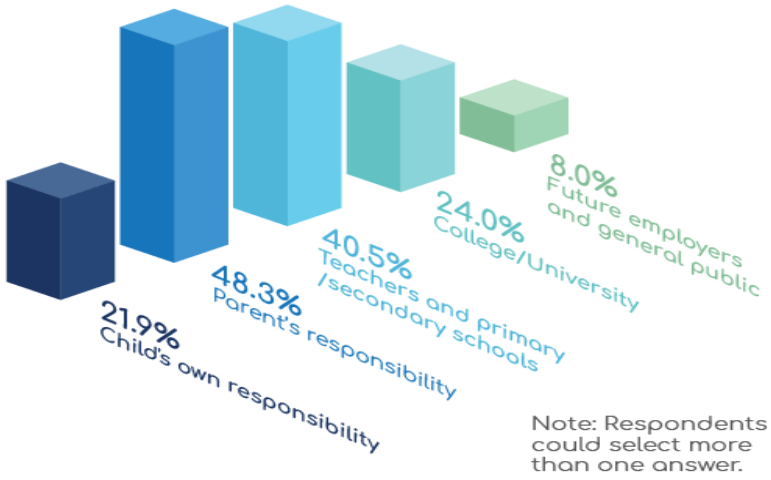

Figure 3. Who is responsible to teach critical thinking to your children
Source: Reboot foundation (2018)

An important foundation for the development of children's critical thinking skills is the support from parents and teachers at school. Both environments play a crucial role in building the foundation for children's critical thinking abilities. Parents have a primary role in imparting values and skills to their children. By creating a safe, encouraging, and exploratory environment, parents can foster their children's curiosity, learning, and critical thinking. By asking questions, encouraging discussions, and providing appropriate challenges, parents can help their children develop critical thinking and effective information management skills. Teachers at school also play a significant role in teaching and creating opportunities for children to develop critical thinking skills. Teachers can design creative educational activities, encourage student discussions and questioning, and provide constructive feedback to promote

critical thinking. Additionally, teachers can train students in research skills, information analysis, and evaluation to become intelligent information consumers. Collaboration between parents and teachers is essential to ensure that children receive consistent and cohesive support in developing critical thinking skills. Parents can communicate with teachers to understand what is being taught and provide additional support at home. Together, parents and teachers can build a complete, encouraging, and inspiring learning environment for children to develop comprehensive critical thinking skills.

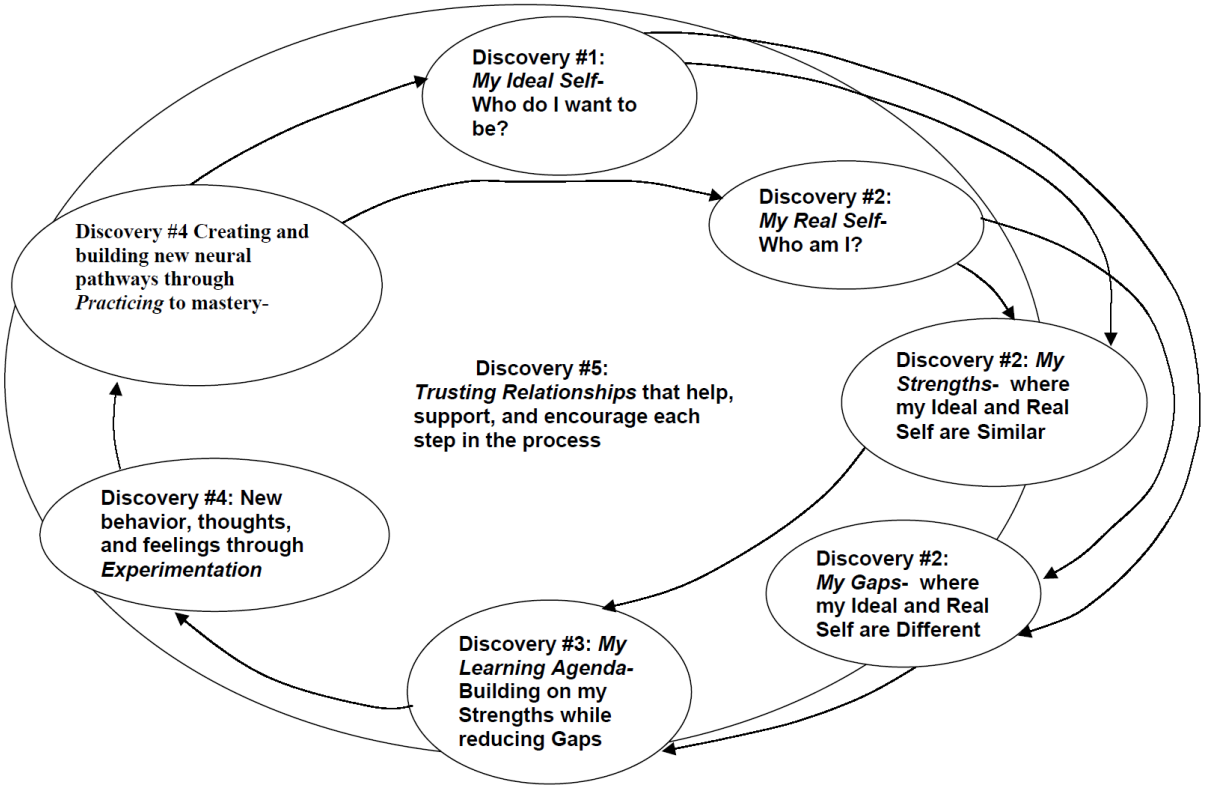

Figure 4. Theory of self-directed learning

Source: R. Boyatzis (2020)

The theory explores the process of individual learning and raises considerations about providing support during this journey. One notable theory regarding individual learning is the one formulated by Dr. R. Boyatzis. This theory emphasizes the capacity of individuals to take ownership of their own learning. It outlines the stages involved in becoming a self-directed learner. The Boyatzis theory consists of a stage-based model that guides learners or educators in empowering individuals to learn and directing their learning towards desired outcomes. Self-learning plays a crucial role in the personal and professional development of Generation Z. In the modern world with rapid advancements and constant change, traditional educational models are not sufficient to keep up with progress and new trends. Generation Z, born in the digital age, has the ability to access information and resources like never before. They have the opportunity to explore different topics, learn new skills, and expand their knowledge beyond the limitations of traditional classrooms. Self-learning empowers Generation Z to manage their own learning process and pursue areas of interest. They can delve deep into subjects that excite them, participate in online courses, attend webinars, watch educational videos, and utilize interactive learning platforms. Adopting a self-directed approach to learning allows them to customize their learning experience to align with their unique passions and career goals. Furthermore, self-learning develops essential skills such as critical thinking, problem-solving, adaptability, and creativity. Generation Z can develop an expansive mindset where they face challenges, seek feedback, and continuously strive for self-improvement. They become independent learners who actively seek information,

analyze different perspectives, and evaluate the effectiveness of information sources. For example, a Generation Z member interested in programming can utilize online programming tutorials, engage in programming communities, and even contribute to open-source projects. They can experiment with different programming languages, collaborate with like-minded individuals, and build a portfolio of projects to showcase their skills. This self-learning process not only enhances technical abilities but also nurtures confidence and an entrepreneurial spirit. In a rapidly evolving job market, where traditional career paths are changing and emerging industries are on the rise, the ability to self-learn becomes a competitive advantage. Those belonging to Generation Z who embrace self-learning demonstrate adaptability, perseverance, and a commitment to keeping up with trends. They can learn in-demand skills, explore emerging fields, and adapt to new technologies and industries. Overall, self-learning empowers Generation Z to take control of their own learning journey, expand their knowledge beyond traditional education, and develop the skills necessary for success in the modern world.

5. Recommendation

Educational institutions, parents, and policymakers should encourage and support a culture of lifelong learning among the Generation Z. Emphasize the value of continuous learning, curiosity, and personal growth throughout their educational journey and beyond. Schools and universities should embrace technology as a powerful tool for learning. Incorporate digital resources, online courses, and interactive platforms to enhance students' access to information, promote collaborative learning, and develop digital literacy skills. Place a strong emphasis on critical thinking skills within the educational curriculum. Encourage students to question, analyze, and evaluate information from various sources, enabling them to make informed decisions and navigate the vast digital landscape effectively. [2] Educators and mentors should play an active role in guiding the Generation Z's self-learning journey. Offer support, guidance, and mentorship to help students navigate through the abundance of information available online, develop effective learning strategies, and set meaningful learning goals. Encourage students to take ownership of their learning by promoting self-directed learning. Teach them how to set goals, manage their time effectively, and utilize technology tools for self-paced learning. [6] Foster an environment that values autonomy, curiosity, and independent thinking. Facilitate opportunities for the Generation Z to collaborate, network, and engage with peers, experts, and mentors through online platforms and communities. Encourage the exchange of ideas, collective problem-solving, and the sharing of knowledge and experiences. As technology and the world continue to rapidly evolve, it is essential to adapt and innovate educational approaches. Embrace emerging technologies, explore new teaching methodologies, and stay updated with the latest trends in order to provide relevant and engaging learning experiences for the Generation Z. The knowledge acquired during university studies may become outdated or less relevant by the time students graduate. This phenomenon is commonly known as "knowledge obsolescence." With the rapid pace of technological innovation, new tools, techniques, and methodologies emerge, rendering older ones obsolete. This can affect various fields, particularly those heavily reliant on technology, such as computer science, engineering, and healthcare. Industries and market demands are constantly evolving. New trends, market shifts, and disruptive technologies can reshape the landscape and require professionals to adapt their knowledge and skills accordingly. Graduates may find that the industry they studied for has transformed or that new industries have emerged. Ongoing research and new discoveries can challenge existing knowledge and theories. In scientific disciplines, breakthroughs and advancements can lead to revisions or even debunking of previously accepted concepts. [7] This means that what students learn in university may evolve or change as new knowledge emerges. The world is constantly changing, and societal, economic, and environmental factors can influence the relevance of certain knowledge areas. Issues such as climate change, globalization, and social dynamics can reshape the focus and priorities in different fields. To mitigate the risk of knowledge obsolescence, it is essential for students to cultivate a mindset of lifelong learning. [1] This involves continuously updating their knowledge and skills throughout their professional careers. It is crucial to develop transferable skills such as critical thinking, problem-solving, adaptability, and a capacity for self-directed learning. These skills will enable graduates to navigate changing landscapes, acquire new knowledge, and stay relevant in their chosen fields. Additionally, universities can play a role in addressing this issue by incorporating more interdisciplinary approaches, emphasizing fundamental

concepts and principles rather than specific details, and fostering a culture of continuous learning and professional development.

6. Conclusion

In the constantly changing world, the knowledge acquired during university studies may become outdated when students graduate. However, to overcome this situation, students need to develop a lifelong learning mindset and adaptability to changes. Additionally, universities can support this by integrating technology into education, focusing on developing transferable skills, and creating an environment that fosters self-directed learning and community engagement. Most importantly, students need to nurture a spirit of lifelong learning and never stop updating their knowledge. By maintaining curiosity, flexibility, and a positive attitude towards acquiring new knowledge and skills, students can overcome the challenges of outdated knowledge and succeed in their careers.

Conflict of interests

None

Acknowledgement

This research could not have been completed without the support Van Lang University (69/68 Dang Thuy Tram Street, Ward 13, Binh Thanh District, Ho Chi Minh, Vietnam). Sincere thanks to all people who contributed to this study. Thus, thank you for your support and encouragement during the procedure.

References

1. Arizo-Luque, V., Ramirez-Baena, L., Pujalte-Jesús, M. J., Rodríguez-Herrera, M. Á., Lozano-Molina, A., Arrogante, O., & Díaz-Agea, J. L. (2022, May). Does self-directed learning with simulation improve critical thinking and motivation of nursing students? A pre-post intervention study with the MAES© methodology. In Healthcare (Vol. 10, No. 5, p. 927). MDPI.
2. Håkansson Lindqvist, M., Mozelius, P., Jaldemark, J., & Cleveland Innes, M. (2024). Higher education transformation towards lifelong learning in a digital era–a scoping literature review. International Journal of Lifelong Education, 43(1), 24-38.
3. Gonzalez-Argote, J., & Castillo-González, W. (2024, January). Problem-Based Learning (PBL), review of the topic in the context of health education. In Seminars in Medical Writing and Education (Vol. 3, pp. 57-57).
4. Imjai, N., Aujirapongpan, S., & Yaacob, Z. (2024). Impact of logical thinking skills and digital literacy on Thailand's generation Z accounting students' internship effectiveness: Role of self-learning capability. International Journal of Educational Research Open, 6, 100329.
5. Taranto, D., & Buchanan, M. T. (2020). Sustaining lifelong learning: A self-regulated learning (SRL) approach. Discourse and Communication for Sustainable Education, 11(1), 5-15.
6. Mozelius, P., Cleveland-Innes, M., Lindqvist, M. H., & Jaldemark, J. (2024). Critical Aspects of a Higher Education Reform for Continuous Lifelong Learning Opportunities in a Digital Era. Electronic Journal of Knowledge Management, 22(1), 26-39.
7. Wei, F. (2021). Cultivation of Students' Critical Thinking in the Era of Artificial Intelligence–Based on the Perspective of Training Mode and Education Subjects. In Application of Intelligent Systems in Multi-modal Information Analytics: 2021 International Conference on Multi-modal Information Analytics (MMIA 2021), Volume 2 (pp. 786-790). Springer International Publishing.