

Foreword

**Empowering Digital Learners: Leading the
Future of Education in ASEAN through
Language, Art, Science, and Mathematics**

Siti Nor Amalina Ahmad Tajuddin & Shahrul Kadri Ayop

Faculty of Languages and Communication & Faculty of Sciences and Mathematics

Sultan Idris Education University, Malaysia

sitinoramalina@fbk.upsi.edu.my

Digital technology has revolutionized various sectors, including education. Teaching and education are always evolving due to technological advances, societal requirements, and how individuals learn. To prepare students for the 21st century, ASEAN has prioritized digital learning tools and methods. In addition to transforming ASEAN education to improve inclusion, equity, quality, and relevance, educators must be trained to adapt to the digital transformation of education systems to use innovative digital pedagogies. Thus, effective learning outcome evaluations are essential in a future where artificial intelligence and generative AI are infiltrating people's education, employment, and life.

This special issue, which was "Leading the Future of Teaching and Education," is based on the 5th AsTEN Conference in Genting Highland, Pahang, Malaysia year 2023, and explores new approaches that will impact education. This topic is current and important as we traverse the 21st century, where education is the foundation for social progress and individual empowerment. Leading researchers, educators, practitioners, and postgraduate students discussed and shared their perspectives on these crucial topics during the conference.

Specifically, using language, art, science, and math to empower digital learners highlights a holistic approach to education. This strategy combines conventional and modern methods to create a well-rounded, future-ready generation. This special issue of the AsTEN Journal has seven papers that demonstrate various and dynamic methods to empower digital learners through language, art, science, and mathematics. For example, some authors discussed school-based resilience leadership framework, flipped classrooms, STEM education, mathematics innovation, multimodal learning, curriculum design and implementation, and stress management for mindful practices.

The main concern in ASEAN education is the language. Communication and information access depend on language education in the digital era. ASEAN students often study more than two languages. Incorporating digital tools, they facilitate cross-cultural contact and provide multilingual information. For example, mobile-assisted language learning and Internet-based applications in the Philippines and Thailand have helped them improve their English proficiency, which is essential for global competitiveness (Ancheta, 2022; Ulla et al., 2020). An integrated STEAM initiative using mobile technology in the classroom has enhanced Indonesian primary

2 S.N.A.A. TAJUDDIN & S.K. AYOP

school students' mathematical reasoning scores (Siregar et al., 2023).

Undeniably, through classroom technology, the digital revolution in education is changing how students learn. Artificial intelligence, virtual reality, and digital resources (computers, tablets, and Internet platforms) make education more interactive, personalized, and accessible. Singapore, Malaysia, and Vietnam have led ASEAN in incorporating digital technologies into education. These countries have policies supporting digital literacy, blended learning, and EdTech in classrooms (UNESCO, 2023). For instance, the Sarawak State Library's PANDei (People Accessible Network for Digital Empowerment & inclusion) initiative promotes digital literacy and inclusion in underprivileged and rural communities. As a winner of the 2022 UNESCO International Literacy Prize, this initiative equips individuals with digital literacy skills, enhancing accessibility and inclusive learning settings (UNESCO, 2022). In line with UNESCO's Southeast Asia digital literacy and EdTech integration goals, Malaysia is investing in digital literacy through creative programs that bridge the digital gap.

In other example, the EdTech Masterplan 2030 in Singapore suggests ways schools might use technology to improve learning and to ensure success in a tech-driven world. This entails personalizing learning using AI and sharing tech-enabled materials and practices across schools (Ministry of Education Singapore, 2023). Malaysia's Digital Education Policy emphasizes ICT-based education to improve students' and instructors' digital skills. These include the Computer Laboratory Project, SchoolNet Internet Connectivity, School Access Centre, and Digital Tech@School (Ministry of Education Malaysia, 2023). Also remarkable is the inclusion

of STEM education in the Vietnamese national curriculum. Virtual laboratories and internet tools allow Vietnamese students in rural places to learn science hands-on (Tuong et al., 2023). This strategy supports the objective of creating an innovative workforce with technology skills.

Other than that, media literacy education is becoming highly imperative as students' lives are increasingly influenced by social media. For example, since many students spend a lot of time on Instagram, TikTok, Facebook, Twitter, and Snapchat, it will eventually distract them from their school academics (Siebers et al., 2023). Moreover, social media impacts students' self-esteem and identity. Constant comparison to classmates and influencers can make them feel inadequate, undermining their self-esteem. Thus, critical media engagement encourages critical thinking by allowing students to analyze audio, visual, and written communications appropriately (Ahmad Tajuddin et al., 2024). Media literacy helps children and teenagers spot fake news and identify reliable sources in a misinformation-filled world. Furthermore, educators and parents can always practice healthy discussions, letting them know the difference between the real-life and curated nature of social media. This improves their self-esteem, civic involvement and decision-making, making them more educated and responsible citizens. By teaching children about privacy, ethical consumption of media, and the risks of online damage, media literacy supports digital safety (Park et al., 2020).

In conclusion, educators, parents, policymakers, and stakeholders must collaborate and share expertise as ASEAN nations adopt digital learning. We can build an educational environment that empowers digital learners and shapes regional education by working together. Digital learners in ASEAN must be empowered

via language, art, science, and math to prepare for the future. The digital transformation of education offers many potentials to improve learning and innovation. To ensure that all students benefit from these improvements, the digital gap and teacher training towards digitalization must be addressed.



References

- Ahmad Tajuddin, S. N. A., Bahari, K. A., Mohamed AlMajdhoub, F., Maliki, N. K., & Balraj Baboo, S. (2024). Developing and measuring an assessment instrument for media literacy among digital natives using Digital Intelligence (DQ) framework. *Journal of Media Literacy Education, 16*(2), 29-45. <https://doi.org/10.23860/JMLE-2024-16-2-3>
- Ancheta, J. R. (2022). Language Learning through Digital Media: Investigating the Strategies among Selected International Students in the Philippines. *International Journal of Learning, Teaching and Educational Research, 21*(11), 208-226.
- Ministry of Education Malaysia. (2023). *Digital Education Policy*. Multi Educational Book Enterprise.
- Ministry of Education Singapore. (2023). *Our educational technology journey*. Retrieved from <https://www.moe.gov.sg/education-in-sg/educational-technology-journey>
- Park, Y., Gentile, D., Morgan, J., He, L., Allen, J., Jung, S. M., Chua, J., & Koh, A. (2020). *2020 Child Online Safety Index: A Findings and Methodology*. DQ Institute.
- Siebers, T., Beyens, I., Pouwels, J. L., & Valkenburg, P. M. (2023). Explaining variation in adolescents' social media-related distraction: The role of social connectivity and disconnectivity factors. *Current Psychology, 42*(34), 29955-29968.
- Siregar, Y. E. Y., Rahmawati, Y., & Suyono, S. (2023). The impact of an integrated STEAM project delivered via mobile technology on the reasoning ability of elementary school students. *JOTSE: Journal of Technology and Science Education, 13*(1), 410-428.
- Tuong, H. A., Nam, P. S., Hau, N. H., Tien, V. T. B., Lavicza, Z., & Houghton, T. (2023). Utilizing STEM-based practices to enhance mathematics teaching in Vietnam: Developing students' real-world problem solving and 21st century skills. *JOTSE: Journal of Technology and Science Education, 13*(1), 73-91.
- Ulla, M. B., Perales, W. F., & Tarrayo, V. N. (2020). Integrating Internet-based applications in English language teaching: Teacher practices in a Thai university. *Issues in Educational Research, 30*(1), 365-378.
- UNESCO. (2022). *Sarawak State Library from Malaysia is one of the winners of the 2022 UNESCO International Literacy Prize*. Retrieved from <https://www.>

4 S.N.A.A. TAJUDDIN & S.K. AYOP

unesco.org/en/articles/sarawak-state-library-malaysia-one-winners-2022-unesco-international-literacy-prize

UNESCO. (2023). *Technology in Education*. Retrieved from <https://gem-report-2023.unesco.org/technology-in-education/>