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EDISI 14 JUN 2025

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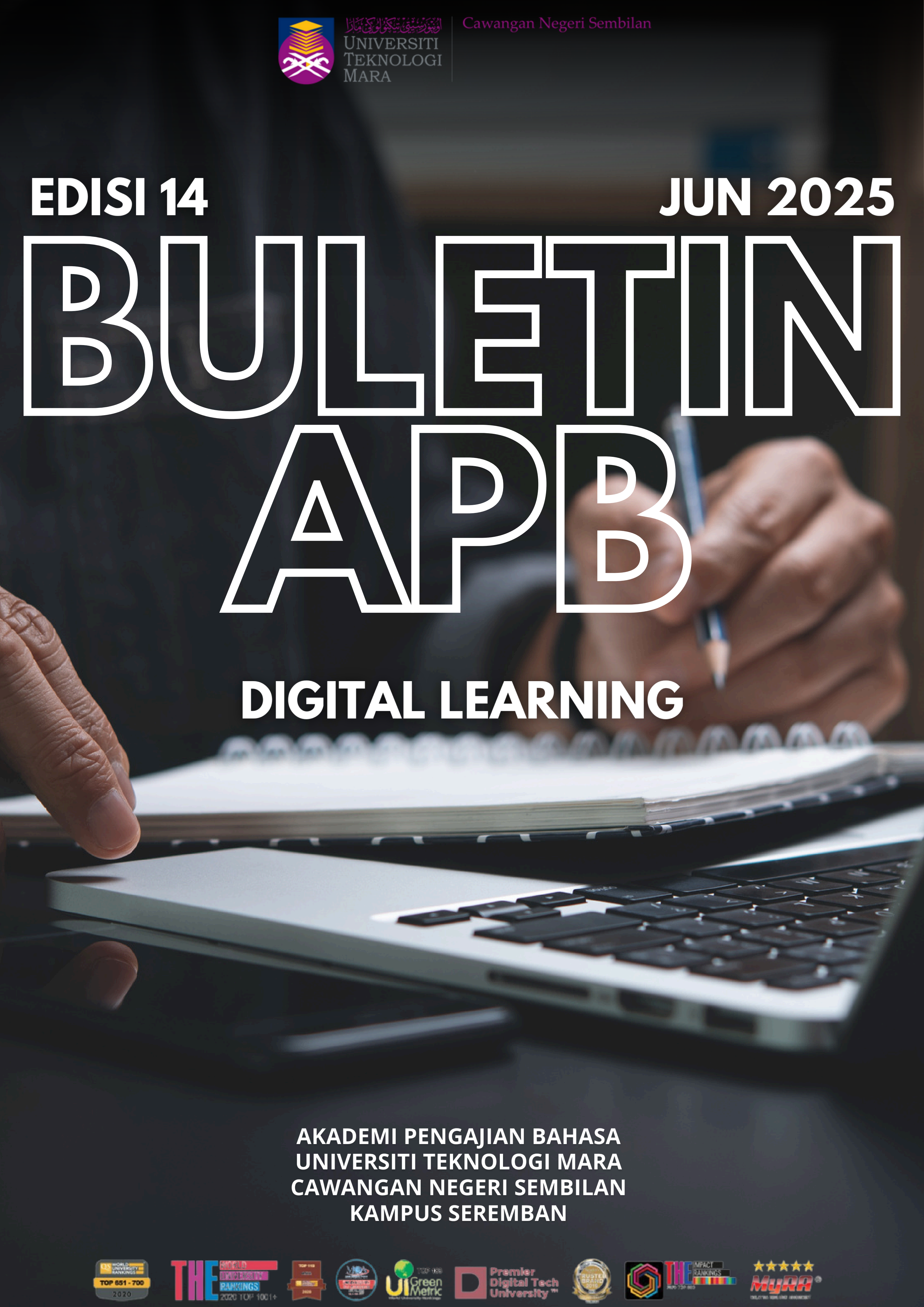

DIGITAL LEARNING

AKADEMI PENGAJIAN BAHASA
UNIVERSITI TEKNOLOGI MARA
CAWANGAN NEGERI SEMBILAN
KAMPUS SEREMBAN

Global Trends in Digital Learning and Artificial Intelligence in Higher Education

ZAHRIL SHAHIDA AHMAD
UiTM CAWANGAN NEGERI SEMBILAN KAMPUS REMBAU

Artificial intelligence (AI) is rapidly reshaping higher education by enhancing digital learning at scale. Generative AI tools like ChatGPT and DALL-E have experienced explosive growth, with ChatGPT reaching 100 million users within two months of its release. These AI systems can generate human-like text, images, and even entire applications, and are already incorporated into many educational products such as Microsoft 365 Copilot and AI-driven LMS features (Brown et al., 2023).

In 2024, digital learning professionals reported that Artificial intelligence (AI) / Machine learning (ML) “became mainstream,” enabling instant generation of personalised materials, quizzes, and feedback (digitallearninginstitute.com, 2014). Such learning tools allow teachers and trainers to create and update content, for instance, text or video, more quickly. In addition, analytics platforms like Smart Sparrow and Docebo leverage AI to tailor learning pathways based on student data, enhancing engagement and learning outcomes. AI is also powering assessment systems, for example, Quizalize and PrepAI, that provide real-time digital feedback. Meanwhile, immersive technologies such as AI-driven Virtual reality (VR) /augmented reality (AR) simulation are expanding in sectors like health care and manufacturing, letting students practice skills such as surgery in safe virtual environments (digitallearninginstitute.com, 2014). These developments exemplify how higher education institutions worldwide are integrating advanced AI tools into teaching, learning, and administrative processes to improve engagement, personalisation, and efficiency.

At present, some universities are issuing new AI use guidelines, adapting assignments, for example, asking students to review AI-generated drafts and training faculty to use AI as a teaching partner rather than seeing it as a threat (Brown et al., 2023; Quinn, 2024). However, surveys indicate that most campuses are still scrambling to develop policies. According to a 2024 survey of provosts, only approximately 20% of colleges had formally published AI policies, although many institutions indicated that policies were in development. Similarly, just 14% had reviewed curricula for AI literacy, even as 63% plan to develop guidelines (Quinn, 2024). These findings suggest higher education is rapidly adopting AI tools even as it plays catch-up on governance and faculty training. Thus, AI's integration into education is a key global trend, offering personalised and creative learning opportunities as institutions adapt policies and curricula to use it responsibly.

Today, AI-driven generative tools are being used to augment nearly every aspect of teaching and learning. For example, generative AI can draft textbook-quality writing, create illustrative images or videos, and even generate practice problems. Digital learning experts note that content creation tools powered by AI, such as ChatGPT, DALL·E, and Education Copilot, have made the greatest impact by enabling educators to generate personalised learning materials, quizzes, and feedback almost instantly (digitallearninginstitute.com, 2024). This rapid content generation allows educators to develop a wide range of materials for broad dissemination. AI-enhanced assessment platforms like Quizalize and PrepAI automatically evaluate student performance and provide real-time feedback, enabling teachers to promptly identify knowledge gaps and intervene effectively. Several e-learning platforms are also embedding AI to personalise learning pathways, for instance, systems like Smart Sparrow analyse user data to tailor content and pacing to each learner. These AI applications make learning experiences more interactive and relevant, as courses adapt in real time to student needs (digitallearninginstitute.com, 2024).

In parallel, emerging technologies for digital learning often incorporate AI to expand pedagogy. Text-to-video tools such as Synthesia use AI avatars to convert written material into narrated video lessons within minutes, allowing quick editing and translation into multiple languages (digitallearninginstitute.com, 2024). Immersive learning is a growing trend, with AI-powered VR and AR environments enabling students to participate in "virtual field trips" and simulations. Companies like Stivr and Labster develop realistic training scenarios, such as virtual surgical procedures or industrial simulations, where learners can safely practice hands-on skills (digitallearninginstitute.com, 2024). These experiences use AI to adapt scenarios in real time and provide feedback, making experiential learning accessible even when physical labs or travel are limited. Alongside trends like microlearning and skills-focused curricula, AI technologies are empowering educators to deliver just-in-time, learner-centred content. Therefore, AI applications from chatbots and adaptive quizzes to immersive simulators are enhancing engagement, personalisation, and scalability in higher education digital learning (digitallearninginstitute.com, 2024).

Looking forward, AI's role in education is set to expand further. Experts predict that AI features will become ubiquitous in everyday learning apps. Already, major software such as MS Office, educational content systems are incorporating AI assistants (Brown et al., 2023), and we can expect learning management systems (LMS) to embed generative features (automatic content creation, question-answer tutoring) as standard. Research on AI tutors and adaptive learning will advance, enabling more personalised instruction. Future tools may monitor student performance and adjust curriculum or pacing, while language models could gain improved capabilities like multimodal understanding and better context awareness to enhance learning support (Brown et al., 2023).

Institutions are also planning strategically for these shifts. Many universities now recognise that "AI is here to stay" and cannot be ignored (Quinn, 2024). Provosts are beginning to incorporate AI literacy into curricula and professional development, teaching students and faculty not only subject matter but how to critically evaluate and "co-use" AI tools. Globally, consortia and policy groups are drafting frameworks to guide ethical AI use in education. There is also interest in hybrid systems combining human and artificial intelligence, for example, pairing students with AI tutors under teacher oversight.

Eventually, emerging technologies will increasingly integrate with AI. The Digital Learning Institute (2024) report highlights VR/AR and microlearning as key trends, with AI expected to power virtual labs and customised bite-sized modules. Advances in explainable AI may help educators trust AI recommendations. Researchers will study the impact of AI on learning outcomes and equity, while institutions are likely to increase investments in training, infrastructure, and educational technology partnerships to harness AI's potential responsibly.

Ultimately, AI is reshaping higher education by enabling personalised, scalable digital learning through generative tools and new teaching methods. While offering opportunities like richer content and adaptive instruction, it also raises ethical and quality challenges. Institutions must adopt AI thoughtfully, ensuring human oversight and strong policies. By blending advanced AI with sound learning science and continuous evaluation, universities can effectively enhance teaching and learning globally.

Reference

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