

ASCILITE 2024

Navigating the Terrain:

Emerging Frontiers in Learning Spaces, Pedagogies, and Technologies

Supporting students to develop artificial intelligence literacy

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This panel explores strategies for supporting students in developing artificial intelligence (AI) literacy within higher education. The aim is to address the gap between technology-enabled learning and teaching activities and student adoption. Research highlights fundamental differences in how students learn and their learning conditions, impacting their ability to effectively incorporate digital technologies. The evolving definition of AI literacy emphasises awareness, ability, and social impact. Panelists include Associate Professor Jason Lodge (The University of Queensland), Professor Margaret Bearman (Deakin University), Associate Professor Tim Fawns (Monash University), and Dr Paula de Barba (Monash University). Topics covered include evaluative judgment, the dynamic nature of AI literacy, and self-regulated learning. The panel format includes presentations and audience-driven discussions, emphasising the need to balance students' capabilities with their learning environment.

Keywords: AI literacy, evaluative judgement, entanglement, self-regulated learning.

Panel overview

A well-known issue in higher education is that when educators introduce new technology-enabled interventions or activities, the students who would most benefit from the technology often fail to use them (e.g., Dunn & Kennedy, 2019). Research indicates that this problem stems from fundamental differences in how students learn and their learning conditions (Broadbent & de Barba, 2023). Students may need other essential learning skills to incorporate technology into their studies effectively and be motivated to apply these skills (e.g., lack of skill or will) or ensure they have the required support and infrastructure.

Considering the rapid developments in AI over the last few years, it is unsurprising that the definition of AI literacy is still evolving. This term has been recently defined as "a focus on awareness and ability and a focus on social awareness and the impact of the use of AI" (Almatrafi et al., 2024, p. 5). AI literacy frameworks for higher education usually include four areas, following Bloom's taxonomy from low to high cognitive demand: know & understand, use & apply, evaluate & create, and ethics (for a review of AI literacy frameworks, see Almatrafi et al., 2024). These frameworks can provide useful guidelines for implementing AI literacy programs in higher education. However, if students have been deprived of opportunities to develop their skills, they may struggle to assimilate AI technologies effectively. To address this, educators must focus on supporting students in developing their AI literacy, preferably utilising a strengths-based approach. But what does this entail?

In this panel, facilitated by Associate Professor Jason Lodge (The University of Queensland) and including Professor Margaret Bearman (Deakin University), Associate Professor Tim Fawns (Monash University) and Dr Paula de Barba (Monash University), we will explore three views on what is relevant to the student learning experience in higher education when learning about AI literacy. Their views on this topic are presented below.

- **Prof Margaret Bearman** proposes that promoting evaluative judgement - the capability to judge the work of self and others (Tai et al. 2018) - is one means of effectively enhancing how students work with AI. By coming to understand 'what good looks like', students can build their understanding of the role of AI in a discipline-specific way. There are three means by which AI and evaluative judgement intersect: making evaluative judgements about AI outputs; making evaluative judgements about AI processes; and using AI to make evaluative judgements about students' own work (Bearman et al. 2024). These provide a contextualised, disciplinary means to incorporate AI use into curricula, drawing together both learning about AI and learning about the subject at hand.

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- **A/Prof Tim Fawns** argues that AI literacy is not a static concept, nor is it something that is likely to be achieved or maintained through the development of individual knowledge, whether by students or educators. Instead, to negotiate the intersection of education and AI, students also require structural support, scaffolding, collaboration, and openness and honesty about the limitations of what they, or their educators, can know. Further, building literacy, self-regulation, and other desirable capacities relating to AI requires students to develop the capacity to recruit and adapt to resources, materials, and people around them. In other words, navigating the complex entanglements of technology in education means going beyond individual, internal and independent ideas of learning (Fawns, 2022).
- **Dr Paula de Barba** asserts that a foundational aspect of preparing students to learn about and with AI is teaching them how to learn, ensuring they can and want to adapt to new technologies. Self-regulated learning (SRL), often referred to as the "learning-to-learn" skill, involves students actively investing in their cognitive, emotional, social, and motivational development to become proficient learners (Lodge et al., 2023). Educators can enhance SRL through explicit instruction and scaffolded support, leveraging AI's potential to further assist skill development.

The panel format includes an opening preamble by Associate Professor Jason Lodge and a short presentation from each panel member. This is followed by a discussion that includes questions prompted by the audience and moderated by Associate Professor Jason Lodge. The intended audience includes academics and practitioners implementing AI literacy frameworks in higher education institutions. We aim to raise awareness of the complexities of promoting a successful AI literacy program while balancing the tensions between students' capabilities and the learning environment.

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