ASCILITE 2025

Future-Focused:

Educating in an Era of Continuous Change

Building educator capability for meaningful AI integration

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Generative AI (GenAI) is reshaping the practice of teaching and learning in higher education, creating new possibilities alongside significant complexity. While interest in AI tools continues to grow, meaningful adoption relies on approaches that are grounded in pedagogy, flexible, and responsive to context, rather than on technical proficiency alone. This paper reports on a project to embed AI capability development for educators, into existing professional learning programs, positioning AI as a tool to extend and enrich, rather than replace, innovative teaching practices. The project focuses on creating opportunities for educators to explore, test, and adapt AI tools within their specific teaching contexts, moving beyond generic training that often fails to address the complexities of practice. Design principles and implementation strategies prioritise equity, educator agency, and engagement, supporting sustainable and inclusive professional learning in online education. Early insights highlight the value of integrating AI capability into pedagogical initiatives rather than treating AI as a stand-alone technical skill. The outcomes of this work contribute a practical model for AI capability building that can inform future professional learning and institutional strategies for adaptable and innovative teaching in an era of continuous change.

Keywords: GenAI, AI capability development, pedagogy-led AI integration, AI adoption, Higher Education

Introduction

With the ever-increasing access to and integration of generative AI (GenAI), educators face emerging opportunities to incorporate this technology into their practice. The current hype around GenAI tools in education often takes a technological solutionist perspective, framing AI as a fix for educational challenges by promising efficiency and personalisation (Selwyn, 2022). However, there is limited research that explains how educators can integrate these technologies to achieve these positive outcomes in practice (Alateyyat & Soltan, 2024; Lodge et al., 2023). For example, claims such as AI will enable "individualised lessons and learning plans tailored to fit the needs of specific students" (Marr, 2024, para.12) often overlook the pedagogical knowledge and educator competencies required to meaningfully realise such outcomes. Without addressing educator capability, ideals of personalisation, such as this one, remain an elusive aspiration.

As universities invest in AI tools and make them readily available to staff and students, institutions must consider how they can 'speed up the rate of diffusion of innovation' (Rogers, 2010, p.32). Therefore, alongside investments in infrastructure, investment in training and development becomes an inescapable necessity for adoption. It is now widely recognised that targeted AI capability-building for educators is essential (Ali & Miles, 2025; Lodge et al., 2023).

However, significant concerns regarding GenAI, such as 'hallucinations', data privacy, bias in the training data, and ethical issues, can contribute to educators' hesitancy in adopting these tools (Alshamy et al., 2025; Kaplan-Rakowski et al., 2023). These technical risks are further complicated by educators' AI readiness, including their pedagogical understanding and capability-based know-how (Wang et al., 2023). In response, our organisation has developed a tailored approach to build educator capability and confidence in using GenAI tools in a way that is contextual, human-centred and pedagogy-led.

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AI Adoption in Higher Education

Knowledge of GenAI, like other technologies, can best be viewed as a 'know-how', something an educator does rather than has (Orlikowski, 2008), meaning users must interact and engage with the technology to learn how to utilise it in their context. While actively using GenAI tools is considered the most effective way to build AI literacy among both students and teachers (Sperling et al., 2024), this presents significant challenges. Many of these tools have not been explicitly designed for educational contexts, requiring educators to adapt them to fit their specific teaching needs. Druga et al. (2022) note that existing AI resources often fail to support educators in this process, revealing substantial gaps in usability, relevance, and alignment with pedagogical principles. These shortcomings complicate educators' decision-making and limit their ability to implement and customise AI tools effectively. This underscores the need for professional learning and resources that are explicitly designed to meet the pedagogical and contextual needs of educators, thereby supporting more meaningful adoption of AI in teaching practice.

Effective integration requires more than a technical understanding of AI; it also relies on strong pedagogical foundations to ensure that these tools enhance teaching practices and improve student learning outcomes (Belkina et al., 2025). Without adequate training that supports the development of both technological and pedagogical knowledge, many educators remain underprepared to use AI meaningfully in their teaching (Mahmud et al., 2024). Reimagining the TPACK framework to account for the unique affordances and challenges of GenAI presents one approach to supporting a more effective and pedagogically grounded integration (Mishra et al., 2023). It has also been shown that through reflective practice, educators can draw on their pedagogical knowledge and understanding of student needs to design meaningful and effective ways of integrating GenAI into their teaching (Al-Ali & Miles, 2025).

Other research shows that a teacher's motivation to apply what they learn in a training program into their practice largely depends on their values, characteristics, skill level, social practices and organisational factors, such as perceived leadership and peer support (Stumbrienė et al., 2024). Generic training resources that fail to account for these individual differences are unlikely to support the effective adoption of AI. Instead, training and professional development opportunities must cater to the diverse needs and digital skill levels of individuals to be effective (Stumbrienė et al., 2024).

However, the ongoing contentiousness within academia around concerns about plagiarism, data privacy and the erosion of critical thinking skills represents a significant barrier that impedes individuals' willingness to engage with AI tools (Mahmud et al., 2025). Sperling and colleagues (2024) raised concerns that numerous studies aimed at training teachers in AI usage fail to consider these ethical concerns and reflections, instead dismissing them as barriers to AI adoption. This oversight neglects the significance of teachers' professional judgment and autonomy in developing AI capabilities. It is crucial that any training effort fosters the right environment for 'hands-on' use while maintaining sufficient flexibility for users to choose their own path, allowing them to feel comfortable exploring technology that aligns with their beliefs and values.

Identifying Learning Priorities for AI Capabilities

Our initial inquiry focused on practical, educator-driven applications of GenAI, specifically on how it could support teaching by improving efficiency, reducing time spent on low-impact administrative tasks, sparking creativity in lesson planning, and generating engaging learning activities for students. Through this work, we identified a critical gap: while discourse on GenAI often makes bold claims about personalisation and innovation, it rarely offers practical guidance for educators on how to develop the skills required to use these tools effectively, particularly for online teachers. To address this, we developed the Generative AI Skills Continuum for Educators, a capability-building framework aligned to the SAMR and TPACK models. The continuum supports educators' growth in AI capability through a developmental progression, starting from introductory skills and knowledge that form a basic understanding of what GenAI is and is not, to reinforcing skills that encourage experimentation to build confidence in testing AI approaches, and finally to mastering skills that see GenAI embedded in teaching practice.

Each level of the continuum builds upon the previous one, enabling educators to develop their confidence, deepen their understanding, and expand their AI teaching toolkit. At the core of the model are use cases that illustrate specific applications of GenAI aligned to diverse teaching and learning needs. These use cases were initially created by our Learning and Teaching team, with the vision that they will continue to grow through contributions from our online facilitators, who are engaged in hands-on experimentation. In this way, the continuum not only supports individual capability development but also fosters a living, evolving knowledge base shaped by educator practice.

Our Capability-Building Strategy

Once we had established the Generative AI Skills Continuum, we used it to inform and design a broader professional learning ecosystem. Our goal was twofold: to provide all our educators with a foundational understanding of GenAI, and to create a responsive ecosystem capable of evolving alongside the technology.

We were guided by research highlighting the critical role of educator context in adoption. A teacher's motivation to apply what they learn depends not only on the quality of the training but also on individual values, characteristics, skill level, social practices, and organisational support structures (Stumbrienė et al., 2024). Generic training programs that fail to account for these factors are unlikely to be effective. Equally, successful integration of GenAI tools requires more than a technical understanding; it must be grounded in strong pedagogical foundations (Belkina et al., 2025). With this in mind, embedding AI learning opportunities within our existing, evidence-informed online facilitation training program was a deliberate decision to ensure that all AI integration remains pedagogy-led.

Our capability-building program is therefore underpinned by four key principles:

- Experienced, not explained: The role of GenAI in education is continuously advancing, and effective learning depends on active exploration, reflection, and ongoing adaptation.
- Embrace experimentation: Capability does not come from imitation alone; playful, curious experimentation is essential to developing confidence and fluency.
- Human in the loop: Human oversight ensures that AI is used ethically, accurately, and empathetically in learning environments.
- Pedagogy-led: Pedagogical goals, not tools, must shape how AI is used to enhance student learning.

To put these principles into action, our capability-building initiatives comprise three complementary pathways, each designed to support educators in developing confidence and competence with GenAI through pedagogically grounded, flexible, and context-sensitive approaches.

The Generative AI Introduction Course is a self-directed learning experience delivered through the institutional learning management system. It introduces educators to core concepts of artificial intelligence, principles of responsible use, and our institutional GenAI tool. As part of the course, educators create a personalised AI professional development plan that maps their learning goals to practical classroom applications. The course is designed to foster positive judgments about the usefulness of GenAI and to build self-efficacy through guided exploration.

The Online Facilitator Credential is an asynchronous professional learning pathway supporting facilitators in refining their online teaching practice. Each module focuses on a key pedagogical theme and includes opportunities to trial AI-assisted strategies. This credential aims to deepen confidence in using GenAI in authentic teaching contexts.

The Generative AI Accelerator Program adopts a community-based, collaborative learning model. Educators undertake action research projects exploring AI integration in their practice, with an emphasis on reflective practice, peer learning, and innovation in a supported digital environment. This program aims to build confidence through contextual experimentation and to grow a network of peer champions.

We designed our GenAI capability-building approach to be multifaceted, engaging online facilitators through multiple entry points that support personalised learning experiences. Rather than a one-size-fits-all model, our strategy supports individual professional development goals, digital confidence levels, and contextual needs. Importantly, we recognised that a small central team alone cannot sustain innovation. Instead, our model is built around a feedback loop, where outputs from programs like the Generative AI Accelerator directly inform and update the digital library of GenAI use cases. This dynamic repository not only supports open knowledge sharing and practical innovation but also reinforces our community-building ethos, ensuring that capability development is collaborative, ongoing, and grounded in real-world teaching experience.

Concluding Reflections and Session Overview

Our experience reinforces that effective integration of GenAI into teaching practice requires more than technical knowledge; it demands a fundamental shift in mindset, supported by pedagogy-led, flexible, and contextually relevant strategies. Educators benefit from environments that provide time and space to explore, test, and adapt GenAI tools to their unique teaching contexts. Generic training approaches rarely address these complexities or foster the deeper changes needed for meaningful adoption.

By embedding AI capability development into existing pedagogical programs, we position AI not as a replacement for innovative learning design but as a tool to extend and enhance it. This model offers a replicable approach to professional learning that supports equity, engagement, and educator agency within the evolving landscape of online education.

In this session, we will showcase our design principles, implementation strategies, and early insights from participants' experiences. Attendees will gain a practical understanding of how to embed GenAI capability into pedagogical programs and will be invited to reflect on implications for their own contexts. We will also explore how this approach advances equity and educator agency, contributing to inclusive and sustainable AI capability building in higher education.

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