

Future Faculty Development in the Age of AI: Reconfiguring Roles, Innovating Practices, and Building Ecosystems

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Generative AI has introduced new tools for teaching, learning, assessment, and research in universities. At the same time, it is reshaping the fundamental conditions under which university faculty work. Questions of how to design learning experiences, evaluate evidence of learning, guide students in the appropriate use of AI, and pursue research innovation responsibly have therefore become central to faculty development in the age of AI.

The special issue on “Future Faculty Development” addresses these challenges. The Guest Editors of this issue, from China, Singapore, and the UK, have brought together authors across China, the USA, Germany, the UK, Japan, Singapore, Ireland, the United Arab Emirates, and other countries to exchange their thoughts on this important issue. This special issue seeks to provide a platform for dialogue across institutional and disciplinary contexts, enabling contributors to exchange theoretical perspectives and practical experience in future faculty development. It explores how universities can support faculty members’ continued growth through resource support, institutional arrangements, and collaborative partnerships, while also laying the groundwork for future joint research. To this end, the issue addresses three interconnected topics.

First, the reconfiguration of faculty roles and educational professionalism. As generative AI becomes increasingly embedded in teaching and research, this collection of articles explores the professional value of faculty members. Xianjin Yang, Chair of the Steering Committee on the Professional Development of University Faculty Members under the Ministry of Education of the People’s Republic of China, argues that in the era of AI, faculty are expected to serve as value leaders, learning designers, human–AI

collaboration organizers, and teaching researchers and innovators. His team proposes fulfilling these roles through top-level planning, infrastructure development, systematic training, and the establishment of evaluation mechanisms (Yang et al., 2027). Pingwen Zhang, Member of the Chinese Academy of Sciences and President of Wuhan University, identifies educator spirit, digital literacy, innovative capacity, lifelong learning, and ethical awareness as the core competencies required of future faculty. Wuhan University’s Future Teacher Training Program provides a new model for faculty development that harnesses digital technologies and AI to support personalized learning and continuous professional growth (Zhang et al., 2027). Drawing on insights shared by university experts from several countries at an international symposium, Chen et al. (2027) identify seven emerging faculty roles and propose a corresponding professional development framework. Their commentary highlights the importance of taking disciplinary differences into account and mobilizing support from multiple stakeholders. Ho (2027) further notes that educational development should remain grounded in an understanding of the fundamental mechanisms of human learning. With careful attention to the boundaries of cognitive offloading, faculty should be encouraged to use AI to create educational tools and expand their academic identities.

Second, the transformation of teaching, assessment, and research practices. These articles focus on how reconfigured faculty roles can be enacted in practice. The PEDAL model, proposed by Charles and Elkhoully (2027), is organized around five principles—purpose, epistemic challenge, dialogue, accountability, and learning evidence. This model provides both an illustrative framework and a coherent decision-making sequence for integrating AI into higher-order learning tasks, rethinking assessment, and supporting teachers’ professional development. Ji and Mercer (2027) conceptualize professional judgment as a contextually situated educational practice and argue that judgment

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space is essential for faculty to exercise, articulate, scrutinize, and sustain such judgment. Drawing on a dialogic inquiry triangle, they explore how three-way interactions among faculty members, students, and AI can expand rather than constrain judgment space. On this basis, they propose six structural principles and a professional judgment audit tool for faculty development. Moreover, Ifenthaler and Gibson (2027) extend discussions of computational mindset and educational data science literacy towards the concept of algorithmic agency. They emphasize the need for researchers to engage critically with AI in the co-construction of knowledge while preserving methodological rigor and human epistemic authority. The Co-Intelligent Academic Practice framework links the development of research capabilities to institutional support, thereby extending the issue's discussion beyond teaching reform to encompass the transformation of research practice and knowledge production.

Third, institutional support, governance mechanisms, and global collaboration. To answer what supports the development of faculty capabilities and innovation in practice, Iskandarova et al. (2027) use a multiphase mixed-methods design to investigate faculty expectations and needs regarding AI-related open educational resources for teaching and learning in higher education. Their findings show that faculty place the greatest emphasis on three areas: AI literacy, pedagogical strategies, and ethics, and that they prefer resources that are interactive, adaptable, openly licensed, and grounded in classroom practice. The open educational resource prototype developed by the research team also offers a useful reference for designing resources to support faculty development in the AI era. Jiang et al. (2027) examine faculty development and the pre-service teaching preparation of doctoral students in Japan as two tracks within a single academic development continuum. Their analysis of institutionalized practices and structural constraints offers insights into how support can be better connected across different career stages. The Triple-A framework, proposed by Hubbard and Theo (2027), links five stakeholder groups with five control functions, clarifying the allocation of responsibilities for AI assurance and accountability and highlighting the need for broader institutional arrangements to sustain faculty development. Tian et al. (2027) frame transnational faculty development as both a matter of professional learning and organizational coordination. They highlight the importance of balancing international collaboration with local autonomy through a shared agenda, sustained coordination, and resource reuse, while identifying shared governance as a design objective to be further advanced.

To sum up, this special issue presents three interconnected directions for future faculty development: clarifying the professional value of faculty

members; improving teaching, assessment, and research practices; strengthening resources and institutional support. It includes theoretical frameworks and commentaries, as well as studies on program implementation and resource development. The applicability and effectiveness of the models discussed, however, remain to be tested across disciplines, faculty groups, and institutional contexts.

We are pleased that this special issue has received a considerable number of submissions. Due to space constraints and publication schedule, we are unable to include all valuable contributions beyond the articles selected above, including some manuscripts that were still under revision. Going forward, "Future Faculty Development" will become a regular column of *Frontiers of Digital Education*, featuring research, commentary, and practice-based articles. We hope that this platform will facilitate the exchange of practical experience and international dialogue while further exploring how faculty development can support student learning, knowledge creation, and responsible AI practice.

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