

Pratschke, B. Mairéad. 2024. *Generative AI and Education: Digital Pedagogies, Teaching Innovation and Learning Design*. (SpringerBriefs in Education). Cham: Springer Nature Switzerland. 119 pages.

Pratschke's book tackles a timely and transformative topic: the integration of generative artificial intelligence (GenAI) into education. The author explores the evolving landscape of pedagogy as AI technologies become increasingly embedded in teaching practices, curriculum design, and digital learning environments. This discussion is framed within the broader context of digital pedagogies and educational innovation, offering a comprehensive perspective on the rapidly advancing AI technologies and their influence on contemporary teaching practices. With a critical lens, Pratschke navigates the benefits, challenges, and future potential of AI-supported education, making the book a substantial contribution to current educational research. It serves as an essential resource for educators, researchers, and educational technology enthusiasts, providing a thorough analysis of AI's influence on digital pedagogies, teaching innovation, and learning design.

As a part of the SpringerBriefs in Education series, the book is organized into seven insightful chapters, each addressing different facets of teaching and learning. In the opening chapter, entitled 'AI and Digital Education', Pratschke lays the foundation for understanding AI's role in education by outlining the technological waves that have shaped digital pedagogy. She traces the history of AI, focusing on its evolution from early digital education tools to contemporary generative AI models, and highlights the transition from passive digital resources to active AI systems that engage in learning processes. Pratschke also explains the concept of generative AI and its implications for digital pedagogy, emphasizing the need for educators to rethink traditional instructional designs. By providing essential historical, technological, and educational context, this chapter situates generative AI within the evolving timeline of learning innovation. It examines the pedagogical shift from instructor-led to student-centered approaches, distinguishing GenAI from earlier forms of AI and preparing the reader for the subsequent discussions in the book.

In Chapter 2, 'The AI Ecosystem', Pratschke thoroughly explores the AI ecosystem, focusing on the competitive and collaborative dynamics of edtech and big tech companies. The chapter provides a detailed overview of various AI tools including 'Efficient Assistants,' 'Custom Bots', and

‘Generative Search’, elucidating their roles in enhancing personalized learning experiences. Sections such as ‘Content Versus Design’ and ‘Synthetic Worlds’ illustrate how AI has the potential to transform learning environments through immersive and multi-modal learning experiences. Pratschke emphasizes the significance of trust and the strategic considerations educators must navigate when integrating these technologies. Despite its informative nature, the chapter would benefit from a deeper discussion of the ethical implications surrounding the influence of big tech in the education sector.

Chapter 3 introduces the concept of ‘The New Hybrid’, which merges human and AI teaching methods to create blended learning experiences. Pratschke explains the importance of breaking language barriers through AI translation tools and discusses how prompt engineering can optimize AI interactions. She provides case studies from educational platforms such as Khan Academy, which integrate AI to enhance learning outcomes, along with technical aspects such as temperature settings and inference experiments, which offers insights into AI’s operational mechanics. The chapter also employs instructional frameworks such as SAMR and TPACK, connecting theoretical knowledge with practical applications and aiding educators in scaffolding AI-supported learning. Additionally, the discussions on ‘Experiments in Prompt Engineering’ and ‘Experiments in Inference’ highlight the real-world applicability of AI models in education. The discussion of frameworks such as SAMR and TPACK provides theoretical grounding. The introduction of TPAIK (Technology, Pedagogy, and Artificial Intelligence Knowledge) further enriches the discourse. However, the chapter might have benefited from a more critical approach, questioning whether the rapid integration of AI-based tools might jeopardize the quality of traditional pedagogical practices.

Chapter 4 presents the concept of ‘Generativism’, a pedagogical approach that redefines learning in the context of AI integration. Pratschke explores generative learning and its connection to digital design, constructive alignment, and Bloom’s taxonomy (Bloom et al. 1956), shifting from traditional Bloom’s 2.0 to 4.0. This transition emphasizes active, student-centered learning supported by AI. Pratschke outlines the stages of generative learning stages—acquisition, investigation, discussion, collaboration, practice, and production—and provides educators with a clear, structured framework for implementing AI in a way that encourages critical thinking and creativity. This chapter highlights

how AI can facilitate dialogue and collaboration, positioning it as an active participant in education. However, while the discussion effectively connects AI-driven pedagogies to established educational models, it could benefit from engaging more critically with perspectives that question whether AI-driven generative learning can adequately replace human-centered pedagogical approaches.

Focusing on the collaborative potential of AI, chapter 5 emphasizes the development of intelligent communities that foster social learning. Pratschke provides a balanced view of intelligent tutoring systems, adaptive learning platforms, and social AI, stressing the importance of AI in facilitating peer interaction and support. The chapter also touches on affective computing, demonstrating how AI can enhance the emotional dimensions of learning. While the chapter excels in illustrating AI's collaborative potential, it does not sufficiently address privacy issues or the possible erosion of genuine human connections in AI-mediated learning communities.

Chapter 6 explores the implications of AI in assessment, discussing the shift towards generative and authentic assessment practices. Pratschke highlights 'AI-Assisted Grading' and 'Generative Assessment' as transformative practices but acknowledges traditional methods such as 'The Return to Pen-And-Paper' as necessary transitional steps. The chapter's exploration of 'Future Human Skills' and 'Competencies for the AI Age' is insightful, offering a forward-looking perspective on skill development. However, the discussion of assessment methods could have been more nuanced, particularly concerning the potential for AI to perpetuate biases and inequalities in educational outcomes.

Pratschke concludes with a focus on embedding AI into institutional contexts. She addresses ethical considerations, institutional priorities, and the transformative potential of AI in learning spaces. The chapter reflects on lessons from the COVID-19 pandemic, highlighting how crises can accelerate technological adoption. The segment on experimentation and transformation provides practical recommendations for embedding AI in educational settings. While the chapter successfully outlines strategies for effective AI integration, a more critical stance on the risks of over-reliance on technology in education would have added depth.

In conclusion, B. Mairéad Pratschke's book delivers an insightful and forward-thinking exploration of how AI technologies are reshaping education, effectively blending theory, practical application, and critical

analysis. The work serves as a valuable resource for educators, policymakers, and edtech developers, establishing a strong foundation for understanding and navigating the evolving landscape of AI-supported learning. However, the book would benefit from a more in-depth examination of technical accessibility, practical challenges, and ethical considerations related to AI integration (see Parviz 2024), as well as additional empirical support and a critical engagement with the socio-economic challenges AI introduces. While Pratschke balances the technical aspects of AI with pedagogical theory, making the content accessible to a diverse audience, some sections may be too dense for readers less familiar with technical AI terminology or educational frameworks such as TPACK and SAMR. Furthermore, the book tends to present an optimistic view of AI's capabilities, often assuming its integration will enhance learning outcomes. A critical reflection on instances where AI may fall short or hinder essential skill development would provide a more nuanced perspective. Taken together, while the book lays a solid foundation for future research and practice, addressing these considerations will better equip educators to navigate the complexities of incorporating AI into their teaching practices.

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### *References*

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