Gist Education and Learning Research Journal. ISSN 1692-5777.
No. 31 (July - December, 2025). pp. 173-177.

Book Review

Generative AI and Education, digital pedagogies, teaching innovation and learning design

by B. Mairéad Pratschke, Springer, 2024

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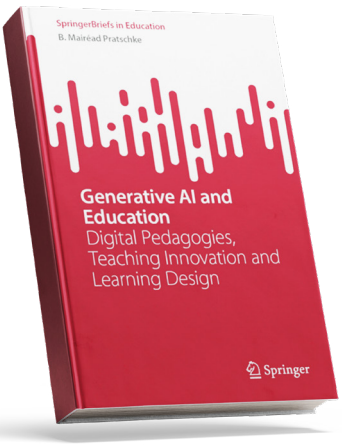

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Received: August 1st 2025 / Accepted: November 24th 2025

Artificial Intelligence in Education (AIEd) has been discussed for the last 30 years, yet it remains a developing area within educational technology. Despite its long history, many educators still struggle to use it effectively in their teaching on a larger scale, and questions persist about how it can truly transform teaching and learning across education (Zawacki-Richter et al., 2019).

This book explores the impact of Generative Artificial Intelligence (GAI) on education, highlighting the urgent need for a paradigm shift in teaching practices and learning design to better align with the demands and realities of today's world. It is part of the *SpringerBriefs in Education* series, which provides concise and accessible summaries of current research. *Generative AI and Education* fit this model by offering a focused exploration of GAI's influence on pedagogy and learning design.

Designed primarily for educators, the book aims to promote artificial intelligence (AI) literacy and equip readers with the tools to collaborate with AI in creating new educational experiences. It promotes a model of education where humans and AI work together to generate, discover, and construct knowledge in more dynamic and inclusive ways.

Although no single scholar formally introduced the concept of "Generative AI in Education," the field grew rapidly after the release of GPT-3.5 and GPT-4 between 2022 and 2023. Early academic discussions were influenced by researchers such as Neil Selwyn (2022), who examined the teaching and ethical challenges raised by ChatGPT, and Mollick & Mollick (2023), whose work showed how AI could support teaching, assessment, and collaboration between humans and machines. Reports from UNESCO (2023) and the OECD (2023) also played an important role by providing initial guidelines for the use of AI in schools and universities. Compared to these first explorations (which were mostly introductory or focused on short-term concerns), Pratschke's book offers a more structured and theoretically grounded contribution by connecting generative AI with digital pedagogy, learning design, and a clear instructional model (Generativism). In doing so, the book not only summarizes the early debates but also provides a clear structure that strengthens the field and outlines more developed directions for future research and practice, as we will explore in the next part of the review.

The book develops several key themes that help explain how generative AI is reshaping education. First, Pratschke argues that GAI requires a major shift in digital pedagogy, encouraging educators to move beyond simply delivering content to create more open, participatory, and collaborative learning experiences. Second, she introduces the idea of "human AI collaboration", where AI works alongside teachers and students to enhance what they can do. A third important theme is "Generativism", a new instructional model that focuses on creativity, dialogue, and building knowledge with the support of AI tools. Finally, the book shows that these changes necessitate rethinking essential aspects of learning design, such as assessment, personalization,

and instructional planning, to better align educational practices with emerging technological realities.

The book is organized into seven chapters that move from foundational concepts to practical implications for teaching and learning. The first chapter provides the historical, technological, and educational context necessary to understand GAI's role in transforming education. Rather than presenting GAI as a mere digital tool, the author frames it as a generative and conversational technology capable of challenging traditional assumptions, such as the idea that the teacher is the only source of information, that written tests are the best way to evaluate learning, and that learning only happens inside the classroom. Building on this foundation, the following chapters explore how the growing use of generative AI is reshaping the educational landscape. The author looks not only at the technological changes, but also at how they affect teachers' roles, the way learning is designed, and how institutions operate (including how they design policies, support teachers, and provide resources for AI integration).

Throughout the book, the author introduces new concepts and ideas such as the concept of generativism, intelligent communities and the human AI model, where AI does not replace the teacher but works alongside them to support knowledge creation. She also explains practical tools such as prompt engineering and Retrieval-Augmented Generation (RAG) in a clear, approachable way, and offers frameworks that help educators redesign lessons, personalize learning, and rethink assessment in this new digital era.

The book supports its ideas with a solid mix of theory, real examples, and references to current developments in education and AI. It uses well-known learning theories like constructivism, generative learning, and models such as *Technological Pedagogical Content Knowledge* "TPACK" (updated to include AI) to explain how teaching and learning can change with GAI. It also includes many practical examples from schools and universities around the world, showing how AI is already being used in lesson planning, tutoring, and assessment. This balance among theory, practice, and critical reflection makes the book's evidence strong and convincing.

Because the book is written for educators who may not be familiar with AI, most technical terms are carefully explained in chapter one. The author makes a strong effort to clarify and contextualize complex ideas; however, some readers may still find parts of the book challenging. This is largely due to the rapid introduction of new AI tools and technical concepts, which can feel overwhelming without prior exposure to digital technologies. Nevertheless, the book maintains a reader-friendly tone and guides educators through these complexities with patience and clarity.

While the book successfully introduces key concepts and encourages educators to rethink traditional models, its most significant strength lies in its practical orientation. Rather than remaining at a theoretical level, it offers concrete classroom examples,

implementation strategies, and instructional frameworks that support the effective integration of GAI in real-world settings. From prompt engineering to AI assisted instructional design and personalized tutoring systems, the book gives educators actionable tools that make its content not only informative but also highly applicable: among the practical examples throughout the book, Chapter 3 presents models for human AI collaboration through techniques such as "chain of thought" prompting and Retrieval Augmented Generation (RAG), enabling teachers to build their own AI powered tools.

Another strength of the book lies in its relevance to educators from various backgrounds and experience levels. Rather than targeting only specialists in educational technology or instructional design, *Generative AI and Education* is written for the majority of educators who may lack a background in digital pedagogy or AI. It aims to bridge that gap by providing accessible explanations and practical tools that help them transition into AI-enhanced teaching. Moreover, it speaks directly to academic staff, institutional leaders, and policy makers, emphasizing the need for strategic support and professional development to guide institutions through this shift.

The many possibilities introduced by GAI in education have generated concern and uncertainty among educators who are only beginning to comprehend its full scope and implications. Yet rather than viewing GAI as a threat, the book encourages a mindset of curiosity and collaboration, proposing a new teaching model that is human-centred and supported by AI.

A notable strength of the book is the author's selection of sources, which are relevant, current, and supported by research. Pratschke combines classic theories of digital pedagogy, such as constructivism, generative learning, and TPACK, with recent reports and policy documents from organizations such as UNESCO (2023) and the OECD (2023), which give the book theoretical depth and practical relevance. In addition, the inclusion of contemporary discussions of generative AI demonstrates that the author is keeping up with the field's fast-moving developments. However, while the sources are solid and diverse, the book relies mostly on commentary, reports, and conceptual papers. It would be stronger if it included more studies that show how generative AI is actually being used in classrooms and what effects it has on learning. Adding more empirical evidence in this area would make the book's arguments more convincing and give readers a clearer picture of the real-world impact of AI-supported teaching models.

In its conclusions, the book argues that generative AI will only make a real difference in education if it is accompanied by a deep rethinking of pedagogy, institutional systems, and teacher training. Pratschke explains that the goal is not to replace teachers with automated tools, but to redesign learning environments where AI supports human judgment, creativity, and inclusion. She also notes that institutions need to provide clear guidance and ethical standards so educators can use AI with

confidence and responsibility. Overall, the book presents GAI as a major change that will reshape educational practices in the long term. Finally, although the book includes illustrative case examples, it would benefit from more empirical research or systematic assessments of the outcomes associated with AI-integrated pedagogical models. Additionally, incorporating student perspectives and exploring how generative AI influences learner identity and engagement would have added further depth to the analysis.

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