

Artificial Intelligence and Transformative Pedagogies in the Digital Age

This book offers selected research papers from the 2025 edition of the Cognition and Exploratory Learning in the Digital Age (CELDA) conference. In its 22nd edition, CELDA promotes the development of research that discusses and addresses the challenges pertaining to the evolution of the learning process, the role of pedagogical approaches and the progress of technological innovation in the digital context. It offers a comprehensive examination of how AI is bringing innovation into teaching and learning, transforming educational methods across different environments. It provides educators, researchers and educational technologists a roadmap for the deployment of AI tools and innovative pedagogical approaches to improve learning, assessment and teacher development.

This book addresses the urgent debate of AI growing implementation in educational settings and divides the main topics into four critical parts:

Part I—AI as a learning resource—Approaches the use of AI-based tools as resources for the development of student-centred and active learning and as supportive instruments for critical thinking and skill development.

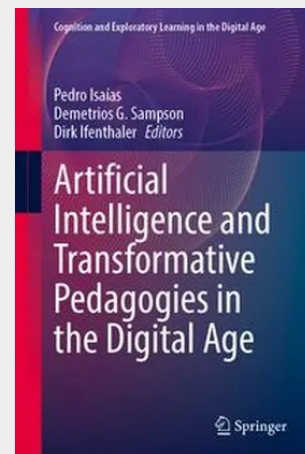
Part II—AI-driven assessment and analytics—Focuses on assessment with the support of AI, in areas, such as automated assessment and the use of analytics to measure learning outcomes.

Part III—Pedagogical innovation and transformation—Emphasises the need for systemic and methodological innovations in educational settings to adapt to the AI age.

Part IV—Computational thinking, programming and teacher development—Addresses the technical aspects of digital skills while also exploring behaviour and the necessary tools.

This book is essential reading for anyone interested in how teaching and learning are evolving in response to ongoing technological innovation. It is directed at researchers, instructional designers, educators, graduate students and educational policy makers.

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