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Review

The following is a review of “Generative AI in Higher Education” (Routledge, Abington / New York, 2024), by Cecilia Ka Yuk Chan and Tom Colloton. 287 p. ISBN: 978-1-032-60418-3 (hbk), ISBN: 978-1-003-45902-6 (ebk).

Generative AI is significantly altering the landscape of higher education by integrating traditional teaching methods with advanced AI technologies. In their book, *Generative AI in Higher Education: The ChatGPT Effect*, Cecilia Ka Yuk Chan and Tom Colloton provide an in-depth examination of this transformation. They analyse the incorporation of ChatGPT and other AI tools into educational frameworks, offering a comprehensive guide and critical analysis of their impact on pedagogy, curriculum design, and assessment strategies. By combining theoretical insights with practical applications, the authors aim to equip educators and policymakers with the knowledge and tools necessary to navigate this evolving field effectively.

The emergence of numerous scholarly works addressing the integration of AI in higher education, such as *Artificial Intelligence in Education Promises and Implications for Teaching and Learning* (Fadel et al., 2019), *Artificial Intelligence and Education* (Holmes et al., 2020), and *AI and the Future of Education: Teaching in the Age of Artificial Intelligence* (Shah, 2023) demonstrates a growing interest in the transformative potential of AI technologies in academia. These studies delve into themes such as adaptive learning, ethical AI usage, and interdisciplinary collaboration, reflecting the rapidly evolving landscape of educational practices shaped by digital innovation.

The document “**Generative AI in Higher Education**” by Routledge is structurally divided into 7 parts which discuss the topics from the introductory information on AI to its Future perspectives with special emphasis on Redesigning Assessment with AI, Education Policy and Technology behind GenAI. The chapters within this document tackle a wide range of AI topics.

Based on the insights from the text, the book explores **three key themes**: 1) *Integration of AI in Education*: the book discusses how AI technologies like ChatGPT can be incorporated into higher education settings. It emphasizes their role in creating more inclusive and interactive learning experiences, highlighting tools such as adaptive assessments, intelligent tutoring systems, and AI-assisted curriculum design; 2) *Ethical and Societal Implications*: a significant theme is the ethical use of AI in academic environments. The text covers privacy concerns, biases, inclusivity challenges, and the development of responsible AI policies to ensure fair and equitable integration of technology in education; 3) *Interdisciplinary Applications of AI*: The book addresses the multifaceted applications of AI, not just in educational contexts but across research and professional domains. This includes using AI for innovative teaching methods, collaborative design in architecture, and refining methodologies in literature studies.

The academic document *Generative AI in Higher Education: The ChatGPT Effect* by Cecilia Ka Yuk Chan and Tom Colloton presents several **methodological insights**, particularly centred around integrating generative AI like ChatGPT into educational practices. They collectively provide a roadmap for educators, researchers, and policymakers to harness the transformative potential of generative AI while addressing its challenges and ensuring its ethical use in higher education. The key methodological approaches we want to highlight are *Six Assessment Redesign Pivotal Strategies (SARPS)* (as outlined in Chapter 4.5 in which structured methodology for rethinking assessment in the age of AI is provided. It focuses on balancing the advantages of AI, such as efficiency and personalization, with maintaining authenticity, creativity, and ethical integrity in academic assessments; *the AI Assessment Integration Framework* (discussed in Chapter 4.6 highlights practical steps for embedding AI technologies into the assessment process. This includes identifying appropriate tools, aligning them with learning outcomes, and ensuring assessments are transparent and fair while using AI capabilities effectively; *Case Studies and Prompts* in Chapter 6 (includes diverse case studies demonstrating innovative uses of generative AI in teaching, learning, and assessment processes, providing actionable insights for educators and policymakers); *Ethical Frameworks for Policy Development* in Chapter 7 (the authors emphasize the importance of an ethical framework that includes transparency, fairness, accountability, and inclusivity when integrating AI into educational policies and practices); *Learning Analytics and Data Use* (the discussion of leveraging AI-

driven learning analytics to monitor student performance and provide targeted interventions in Chapter 1. This data-driven methodology supports personalized learning pathways); and *Comparative Analysis of Global AI Policies* (particularly Chapter 5.3.9 includes a comparative analysis of existing AI policies in education worldwide, helping institutions learn from diverse approaches and adopt best practices).

The book emphasizes the symbiotic relationship between artificial intelligence and education, highlighting how generative AI tools like ChatGPT redefine learning environments. It sheds light on AI's capabilities in enhancing personalized learning experiences, offering innovative assessment methods, and supporting educators in curriculum redesign. The authors stress the ethical considerations and societal implications of integrating AI into education, fostering a responsible approach to adoption. The authors propose actionable frameworks, such as the Six Assessment Redesign Pivotal Strategies (SARPS), to guide institutions in leveraging AI effectively.

Chapters 1, 4, 5, and 6 warrant particular attention in this book. For instance, Chapter 1, *Introduction to AI in Higher Education*, provides an essential foundation by explicating the core concepts of Artificial Intelligence (AI), Big Data, and the Internet of Things (IoT). The chapter further explores the transformative potential of ChatGPT as an academic tool, demonstrating its accessibility to a broad spectrum of educators and students. It presents a comparative analysis of the challenges and characteristics involved in generating various types of content, including text, images, music, audio, video, and code (p. 13), alongside a discussion of the most widely used software applications for these purposes. The chapter introduces the Internet of Things (IoT) through a comprehensive definition: "While some may mistakenly regard IoT solely as referring to devices connected to the internet, it encompasses far more than this. Devices that integrate electronic components, software, and sensors to enable data exchange, such as Bluetooth-enabled devices, are also considered part of IoT" (p. 7). This provides readers with a clear understanding of IoT's broader scope, establishing a solid framework for the ensuing discussions in the text.

Chapter 4, *Redesigning Assessment in the AI Era*, offers a compelling exploration of innovative assessment models that effectively balance the capabilities of AI with human-centric values. The authors emphasize the critical importance of preserving authenticity and academic integrity when integrating AI tools into educational practices. Noteworthy discussions include *Promoting Academic Integrity and Genuineness in the AI Era* (pp. 96–98) and *Prioritizing Soft Skills and Feedback in Assessments in the AI Era* (pp. 98–100), which highlight the need to align AI-driven assessments with ethical and pedagogical considerations.

The chapter further supports the potential of AI-enhanced assessments through detailed case studies across nine distinct categories: performance-

based, personalized or contextualized, human-centric competency, human-machine partnerships, project- or scenario-based, time-sensitive AI-generated adaptive, metacognitive, ethical and societal impact, and lifelong learning portfolio assessment (pp. 102–120). Each category is explored with practical scenarios, illustrating how these innovative frameworks can be applied to real-world educational contexts.

Subsequent discussions delve deeper into each type of assessment, providing illustrative case scenarios that encourage educators to reflect on how they can redesign and integrate AI into their own assessment strategies effectively. This approach underscores the transformative potential of AI to enhance both the learning and teaching experience.

Chapter 5 on *Developing AI in Education Policy* provides a comprehensive analysis of global and institutional AI policies, with a particular focus on higher education, emphasizing the principles of transparency, fairness, and accountability. It incorporates empirical findings through the *Research Findings from the Perception of Students, Teachers, and Staff on GenAI in Education Policy in Hong Kong*. Conducted in February 2023, shortly after the public release of ChatGPT, this study presents a qualitative exploration of diverse stakeholder views on the necessity and structure of AI policies in higher education. The research underscores the importance of addressing the unique requirements of students, educators, and university staff, acknowledging the undeniable impact and proliferation of AI technologies in academic settings.

To bridge theoretical insights with practical applications, the authors propose actionable steps for higher education institutions to develop and implement AI policies. These recommendations emphasize alignment with ethical standards and educational objectives. The chapter further illustrates these steps through the example of the hypothetical “University of ABC”, offering a detailed framework for policy development and execution (pp. 157–161). This approach ensures that institutions can effectively navigate the integration of AI while upholding integrity and fostering innovation in educational practices.

One more specific accent is put on technology in Chapter 6 *Technology Behind GenAI*. The chapter offers a historical perspective, tracing the development of ANNs from their initial conceptualization to their current application in state-of-the-art models. This contextual backdrop enhances the understanding of the evolution of AI technologies. Moreover, the text situates GenAI and its various model types – such as large language models (LLMs) and text-to-image models like diffusion models – within the broader domain of deep learning ANNs. Figure 6.1 (p. 167) effectively visualizes this classification, highlighting the interconnections and advancements that define the current landscape of GenAI technologies.

In summary, the book adeptly balances theoretical exploration with practical guidance. Its clear and accessible language, coupled with the inclusion of case studies, prompts, and real-world examples, ensures its applicability across diverse educational levels and professional contexts. The authors emphasize interdisciplinary approaches, highlighting the necessity of collaboration to fully harness the potential of AI.

Generative AI in Higher Education: The ChatGPT Effect serves as a timely and comprehensive resource for educators, researchers, and policymakers. By addressing the challenges and opportunities presented by generative AI, the book fosters confidence in embracing this technology while maintaining educational integrity. It encourages readers to not only adapt to AI advancements but to actively shape the future of education.

References

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