



Handbook of Research in Online Learning: Insights and Advances (Book Review)

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Trey Martindale, Tonya Amankwatia, Lauren Cifuentes and Anthony Piña

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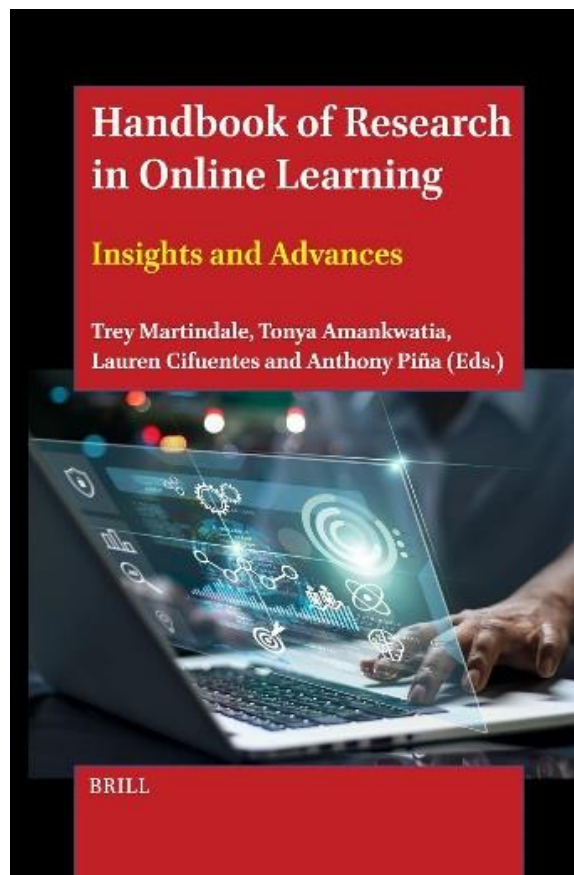
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Book Review

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Introduction

As global education navigates post-pandemic recovery and AI-driven transformation, *The Handbook of Research in Online Learning: Insights and Advances*, edited by Trey Martindale, Tonya Amankwatia, Lauren Cifuentes, and Anthony Piña, emerges as a timely and crucial contribution to the field of online education, aligning with UNESCO's (2023) urgent calls for educational transformation and vision for leveraging information and communication technologies to enhance educational outcomes. This handbook offers a comprehensive synthesis of online learning research, integrating perspectives from various scholars in the field. It critically examines current trends, theoretical developments, and evolving pedagogical practices within online education.

Chapters

The handbook consists of four thematic sections with twenty-seven chapters, providing a coherent trajectory from theoretical foundations to practical applications. Each section deals with distinct yet interrelated dimensions of online learning: frameworks and models, learner insights, instructional support systems, and emerging advances, offering diverse perspectives on the multifaceted nature of online learning.

The first section (Chapters 1–7) sets a foundation through systematic and scoping reviews alongside various theoretical frameworks. The first two chapters address methodological rigor. Chapter 1 emphasizes meticulous planning and protocol adherence for conducting systematic reviews within online learning, while Chapter 2 critiques the quantitative dominance in adult distance education research, advocating clearer terminology and robust measurement. Chapter 3 explores the theoretical and practical integration, which synthesizes models for online learning environments, media design, and learner-centered theories, and Chapter 6, which develops evidence-based principles and practical tools for active online learning design. The authors also critically examine educator development. Chapter 4 reveals

overreliance on self-reported data and gaps in assessing classroom transfer in online teacher education, leading Chapter 5 to propose a responsive, consultative professional development model emphasizing flexible content, delivery modes, and cultural awareness. Finally, Chapter 7 synthesizes adult informal online learning research showing professional development, social media use, and self-directed learning as dominant themes.

The second section (Chapters 8–14) shifts focus to learner experiences, exploring learner-centered design and instructional integrity in digital environments through interconnected themes. Digital literacy and ethics are advanced in Chapter 8, which analyzes identity and power dynamics within multimodal writing ecologies, complemented by the examination of anti-cheating innovations in Indiana University’s global plagiarism tutorial (IPTAT) in Chapter 9. Adaptive technologies receive critical attention: Chapter 10 evaluates gaps in validating STEM adaptive learning systems, while Chapter 11 introduces CAPSULE’s real-time cognitive and emotional engagement tracking to personalize instruction. Evidence-based frameworks are strengthened through the revision of the Community of Inquiry model in Chapter 12, synthesizing principles for teaching, social, and cognitive presence. The authors address teacher education in online teaching through the advocacy for systemic integration of accredited online teaching preparation into pre-service programs in Chapter 13, alongside the microlearning design strategies using Gagné’s framework to boost engagement and retention in Chapter 14.

The third section (Chapters 15–21) addresses the instructional design, equity, and support systems for online education. Chapter 15 sets up a systematic blended learning framework prioritizing modality choice based on skill complexity, content stability, and cost-efficiency. Equity considerations are central to online teaching and learning. Chapter 16 evaluates digital learning’s impact on reducing achievement gaps for marginalized student groups, while Chapter 17 introduces a Remote Academic Advising model to enhance support structures. Support innovations extend to Chapter 18 that presents the analysis of

evolving online mentoring models and AI-driven chatbot mentors. Chapter 19 addresses learner wellbeing with the authors proposing design-centric strategies to combat mental fatigue through cognitively considerate design. Chapter 20 integrates the Analysis of Patterns in Time method with Google Analytics 4 for real-time teaching optimization. As a concluding chapter in this section, Chapter 21 delineates a fundamental distinction between crisis-driven emergency remote teaching (ERT) and well-planned online learning, exploring their features, evaluation, and post-crisis implications.

The concluding section (Chapters 22–27) offers a critical assessment of how to integrate emerging technologies into online education and their subsequent impacts. Chapter 22 specifically analyzes digital learning resources, highlighting that the effectiveness of e-texts depends on student traits, feature design, and instructor mediation. Chapter 23 proposes a framework for ethically integrating large learning model–artificial intelligence (LLM-AI), such as ChatGPT, into active learning design and assessment, while Chapter 24 reveals AI discussion tools boost engagement through curiosity metrics but face navigation complexity and cost barriers. Chapter 25 explores immersive learning showing how game-based learning enhances motivation and engagement in Hong Kong higher education, especially via multi-user designs grounded in social learning theory. Chapter 26 discusses quality assurance systems that provide a course design checklist for professional military education. Future-ready competencies conclude the section in Chapter 27 showing essential post-pandemic skills—self-regulation, digital literacy, and soft skills—for intentional online learning beyond emergency contexts.

Evaluation

The Handbook of Research in Online Learning makes several notable contributions to the field of online learning research. One major contribution lies in the combination of evidence-based pedagogical approaches with methodological rigor, which not only synthesizes current knowledge in online learning but also offers practical guidance on translating such knowledge into real-world contexts. This integration

of theoretical insight with practical application makes this handbook a valuable resource for academics and practitioners alike. The authors provide an interdisciplinary analytical framework for examining diverse complexities of online learning that incorporates a wide range of insights from leading scholars across multiple disciplines, including psychology, education, foreign language teaching, and computer science, facilitating a thorough understanding of the intricate nature of online education. The handbook also attaches significant importance to practical strategies for enhancing online learning experiences. Chapters addressing instructional design, professional development, and the application of emerging technologies and technology-mediated teaching and learning provide insightful suggestions for educators and researchers to build a collaborative and inclusive teaching and learning environment. The authors exhibit considerable foresight in dealing with emerging trends of online learning research through the exploration of AI integration, gamification, open educational resources, and soft skills development—particularly the detailed discussions of AI’s transformative potential in Chapters 23–25 that reflects and predicts the evolving demands in online education. This forward-thinking stance ensures the handbook keeps its relevance and timeliness within the ever-evolving landscape of educational practice.

While the handbook offers numerous strengths, it is not without limitations. A key shortcoming lies in its geographic imbalance is that the authors draw many of their case studies and research illustrations from North American and European institutions, with relatively little coverage of those in Asia, Africa, or Latin America. Such a narrow geographic scope restricts the broader applicability of its conclusions, particularly when exploring critical issues like fair access to technology and the cultural responsiveness of online learning designs. Another notable gap is the handbook’s limited treatment of administrative and managerial sides within online education systems. While Chapter 26 briefly addresses quality assurance in online professional military education, there is a conspicuous absence of research on strategic planning, resource allocation, or faculty management in online programs. The last weakness lies in its disparity of innovative technologies application in online learning. While it explores AI and gamification with some

thoroughness, its coverage of metaverse technologies and generative AI stays at a surface level. Given the fast-paced development of AI-driven educational technologies, such limited exploration could undermine the handbook's academic value and rigor on its long-term relevance.

In conclusion, *the Handbook of Research in Online Learning* stands as a crucial, timely contribution to online education research, distinguished by its diverse theoretical frameworks and rich empirical evidence in real-life educational contexts. As online learning continues to develop in the digital era, this handbook will serve as an excellent and indispensable resource for teachers, educators, researchers, policymakers, as well as graduate students researching the complex, dynamic landscape of online education, guiding the field toward more effective and innovative educational initiatives to shape the future of education.

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