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Article

**REVIEW 4:** *ETHICS AND EDUCATIONAL TECHNOLOGY: REFLECTION, INTERROGATION, AND DESIGN AS A FRAMEWORK FOR PRACTICE.* **(STEPHANIE L. MOORE, HEATHER K. TILLBERG-WEBB)**

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**Review of: Moore, S. L., Tillberg-Webb, H. K.** **(2023).** *Ethics and Educational Technology: Reflection, Interrogation, and Design as a Framework for Practice.* **Routledge. 328 pages. ISBN: 978-0-415-89508-8**

In educational settings, the intersection of ethics and technology has become increasingly significant, prompting critical reflections on the ethical implications of integrating technology

into learning environments. The book, *Ethics and Educational Technology: Reflection, Interrogation, and Design as a Framework for Practice,* by Stephanie L. Moore and Heather K. Tillberg-Webb offers a comprehensive exploration of the ethical dimensions of integrating technology in educational settings. Published by Routledge in 2023, this timely work provides educators, policymakers, and practitioners with valuable insights into navigating the complex ethical challenges inherent in educational technology. With its nine chapters organized around three central themes—Ethics as Reflective Practice, Interrogating Technology, and Design-Based Approach—the book provides a nuanced framework for understanding and addressing ethical challenges in educational technology. At the end of each chapter, the "Ethics in Practice" section addresses the reflections of the specific ethical issues related to the chapter in practice. This review explores the book, drawing insights from the authors' perspectives and synthesizing key concepts to evaluate the book's contribution to shaping ethical practices in educational technology. Through this analysis, we aim to uncover the book's strengths, weaknesses, and its potential impact on educators, researchers, and policymakers by navigating the ethical complexities of technology-enhanced learning environments.

In the first chapter, "The Educational Technology Problem Space," Moore and Tillberg-Webb examine the intricate landscape of ethical considerations in educational technology. Through a nuanced exploration of technological affordances and a design-based approach to ethics, the authors illuminate the dual potential of educational technologies to yield both benefits and harm. By addressing a conspicuous gap in the existing literature and practice within the field, the chapter underscores the urgent need for critical reflection on the ethical dimensions inherent in educational technology. Moreover, by contextualizing these discussions within the evolving landscape of the COVID-19 pandemic, Moore and Tillberg-Webb highlight the heightened significance of ethical issues such as accessibility, the digital divide, and learner diversity. Ultimately, the chapter serves as a compelling call to action for stakeholders in the educational technology ecosystem to engage in reflective practice and conscientious decision-making, setting out a robust foundation for the subsequent exploration of ethics in educational technology.

Following the introductory chapter of the book, the authors deal with the first theme of "Ethics as Reflective Practice" in the second and third chapters. In the second chapter, entitled, "Professional Ethics as Reflective Practice," the authors delve into a multifaceted evaluation of educational technologies, emphasizing the importance of considering outcomes and approaches rather than simply categorizing situations as advantageous or disadvantageous. Against the backdrop of the COVID-19 pandemic, the authors highlight pressing issues such as infrastructure deficiencies, limited internet access, unemployment, and suboptimal learning environments at home, underscoring the ethical imperative to address systemic inequalities exacerbated by remote learning. By delineating three types of commitment within a code of ethics—towards individual learners, the profession, and society—the chapter emphasises the multifaceted nature of ethical responsibilities in educational technology, ultimately advocating for a reflective and value-driven approach to ethical practice.

In the third section, "The Designer's Practice," central to this exploration are the concepts of problem framing, reflection-in-action, and stakeholder involvement, which underscore the imperative for designers to engage in reflexive and participatory approaches to ethical decision-making. By advocating for a holistic evaluation of ethics that encompasses not only cognitive and affective dimensions but also conative aspects, the authors challenge conventional paradigms and underscore the importance of embedding ethical considerations into the very fabric of educational technologies. Moreover, the chapter interrogates the myth of objectivity in design, highlighting the inherent subjectivity of designers and the ethical imperative to acknowledge and navigate these subjective biases. Through nuanced discussions on the role of Ed Tech professionals as change agents and the designer's presence in instructional design and educational technologies, the authors underscore the transformative potential of ethical design practices in shaping more equitable and inclusive learning environments. Overall, the chapter serves as a thought-provoking exploration of the ethical dimensions inherent in the designer's practice, compelling readers to critically reflect on their roles and responsibilities in advancing ethical considerations within educational technology design.

The second theme of the book is about questioning technology and covers Chapters 4 and 5. In the fourth chapter, "Thinking Critically About Technology," Moore and Tillberg-Webb embark on

a nuanced exploration of how educational technologists perceive and engage with technology. Through a historical lens, the authors trace the evolution of the philosophy of technology, underscoring the influence of modernism as the backdrop for technological determinism—a paradigm that posits technology as the primary driver of social change. Against this backdrop, the chapter critically examines the concept of technological determinism and its various iterations, including determinism, substantivism, instrumentalism, critical theory, and postmodernism (specifically post-structuralism and constructivism). By interrogating educational technologies through utopian and dystopian lenses, Moore and Tillberg-Webb invite readers to critically assess the implications of technological determinism on educational practice and society at large. Moreover, the chapter reflects on how educational technologies are evaluated with the models of linear development, technological determinism and contextual interaction presented by Barbour (1993); and the varieties of theory-technology's neutral and value-laden dimensions with autonomous and humanly controlled criteria presented by Feenberg (1999), providing readers with conceptual tools to navigate the complex terrain of technology critique. The fourth chapter extends its critical inquiry to include the metamodernism perspective. Embracing the complexities of contemporary technological landscapes, the authors introduce metamodernism as a lens through which to interrogate the interplay between technology and educational practices. Metamodernism, situated beyond the dichotomies of modernism and postmodernism, offers a framework for understanding the fluidity and multiplicity of technological narratives. Overall, the fourth chapter serves as a compelling invitation to think critically about technology and its implications for education, challenging readers to engage with technology not as a deterministic force but as a dynamic and contingent phenomenon shaped by social, cultural, and political forces.

In the fifth chapter, "Socio-technical Frameworks for Educational Technology", the authors offer a sophisticated analysis of educational activities through the lens of socio-technical frameworks, drawing upon foundational theories such as those elucidated by Vygotsky. Central to this exploration is the creation of a comprehensive framework for understanding educational technologies, incorporating insights from social construction of technology, affordance theory, actor-network theory, cultural-historical activity theory, and entangled pedagogy. The social construction of technology theory posits that technologies are developed and associated within relevant social groups, highlighting the intertwined relationship between technology and society. Affordance theory provides a lens through which educational technologies are evaluated based on their actual and perceptible affordances, shedding light on the ways in which technologies shape and are shaped by human interactions. Actor-network theory further enriches this framework by emphasizing the interconnectedness between tools and contexts through the agency of both human and nonhuman actors, underscoring the dynamic and relational nature of technological artifacts. Drawing from Vygotsky's mediating action theory, cultural-historical activity theory focuses on the social distribution of activity, highlighting components such as subject, object, mediating artifacts, rules, community, and division of labor. Through Engeström's model (1999), these components are elucidated, providing a nuanced understanding of the socio-technical dynamics at play in educational contexts. Finally, entangled pedagogy and Fawns' model (2022) are interrogated, offering a departure from deterministic paradigms by emphasizing the mutual shaping of purpose, context, values, methods, and technology. Unlike technological determinism and pedagogical determinism, entangled pedagogy prioritizes purpose, context, and values over methods and technology, foregrounding the dynamic interplay between these elements in educational practice.

Chapters 6–9 deal with educational technology and ethics under the theme of "Design-based Approach". Chapter 6 on "Ethics as Design" presents a compelling exploration of reframing ethics as design, highlighting the intrinsic relationship between ethical thinking and the design process within educational technology. The authors adeptly navigate the nexus of design and ethics, emphasizing how design serves as a synthesis of critical analysis and action. By conceptualizing design as both conception and socially responsive practice, the authors underscore the importance of embedding ethical considerations throughout the design process. Through the lens of participatory design, they advocate for the active involvement of learners and users in shaping educational technologies. Importantly, the chapter elucidates how the design process facilitates the generation of solutions that embody ethical principles such as transparency, consent, choice, accountability, and privacy. Besides, the authors explore the

intersection of design ethics and social justice, particularly in virtual worlds and simulations, underscoring the ethical imperatives inherent in creating inclusive and equitable learning environments. Overall, Chapter 6 offers a nuanced and pragmatic framework for integrating ethics into the fabric of educational technology design, challenging readers to reconceptualize ethics not as an afterthought, but as a fundamental guiding principle shaping the design and implementation of educational technologies.

Chapter 7, "Learner Diversity and Inclusive Design," addresses the essential topic of creating inclusive and accessible learning environments. The authors focus on the multifaceted nature of access, distinguishing between technical, cognitive, and learning accessibility. They explore universal design (UD) and universal design for learning (UDL) principles, emphasizing equitable use, flexibility, and intuitive design to meet diverse learning needs. The chapter highlights UDL principles related to engagement, representation, and expression, underscoring their importance in educational technology. By promoting interest, effort, persistence, self-regulation, comprehension, and communication, the authors provide practical strategies and ethical considerations for fostering inclusivity. In summary, Chapter 7 equips educators and technologists with the tools to create diverse and accessible learning environments, emphasizing UD, UDL, and inclusive design principles.

Chapter 8, "The Ethics-in-Design Method: Integrating Ethics into Planning, Decision-Making and Evaluation Processes," explores the ethics-in-design method, detailing how to integrate ethical considerations into planning, decision-making, and evaluation within educational technology design. The authors address complexities around the designer's presence, stakeholder involvement, and societal outcomes, emphasizing ethical conduct throughout the design process. They cover analysis, design, development, and evaluation phases, stressing the need to align decisions with societal needs through comprehensive front-end analysis. The chapter adapts Kaufman's (2000) organizational elements model for evaluating ethical dimensions at societal, organizational, and learning levels. It also examines the ethics of evaluation, emphasizing the role of organizational culture and leadership in promoting ethical practices. Overall, Chapter 8 highlights the potential for leaders in educational technology and instructional design to incorporate social and ethical factors into educational settings.

Chapter 9, "The Ethics-in-Design Method: Integrating Ethics into Design, Development, and Technology Selection," delves into ethical considerations in educational technology design. It examines strategy, content, and technology selection through Cultural Historical Activity Theory (CHAT) and Actor-Network Theory (ANT), highlighting instructional designers, instructional problems, and desired outcomes. The chapter emphasizes the importance of professional practices, evidence-anchored strategies, and engagement with diverse knowledge domains. Ethical content and technology selection, focusing on learning outcomes, affordances, and usability, are discussed. It also addresses socio-cultural foundations, including academic integrity, accessibility, copyright, inclusive communities, vendor selection, and cost-value assessments. This chapter provides a framework for integrating ethics into educational technology design and development, offering practical strategies for navigating ethical complexities.

While the book offers a comprehensive and practical framework for addressing ethical considerations in educational technology, there are a few areas where it falls short. First, while the inclusion of reflective questions and practical links to practice is valuable, some readers might find the discussions overly theoretical and lacking in concrete, actionable steps for immediate implementation in diverse educational settings. Similarly, although the book covers a wide range of ethical issues, it occasionally assumes a level of prior knowledge that might not be accessible to all readers, particularly those new to the field. The extensive use of multiple theoretical frameworks can sometimes be overwhelming, making it challenging for readers to synthesize and apply these concepts cohesively. Lastly, while the design cases included are illustrative, more real-world examples from a variety of educational contexts would further enhance the book's practical relevance and applicability. Despite these shortcomings, the book remains a significant resource for higher education professionals seeking to navigate the ethical complexities of educational technology.

Last but not least, the book helps readers to use their own experience, to connect to practice, to reflect on the ethical frameworks highlighted, and to develop a deeper understanding of the

topic. Design cases included in most chapters enhance the readers' theoretical background of ethical considerations. Essential and optional reading suggestions at the end of each chapter also guide readers wishing to deepen their understanding in the related area, whereas "Ethics in Practice" sections encourage the application of relevant ethical issues. Moreover, the discussion questions at the end of each chapter provide a fitting way to engage academics and HE students to reflect on these complex issues. To sum up, the book provides a remarkable overview of the subject for the higher education context as well as a practical framework in which ethical issues in educational technology can be addressed. The focus on the process of technology education in terms of objectives, design, reflection, planning, implementation and evaluation, rather than a more prescriptive approach, makes this book a valuable addition to the field on ethics and educational technology.