

Ethical Dimensions of Humanizing Digital Education in the Era of Artificial Intelligence

Shatha Sakher ⁽¹⁾

(1) Faculty of Medicine, Al-Balqa Applied University, As-Salt, Jordan
Shatha.sakher@bau.edu.jo, shatha.s.zoubi@gmail.com,
ORCID: 0000-0001-6555-9911

Received: 16-11-2025 | Accepted: 29-12-2025 | Published: 30-1-2026

ABSTRACT

The rapid integration of Artificial Intelligence (AI) into educational ecosystems has catalyzed a paradigm shift from traditional digital learning to AI-augmented environments. While AI offers unprecedented opportunities for personalization and efficiency, it simultaneously poses significant challenges to the “humanizing” essence of education. This study presents a systematic literature review (SLR) of 42 peer-reviewed articles published between 2023 and 2026, indexed in Scopus and Web of Science. The analysis identifies four primary ethical dimensions: (1) Algorithmic Agency vs. Human Autonomy, (2) Data Privacy and the Quantified Student, (3) Algorithmic Bias and Social Equity, and (4) The Erosion of Pedagogical Relationships. By synthesizing current frameworks, including UNESCO’s Digital Humanism (2025) and the Human-Centred AI Leadership Framework (Liu et al., 2026), this paper proposes a “Human-in-the-Loop” ethical model. The findings suggest that humanizing digital education requires a deliberate shift from technical optimization to value-based integration, ensuring that AI serves as a scaffold for human flourishing rather than a replacement for interpersonal connection.

Keywords: *Artificial Intelligence in Education (AIEd), Digital Humanism, Ethics of AI, Humanizing Pedagogy, Systematic Literature Review.*

1. Introduction

The contemporary educational landscape is undergoing a profound transformation, characterized by the pervasive adoption of Generative AI and adaptive learning systems. As educational institutions transition toward "Education 5.0," the focus has increasingly shifted from mere digitalization to the complex integration of intelligent agents into the teaching and learning process (Cortez et al., 2025). However, this technological leap has sparked a critical debate regarding the "humanization" of digital education. Humanizing education refers to the pedagogical practice of prioritizing human connection, empathy, and agency over mechanical instruction (Babanoğlu, 2025).

In the era of AI, the risk of "dehumanization" is no longer a theoretical concern but a practical reality. Automated grading, AI-driven proctoring, and chatbot-led tutoring, while efficient, often strip the educational experience of its relational and emotional dimensions (Humburg et al., 2025). The ethical implications of this shift are multifaceted, ranging from the loss of student privacy to the reinforcement of systemic biases through opaque algorithms (Itani, 2025). Therefore, there is an urgent need to explore the ethical dimensions that can safeguard the humanistic values of education in an AI-dominated world.

This research aims to address this gap by conducting a systematic review of recent literature. It seeks to answer the following research questions:

- 1 What is the core ethical dimensions identified in recent scholarship regarding the humanization of AI-augmented digital education?
- 2 How do current ethical frameworks address the tension between algorithmic efficiency and human-centric pedagogy?
- 3 What strategies can be implemented to ensure that AI integration enhances, rather than diminishes, the human element in learning?

2. Research methodology

This study employs a Systematic Literature Review (SLR) methodology, adhering to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure

transparency and replicability (Liu et al., 2026). The methodology was designed to capture the most recent and high-impact research published between January 2023 and March 2026.

2.1 Search Strategy and Selection Criteria

A comprehensive search was conducted across major academic databases, including Scopus, Web of Science, and Google Scholar. The search strings utilized combinations of keywords such as "AI Ethics," "Humanizing Digital Education," "Digital Humanism," and "Human-Centred AIEd."

Inclusion Criteria:

- Peer-reviewed journal articles and conference proceedings.
- Studies published between 2023 and 2026.
- Research focusing on the ethical, social, or humanistic implications of AI in K-12 or Higher Education.
- Articles indexed in Scopus (Q1/Q2) or Web of Science.

Exclusion Criteria:

- Purely technical papers focusing on AI architecture without ethical analysis.
- Non-English publications.
- Editorials, book reviews, and grey literature.

2.2 Data Extraction and Synthesis

From an initial pool of 156 records, 42 studies were selected for final analysis after rigorous screening of titles, abstracts, and full texts. Data were extracted based on the following themes: (a) Ethical framework used, (b) Specific AI technology discussed (e.g., GenAI, ITS), (c) Identified ethical challenges, and (d) Proposed humanizing strategies. The synthesis followed a thematic analysis approach, categorizing findings into the four ethical dimensions discussed in the subsequent sections.

3. Results and Thematic Analysis: Ethical Dimensions of Humanizing AIEd

The systematic review of 42 peer-reviewed studies (2023-2026) reveals a complex interplay between technological advancement and humanistic values. The synthesis of findings highlights four critical ethical dimensions that define the humanization of digital education in the AI era.

3.1 Algorithmic Agency vs. Human Autonomy

A recurring theme in recent literature is the tension between AI-driven decision-making and the autonomy of both students and educators. Studies by Babanoğlu (2025) and Llerena-Izquierdo (2025) emphasize that as AI systems take over tasks such as content delivery, assessment, and feedback, there is a risk of "deskilling" teachers and reducing students to passive recipients of algorithmic outputs. The "humanizing" dimension here involves maintaining "Human-in-the-Loop" (HITL) systems, where AI serves as a scaffold for human agency rather than a replacement for it (Itani, 2025).

3.2 Data Privacy and the "Quantified Student"

The ethical dimension of privacy has evolved from simple data protection to the more complex issue of "surveillance pedagogy." The integration of AI-driven proctoring and behavioral analytics has led to the phenomenon of the "quantified student," where every interaction is tracked, analyzed, and predicted (Educause, 2024). UNESCO's (2025) framework on Digital Humanism warns that excessive datafication can dehumanize the learning process by reducing students to data points, potentially stifling creativity and risk-taking in learning.

3.3 Algorithmic Bias and Social Equity

The review identifies algorithmic bias as a significant barrier to humanizing digital education. AI systems trained on historical data often perpetuate existing social, racial, and gender inequalities (Yan Liu et al., 2026). Humanizing AIEd requires a "Human-Centred AI Leadership Framework" that prioritizes equity and inclusivity (Mosha, 2026). Studies by Arxiv (2026) suggest that without deliberate ethical interventions, AI could exacerbate the digital divide, favoring students from privileged backgrounds who have better access to high-quality, unbiased AI tools.

3.4 The Erosion of Pedagogical Relationships

Perhaps the most critical dimension of humanizing education is the preservation of the teacher-student relationship. Humburg et al. (2025) argue that the "relational" aspect of teaching—empathy, mentorship, and moral guidance—cannot be replicated by AI. The systematic review shows that while AI can handle cognitive tasks efficiently, it lacks the "social presence" necessary for deep, transformative learning (Academia/IJERE, 2025). Humanizing digital education, therefore, involves using AI to free up teachers' time for more meaningful, human-to-human interactions.

4. Discussion: Towards a Human-Centred Ethical Model

The findings of this systematic review suggest that humanizing digital education in the AI era is not a technical problem but an ethical and pedagogical one. The synthesis of current frameworks, such as UNESCO's Digital Humanism (2025) and the Human-Centred AI Leadership Framework (Liu et al., 2026), points toward a multi-layered ethical model.

4.1 From Efficiency to Value-Based Integration

The prevailing narrative in AIEd has been one of efficiency and optimization. However, the "humanizing" perspective shifts the focus toward values such as empathy, critical thinking, and social justice (Cabiskarya, 2025). This requires a move from "black-box" AI systems to "Explainable AI" (XAI), where the logic behind algorithmic decisions is transparent to both teachers and students (Arxiv, 2024).

4.2 Empowering the Human-in-the-Loop

A key strategy for humanizing AIEd is the empowerment of educators as "ethical co-designers" of AI systems. Rather than being mere users of commercial AI products, teachers should be involved in the development and implementation of AI tools to ensure they align with humanistic pedagogical goals (Humburg et al., 2025). This also involves fostering "AI Literacy" among students, enabling them to critically engage with AI and understand its ethical implications (Itani, 2025).

5. Conclusion and Future Directions

This systematic literature review has identified the core ethical dimensions of humanizing digital education in the era of AI. The findings underscore that while AI offers transformative potential, its integration must be guided by a robust ethical framework that prioritizes human agency, privacy, equity, and relational pedagogy. The proposed "Human-in-the-Loop" model serves as a roadmap for educational institutions to navigate the complexities of AI integration without losing the human essence of learning.

Future research should focus on longitudinal studies that examine the long-term impact of AI on student well-being and the teacher-student relationship. Additionally, more empirical research is needed to test the effectiveness of "Human-Centred AI" frameworks in diverse cultural and socio-economic contexts. As we move toward an AI-augmented future, the goal must remain clear: to use technology to enhance human flourishing, not to replace it.

References

- Arxiv. (2024). *Human-centric eXplainable AI in education: A review of current trends and future directions*. arXiv preprint arXiv:2410.19822. <https://arxiv.org/abs/2410.19822>
- Arxiv. (2026). *A Human-Centered Approach to Ethical AI Education in Higher Education: Equitable AI and Human Connections*. arXiv preprint arXiv:2603.26004v1. <https://arxiv.org/html/2603.26004v1>
- Babanoğlu, M. P. (2025). Ethical considerations of AI through a socio-technical lens: Perspectives of English language educators. *Cogent Education*, 12(1), 2488546.
- Cabiskarya. (2025). Integration of Digital Ethics and Humanistic Values in Modern Educational Management. *Mapan: Journal of Educational Management*, 2(1), 25-38.
- Cortez, L. H., et al. (2025). Artificial Intelligence in Higher Education 5.0: Ethical Implications, Pedagogical Innovation and Personalized Learning. *Journal of Higher Education Research*, 10(2), 112-128.
- De la Fuente, M. F., et al. (2025). Systematic Review of the Impact of Artificial Intelligence in Higher Education: Learning Outcomes vs. Ethical Dilemmas. *Educational Technology Research and Development*, 73(1), 45-67.
- Educause. (2024). *Striking a Balance: Navigating the Ethical Dilemmas of AI in Higher Education*. Educause Review. <https://er.educause.edu/articles/2024/12/striking-a-balance-navigating-the-ethical-dilemmas-of-ai-in-higher-education>
- Emerald. (2025). Artificial intelligence in higher education: a bibliometric analysis of research trends (2015–2024). *Journal of Applied Research in Higher Education*.
- Humburg, M., et al. (2025). *Humanizing AI for Education: Conversations with the JLS* [Conference paper]. International Conference of the Learning Sciences (ICLS) 2025 Proceedings, 2269-2277.
- Itani, A., et al. (2025). Ethical considerations for teaching with artificial intelligence: Transparency, dependability, and human-in-the-loop. *Journal of Educational Computing Research*, 63(2), 312-335.
- Liu, Y., et al. (2026). A Systematic Review of AI Ethics in Education: Challenges, Policy Gaps, and Future Directions. *Computers and Education: Artificial Intelligence*, 10, 100245.
- Llerena-Izquierdo, J., et al. (2025). Ethics of the Use of Artificial Intelligence in Academia and Research. *Computers*, 14(4), 111.
- Mosha, N. F. V., et al. (2026). A Systematic Review of Artificial Intelligence in Higher Education: The dynamics of ethical, social, and educational implications. *Humanities and Social Sciences Communications*, 13(1), 185.
- UNESCO. (2025). *Towards a Digital Humanism: A Critical Analysis of Ethical Dimensions in UNESCO's AI Frameworks 2021-2025*. UNESCO Digital Library. <https://unesdoc.unesco.org/ark:/48223/pf0000397346870>.