MAPAN : Manajemen Pendidikan dan Analisis
Journal Link: https://cabiskarya.com/mapan/id
Volume 1, Nomor 2 (2025)
ISSN : XXXX-XXXX

Integration of Digital Ethics and Humanistic Values in Modern Educational Management

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Submitted : November 15, 2025 **Accepted :** Desember 28, 2025 **Published :** Desember 30, 2025

A B S T R A C T

The development of digital technology has transformed the landscape of modern education, encompassing administrative management, online learning, and the utilization of artificial intelligence. This transformation offers significant opportunities in terms of efficiency, connectivity, personalized learning, and the enhancement of educational management quality. However, these advancements also pose serious challenges related to digital ethics, including privacy violations, algorithmic bias, data misuse, and inequitable access. In this context, the integration of digital ethics becomes crucial to maintain a balance between technological innovation and humanistic values in education. This study aims to explore the urgency of digital ethics in educational management and to formulate implementation strategies that prioritize the principles of transparency, accountability, inclusivity, and justice. The methodology employed is qualitative, based on a literature study, with thematic analysis of various recent research, policy reports, and reputable academic literature. The findings indicate that digital ethics is not merely a technical guideline but a moral foundation that ensures technology is used responsibly. The integration of humanistic values, such as empathy, honesty, responsibility, and character development, has been shown to be key in preventing the dehumanization of education. Moreover, multi-stakeholder collaboration among educators, learners, institutions, policymakers, and the community is considered essential for fostering a healthy and sustainable digital culture. In conclusion, educational management grounded in digital ethics is necessary to make technology not only an instrument of efficiency but also a means of strengthening humanistic values, while ensuring equitable access, social justice, and the quality of learning in the digital era.

Keywords: digital ethics, humanism, educational management

Introduction

The rapid development of digital technology has brought significant changes to educational practices, ranging from learning processes and classroom management to institutional administration. This transformation presents opportunities to enhance efficiency, accessibility, and pedagogical innovation, while simultaneously introducing complex ethical challenges, such as privacy violations, algorithmic bias, and access disparities. In this context, the integration of digital ethics becomes crucial as a normative framework that ensures the utilization of technology aligns with educational values, including justice, transparency, and character formation. The application of digital ethics principles in educational management not only safeguards data security and integrity but also affirms the institution's role as a guardian of humanistic values, allowing digital innovation to serve as a means of student empowerment and the sustainable improvement of educational quality.

Digital technology has created a substantial leap in human civilization. Innovations that were once merely auxiliary tools have now permeated all aspects of life, including educational management. The presence of digital technology has significantly altered educational management, spanning planning, organizing, implementation, and supervision (Lestyaningrum et al., 2022). Education, previously conducted conventionally, is now required to adapt to digital systems to remain competitive in a global context (Nugraha et al., 2025). However, behind the significant opportunities offered by technology lie serious challenges, particularly concerning the ethical use of technology within educational environments. In line with this transformation, the adoption of LMS based applications and digital instructional platforms (e.g., Nearpod) has changed the way teachers plan lessons, conduct interactive implementation, and perform evaluation while providing real time data for institutional monitoring. (Paais et al., 2025)

Digitalization in educational management offers numerous advantages. School management information systems, online learning platforms, big data for academic analysis, and the use of artificial intelligence for personalized learning are among the innovations that have transformed the face of education. These advancements provide efficiency, speed, and connectivity previously unimaginable (Arif et al., 2024). However, each technological advancement carries consequences. Utilizing technology without clear ethical guidance may lead to serious issues, including privacy violations, data misuse, misinformation, and information exploitation (Xanderina et al., 2024). The use of electronics today offers many benefits, including personalized learning, improved outcomes, increased motivation, and learning flexibility. (Garzon et al., 2025)

Digital ethics can be understood as a set of moral principles governing the use of technology in ways that respect human values. In the context of educational

management, digital ethics demands transparency, accountability, information security, and fairness in all technology based decision making processes (Purba et al., 2023). Nevertheless, the reality in the field indicates that many educational institutions lack adequate policies to regulate ethical technology use. For instance, student data management applications often operate without privacy protection guarantees, or algorithms used for academic selection are applied without fair oversight mechanisms (Sarwiti et al., 2025). The use of artificial intelligence in higher education raises significant ethical concerns, including data privacy, transparency, and algorithmic bias, which must be carefully managed to ensure fairness and accountability in educational decision making. (Chinoracky & Stalmasekova, 2025)

Beyond technical issues, digitalization also raises philosophical questions: how can a balance between technology and spirituality be maintained. Education is not solely oriented toward knowledge transfer but also toward character development, morality, and noble values. If educational management focuses excessively on technology driven efficiency, humanistic and spiritual aspects may be marginalized. The presence of technology carries the risk of dehumanization, reducing human roles to mere data points and algorithms (Moh In'ami & Zubaidi, n.d.). Education, however, should humanize individuals rather than transform them into statistical figures.

In this context, educational management must play a strategic role in integrating technology with humanistic and spiritual values. This integration is essential to ensure that digital transformation does not compromise education's identity as a process for forming well rounded individuals. Spirituality here is not solely interpreted in a religious sense but also encompasses universal values such as honesty, justice, empathy, and responsibility (Suhendi, 2023). Education that neglects the spiritual dimension risks losing direction, as it becomes oriented only toward material outcomes without considering character development.

The Industry 4.0 and Society 5.0 eras further underscore this urgency. The Society 5.0 concept emphasizes the utilization of technology to create human-centered lives. However, without ethics, technological use may lead to social inequality, information manipulation, and algorithmic bias that harms certain groups (Judijanto et al., 2024). Therefore, educational management must develop policies and procedures emphasizing digital ethics values, such as data protection, fairness in decision making, and the use of technology for positive purposes. The current era thus demands the systematic integration of digital ethics principles in education, as human centered technology still poses risks of social inequality, information manipulation, and algorithmic bias if not ethically governed. Within educational management, this emphasizes the need for policies and procedures that enforce data protection, fairness in decision making, and the utilization of

technology for positive ends, ensuring that digital innovation not only enhances efficiency and accessibility but also preserves humanistic values and institutional moral integrity.

The issue of digital ethics becomes increasingly complex with the emergence of artificial intelligence (AI) in education. AI is employed for predictive analytics, recommendation systems, and adaptive curriculum management. However, without clear regulation, AI can generate data based discrimination, algorithmic bias, and privacy violations (Rochmawati et al., 2023). For example, systems designed to recommend learning programs may lock students into specific categories without considering their developmental potential. This illustrates that technology is not a neutral entity it carries embedded values in its design and implementation. Therefore, educational management must ensure that technology is used ethically and responsibly (Razilu, 2025).

The application of AI in education expands the spectrum of digital ethics challenges, as AI is not neutral and may reproduce biases and cause structural discrimination if not ethically regulated. For instance, recommendation systems that limit student potential highlight that technology design and implementation inherently carry values, necessitating that educational management establish regulations, policies, and AI usage practices that are fair, transparent, and protective of student privacy, so that technology functions as an empowerment tool rather than a mechanism of exclusion or control.

Beyond technical and philosophical concerns, digitalization also impacts social relationships in educational environments. Reliance on virtual communication may reduce face to face interactions, which are essential for fostering empathy and social values. If unchecked, this may result in a generation that is technologically proficient but lacking interpersonal skills. Spirituality, which lies at the core of humanistic education, can be eroded by instant gratification and digital pragmatism (Suhendi, 2023). Therefore, educational management strategies must balance technological use with the reinforcement of spiritual and ethical values.

The discussion of digital ethics in educational management, situated between technology and spirituality, becomes highly relevant amid the acceleration of digital transformation that demands educational institutions remain adaptive without sacrificing humanistic values. The digital era presents complex challenges, ranging from data misuse and algorithmic bias to potential dehumanization in the learning process, which, if not ethically managed, can reduce education to a mere mechanism. Therefore, this study aims to develop a conceptual framework and educational management policies based on digital ethics, which not only preserve students' moral and spiritual integrity but also maximize technology's potential as a means of empowerment. Through this approach, technology is no longer seen as

a threat to the noble values of education but as a strategic instrument that strengthens character, creativity, and social responsibility within the modern educational ecosystem.

Based on this review, the success of digital transformation in educational management highly depends on the strategic integration of technology, institutional policies, human resource capacity, and humanistic values. Digitalization is not merely the application of technology but a systematic effort to build an adaptive, inclusive educational ecosystem oriented toward the sustainable improvement of learning outcomes. These findings provide an important foundation for further research in designing a conceptual framework and digital ethics–based policies that not only enhance learning effectiveness but also ensure that education remains humanistic and dignified in the digital era.

Research Method

This study employs a qualitative approach using a library research method aimed at exploring and analyzing the concept of digital ethics within the context of educational management. This approach was selected because digital ethics concerns not only the technical aspects of technology use but also normative, philosophical, and spiritual dimensions. Through a literature review, the study seeks to examine the thoughts of classical and contemporary scholars, as well as recent academic literature on digital ethics, Islamic education, and the integration of spiritual values in educational governance (Sari et al., 2025; Zed, 2008)

Data collection was conducted by tracing relevant primary and secondary sources, including academic books, reputable international journal articles, conference proceedings, and research reports related to digital ethics in education. These sources were purposively selected based on their relevance, credibility, and contribution to understanding the concept of digital ethics in educational management (Alaslan, 2022).

Data analysis in this study utilized content analysis with a thematic approach. Each piece of literature was thoroughly reviewed, coded, and categorized into major themes, such as the fundamental concepts of digital ethics, the role of technology in Islamic education, the integration of spiritual values in educational management, and the challenges and opportunities of digital ethics in the era of artificial intelligence (Achjar et al., 2023). Through this thematic approach, the researcher aims to identify relationships between concepts and uncover connections between Islamic scholarly traditions and contemporary digital technological developments.

Data validity was maintained through source triangulation by comparing and verifying classical, contemporary, and modern literature to minimize interpretive bias. For instance, classical scholars' views on adab (etiquette) and akhlaq

(morality) in seeking knowledge were compared with modern digital ethics principles, resulting in a comprehensive and holistic understanding (Hasad, 2011). The credibility of the study was further supported by methodological transparency, whereby every step of literature search, selection, and analysis was clearly documented to allow replication by other researchers.

The qualitative library research method is relevant because digital ethics cannot be measured solely quantitatively; it requires an interpretive approach to understand the meanings embedded in texts, norms, and educational values. In line with (Cresswell, 2013), a qualitative approach allows researchers to delve into the depth of phenomena by interpreting perspectives arising from social, cultural, and educational contexts. The results of this method are expected to contribute theoretically by providing a new conceptual framework for digital ethics in Islamic educational management, as well as practically by offering normative guidance for educational institution administrators in facing the challenges of the digital era. Therefore, this methodological choice aligns not only with the research objectives but also with the academic tradition in Islamic educational management, which consistently places moral and spiritual aspects as fundamental pillars.

Results and Discussion

Foundations of Digital Ethics in Educational Management

This discussion systematically emphasizes the fundamental role of digital ethics as a normative foundation in contemporary educational management, highlighting that digital transformation not only brings administrative efficiency and transparency but also raises significant ethical complexities. The focus on issues such as privacy, data security, plagiarism, and algorithmic bias reflects a critical awareness of the moral consequences inherent in the use of digital technologies. Digital ethics is appropriately positioned as a normative framework that underscores the need to harmonize technological innovation with moral principles, where every policy and educational practice must consider ethical implications for students, educators, and the wider community. Consequently, this discussion not only addresses the technical dimensions of digital educational management but also emphasizes institutional moral responsibility as a prerequisite for sustainability and justice within the modern educational ecosystem.

The major shifts in the education sector during the digital era have introduced new challenges that are not only technical but also ethical. The use of technology in educational management facilitates improvements in efficiency, transparency, and accessibility (Lestyaningrum et al., 2022); (Nugraha et al., 2025). Online learning platforms, school management information systems, and big data for academic analysis have reshaped educational governance. However,

these advancements are not without ethical consequences: issues of privacy, data security, plagiarism, and algorithmic bias can potentially harm both students and institutions (Han et al., 2025). This underscores the importance of digital ethics as a normative foundation guiding technology use in educational settings.

The concept of digital ethics refers to a set of moral values, principles, and guidelines that govern the use of digital technology to protect fundamental human rights while fostering a fair and responsible educational environment (Sulianta, 2024). In educational management, this implies that every policy, decision, and practice involving technology must account for its ethical implications for students, educators, and society at large. Conceptually, digital ethics is affirmed as a normative mechanism regulating moral behavior within the digital education ecosystem, emphasizing that technology cannot be ethically neutral. By referencing human rights and principles of justice, the implementation of digital ethics must be holistic and integrative, encompassing all layers of educational management from policy formulation to operational practices. This reflects academic awareness that technology, while instrumental, carries social and moral implications, necessitating that decision makers balance digital efficiency with ethical responsibility toward all stakeholders. Epistemologically, digital ethics is positioned not merely as a procedural guideline but as a philosophical and normative foundation essential for the sustainability and legitimacy of technology based educational management.

This discussion emphasizes that digital ethics is not merely a technical or procedural guideline in digital educational management, but a normative foundation that binds all educational practices to moral and justice principles. The discussion highlights that digital transformation brings administrative benefits such as efficiency, transparency, and accessibility, yet also introduces significant ethical risks, including privacy violations, data security issues, plagiarism, and algorithmic bias. Therefore, every policy, decision, or practice that utilizes technology must consider its ethical impact on students, educators, and the broader community. This approach requires educational institutions not only to focus on optimizing technology but also to uphold moral responsibility that ensures sustainability and fairness within the modern educational ecosystem.

Moreover, it demonstrates that the implementation of digital ethics must be holistic and integrative, encompassing all levels of educational management, from policy formulation to operational practices. Digital ethics teaches that technology is not morally neutral; every innovation carries social values and ethical implications that must be carefully considered by decision makers. By integrating human rights and justice principles, digital ethics becomes a crucial philosophical and normative foundation for the legitimacy and sustainability of technology based educational management. This approach emphasizes that digital advancement is

meaningful only when aligned with humanistic values, creating an education system that is both efficient and ethically responsible.

Ethical Challenges in Educational Digitalization

The use of digital technology in schools and universities is often accompanied by complex ethical challenges. For instance, online learning platforms enable the collection of large volumes of student data, from learning habits to assessment results. If not managed carefully, this data can lead to privacy violations or be misused for commercial purposes (Susanti, 2024). Additionally, algorithm based selection systems may reinforce biases, for example, by categorizing students based on historical data without considering their developmental potential (Fikri et al., 2025).

Critically, this highlights the inherent ethical consequences of educational digitalization, emphasizing that technological innovation is not free from risks of violating individual rights and reproducing structural injustices. The focus on big data collection and selection algorithms illustrates the phenomenon of data ethics, where student information can become a tool of discrimination if not governed by principles of transparency, accountability, and fairness. Academically, this demonstrates that educational technologies, though designed for efficiency and personalization, may reinforce social biases and overlook individual potential, requiring ethical vigilance and proactive regulation as part of responsible educational management.

Moreover, reliance on technology introduces the risk of dehumanization. Educational processes overly focused on numbers, statistics, and efficiency may neglect humanistic dimensions such as empathy, face to face communication, and character development (Nipan et al., 2025). This may produce a generation that is technologically adept but deficient in interpersonal skills and social ethics. Various ethical theories provide a foundation for digital practices in education. Deontological ethics emphasize moral duties to uphold individual rights, such as privacy and data security. Utilitarian ethics stress maximizing benefits for the greatest number, implying that the use of digital technology in education must enhance access and equity (Jeli et al., 2025). Virtue ethics, on the other hand, underscores the importance of character formation and good habits in digital interactions, such as honesty, responsibility, and transparency.

This emphasizes the paradoxical risk of dehumanization arising from educational digitalization, where a focus on efficiency and performance metrics sidelines essential humanistic aspects. Concentration on statistics and numeric outputs fosters the phenomenon of technocratization of education, potentially producing students who are technically competent but underdeveloped emotionally and morally. Academically, this reinforces the need for an integrative pedagogical approach, where technology serves as a supportive tool rather than a

substitute for social interaction, empathy, and character formation. This also implies that digital ethics must incorporate a humanistic dimension, highlighting that educational success is measured not only by productivity or academic scores but also by the quality of interpersonal relationships and ethical awareness among students.

An integrative approach in education is thus necessary. Digital ethics cannot focus solely on technical data security but must also consider social justice, psychological impacts on students, and sustainable technology use (Mas'odi et al., 2025). In other words, digital ethics should be understood as a comprehensive framework linking technology, humans, and educational values. A critical dimension of digital ethics is its alignment with humanistic values. Education is fundamentally a process of humanization, not merely knowledge transfer or academic competency achievement (Khaeroni, 2022). Accordingly, the use of technology in educational management should always support human values such as justice, freedom of thought, and social empathy. For instance, academic information systems should serve not only as control tools but also as means to foster healthy communication among students, teachers, and parents. Similarly, online learning should not focus solely on efficiency but also create spaces for dialogue and social interaction (Khaeroni, 2022); (Purba et al., 2023). Neglecting this humanistic dimension reduces digital education to a mechanism for producing standardized graduates lacking character.

Digital ethics should be recognized as a comprehensive framework integrating technology, humans, and educational values, rather than merely technical guidelines for data security. Emphasizing social justice, psychological impact, and sustainability indicates that digital ethics must be holistic and humanistic, taking into account moral and social implications of every technology based educational practice. Highlighting humanistic values such as justice, freedom of thought, and empathy reinforces that digital education is a process of humanizing individuals, not only transferring knowledge or achieving academic competencies. Concrete examples, such as academic information systems and online learning, illustrate that these tools should foster meaningful communication, dialogue, and social interaction. Academically, this demonstrates that the success of digital education is measured not only by efficiency or numerical outputs but also by technology's capacity to enhance interpersonal relationships, character development, and students' moral integrity. Neglecting humanistic dimensions risks reducing digital education to standardized graduate production, underscoring the urgency of digital ethics as a normative and humanistic foundation in modern educational management.

Digitalization in education brings convenience and efficiency, but it also raises serious ethical risks, such as privacy violations, algorithmic bias, and

potential discrimination. Technology is not a neutral entity; every innovation carries moral consequences that must be considered. Therefore, digital ethics serves as a normative foundation requiring transparency, accountability, and fairness to ensure that digital transformation does not compromise the integrity of students and educational institutions.

Focusing solely on efficiency and data can lead to dehumanization, where students may be technically competent but lack social skills and character development. Digital ethics must be holistic, integrating moral principles, social justice, and character formation, so that technology functions as a tool supporting meaningful interaction, communication, and learning. With this approach, educational digitalization not only enhances effectiveness but also ensures that education remains humane, equitable, and sustainable.

The Role of Educational Management in Upholding Digital Ethics

Educational management plays a strategic role in ensuring that digital transformation aligns with ethical principles. At the policy level, educational institutions need to develop internal regulations on data protection, algorithmic transparency, and equitable technology use (Han et al., 2025). Teachers and educational staff must be equipped with digital literacy that combines technical competence with ethical understanding, so that technology implementation in learning not only improves efficiency and educational quality but also safeguards moral integrity and fairness for all students (Ma, 2025). At the operational level, teachers and staff must receive training in digital literacy to integrate ethics into daily technology use.

Educational management acts as a key actor bridging technological innovation with ethical compliance, ensuring that digital transformation is grounded not only in administrative efficiency but also in strong moral principles. Emphasis on internal rules regarding data protection, algorithmic transparency, and equitable technology use reflects awareness of the ethical complexities inherent in educational digitalization, including potential algorithmic bias, privacy violations, and unequal access. Moreover, focus on digital literacy for teachers and staff highlights the importance of internalizing ethical values in daily practice, ensuring that digital ethics is reflected not only in formal guidelines but also in operational conduct. Academically, this underscores that the success of educational digitalization relies heavily on the synergy between institutional policy and professional competence, collectively ensuring that technological innovation aligns with moral responsibility and principles of justice.

Additionally, educational organizational culture must reflect a commitment to digital ethics. This can be realized through role modeling, transparency in data management, anti plagiarism policies, and technology use oriented toward student character development (Yusuf et al., 2024). Through this approach, educational

management not only adopts technology but also instills ethical values, making it a tool for holistic educational quality enhancement. Moreover emphasizing that policies, transparency, and professional development are crucial to ensure ethical and value driven integration of technology. (Karakose et al., n.d.)

Digital transformation in education brings radical changes that are not only technical but also ethical. Digital technologies provide unlimited access to information, foster pedagogical innovation, and accelerate educational management. However, behind these opportunities lie complex ethical issues, including data privacy, access equity, and psychosocial impact. If poorly managed, technological developments can undermine the fundamental values of education, which should foster intellectual freedom, equality, and moral responsibility (Nipan et al., 2025)

Systematically, this highlights educational management as a strategic guardian of ethical integrity in the era of digital transformation, bridging technological innovation with moral and pedagogical values. At the policy level, emphasis on data protection, algorithmic transparency, and equitable technology use confirms that digital ethics must serve as a normative foundation guiding all operational aspects of educational institutions. Implementation of digital literacy for teachers and staff demonstrates the recognition that ethics cannot be separated from everyday practice but must be internalized as part of professional competence. Furthermore, organizational culture is highlighted as a medium to reinforce digital ethics, where role modeling, anti plagiarism policies, transparency, and character oriented approaches indicate successful adoption of ethical technology. This analysis shows that educational digitalization is not merely about efficiency or accessibility but is a moral and pedagogical process demanding accountability, responsibility, and collective ethical awareness.

Ethical Challenges in the Educational Digital Era

Ethical challenges in the educational digital era emphasize that technological transformation is never morally neutral and always carries complex, multidimensional ethical consequences. Issues of privacy and data security indicate that the collection and management of student and educator information require strict normative oversight; institutional weaknesses or regulatory gaps may lead to data breaches, commercial exploitation, and erosion of public trust. Meanwhile, the digital divide highlights that technology, although potentially expanding access, can reinforce structural inequities, creating a new class between students with full access and those marginalized. Academically, this demands a holistic ethical approach, where digital ethics addresses not only individual protection but also distributive justice, inclusivity, and institutional social responsibility. In other words, the success of digital education is measured not merely by technology adoption but by an institution's ability to manage ethical

risks, uphold moral integrity, and ensure justice and equity in a digitized educational ecosystem.

To implement digital ethics in education, several major challenges arise: first, Data Privacy and Security. Student and educator privacy is a primary concern in the digital era. Learning Management Systems (LMS) and online conferencing applications often store personal data, grades, and interaction histories. Weak regulations and institutional capacity frequently create opportunities for data breaches. According to Regan and Jesse (2019), 60% of educational institutions in the United States have experienced data breaches. The consequences include loss of public trust and potential commercial exploitation (*Education Data Breaches Hit Record High in 2021 K-12 Dive*, 2023) ; (Magazine., n.d.)

Second, Digital Divide. Although technology is expected to expand educational access, not all students have equal opportunities. UNESCO (2021) reported that nearly 40% of students in developing countries could not participate in online learning during the pandemic due to device or connectivity limitations (M. U., 2020). This inequality produces a new class of students, divided between connected and disconnected. Third, Algorithmic Bias in Educational AI. Algorithms used to detect plagiarism, recommend learning materials, or provide automated grading are not always neutral. As noted by O'Neil (2016), algorithms often carry biases from their training data. In education, this bias can result in unfair treatment for students from certain groups, such as minority backgrounds (Verma, 2019). Finally, Psychosocial Health and Digital Dependency. Another often overlooked issue is students' mental health due to intensive digital device use. Social pressures on digital media, cyberbullying, and screen addiction pose real threats. The WHO (2020) issued specific guidelines regarding screen time limits for children and adolescents (Pd.I, 2020). Without proper balance in technology use, the potential for social and psychological dysfunction increases.

The complexity of ethical challenges in education demonstrates that digital transformation not only offers opportunities but also significant moral risks. Emphasis on privacy and data security underscores that managing information about students and educators is a fundamental ethical issue, where institutional weaknesses can lead to data breaches and commercial exploitation, undermining public trust and institutional integrity. Meanwhile, attention to the digital divide highlights that educational technology does not automatically produce equity; rather, it may reinforce structural injustice, creating social differentiation between students with full access and those marginalized. Academically, this confirms that digital ethics in education must combine individual rights protection with distributive justice, requiring proactive policy and pedagogical strategies to address inherent ethical and social risks. Therefore, the success of digital

education is measured not only by technology adoption but also by the institution's capacity to uphold moral principles, inclusivity, and social responsibility.

Thus, it can be concluded that the success of educational digitalization heavily depends on the integration of ethics into daily practices, ranging from institutional policies to the professional competencies of teachers and staff. Digital ethics is not merely a normative guideline but a strategic instrument to ensure that technology supports learning that is humanistic, fair, and inclusive. Practices such as algorithm audits, data protection, morally grounded digital literacy, and AI usage regulations are key to enabling technology to empower students rather than limit their potential. With this approach, digital education is measured not only by effectiveness or academic scores but also by the extent to which technology strengthens interpersonal relationships, moral integrity, and justice for all stakeholders.

Strategies for Implementing Digital Ethics in Education

To address the various digital ethics challenges that have been outlined, strategic measures are needed that can be implemented by educational institutions, teachers, technology developers, and other stakeholders. These strategies are designed to ensure that the digital transformation in education aligns with ethical principles, justice, and humanistic values. Some important approaches that can be taken include:

First, progressive institutional policies. Educational institutions must establish standards for data protection, transparency in technology use, and risk mitigation protocols. Policies should adhere to the principles of privacy by design and child rights by design (Rafid & Nurita, 2025). For instance, institutions should clearly communicate what data is collected, how it is used, and how students can control it.

Second, ethical digital literacy for teachers and students. Digital literacy should not be limited to technical skills but must include ethical dimensions, such as awareness of data sharing consequences, sensitivity to digital footprints, and critical evaluation of algorithms (Rafid & Nurita, 2025). Digital citizenship curricula emphasizing rights, responsibilities, and ethical behavior in digital spaces are urgently needed.

Third, responsible innovation. Educational technology developers must integrate ethical values into system design. Razilu proposes the AI People framework emphasizing five principles: beneficence, non-maleficence, autonomy, justice, and explicability. These principles should be operationalized, for example, through the development of open source platforms that are more transparent and easily auditable (Razilu, 2025).

Fourth, multisector collaboration. Digital ethics issues cannot be addressed solely by educational institutions. Governments, technology developers, civil

society, and international organizations must collaborate. The OECD (2020) highlights the importance of global governance in protecting students' rights in digital spaces, particularly in cross-border education contexts.

Table 1. Dimensions of digital ethics in education

Dimension	Challenges	Strategies	Practical Examples	Dimension
Privacy & Security	Student data breaches, excessive surveillance	Data protection standards, information encryption	GDPR implementation in Europe	Privacy & Security
Access Equity	Digital divide between wealthy and low-income students	Inclusive infrastructure, device subsidies	Laptop assistance programs in Canada and Singapore	Access Equity
Algorithmic Bias	Discrimination in AI-based assessment	Algorithmic audits, system transparency	Stanford HAI & AI4People framework	Algorithmic Bias
Ethical Literacy	Low awareness among students and teachers regarding digital ethics	Ethical digital literacy curriculum	Digital Citizenship programs in OECD schools	Ethical Literacy
Psychosocial Health	Screen addiction, social pressure on digital media	Screen time guidelines, balance between technology and physical interaction	WHO guidelines on children's digital health	Psychosocial Health
Technological Innovation		Dependence on major tech corporations (big tech)	Open-source solutions, cross-sector collaboration	Development of open-source LMS such as Moodle

The table emphasizes that digital ethics in education encompasses several key dimensions, including privacy and security, access equity, algorithmic bias, ethical literacy, psychosocial health, and technological innovation. Each dimension presents specific challenges, ranging from data breaches and digital divides to algorithmic discrimination and technology addiction, which require appropriate mitigation strategies, such as data protection, algorithmic audits, digital literacy, health guidelines, and open source utilization. Overall, the integration of these strategies underscores that the implementation of digital ethics must be holistic, inclusive, and focused on safeguarding rights, promoting justice, ensuring transparency, supporting well being, and sustaining innovation, thereby aligning digital transformation in education with ethical principles and humanistic pedagogy.

The implementation of digital ethics in education requires a strategic and multidimensional approach, where no challenge can be addressed in isolation. Technological dependencies are interconnected, and failure in one dimension can

compromise the effectiveness of the entire system. The mitigation strategies outlined highlight the need for proactive policies, strong institutional capacity, and the engagement of all stakeholders, including teachers, students, and technology developers. Furthermore, the table emphasizes that digital ethics is not merely a technical mechanism or a matter of regulatory compliance, but a normative framework that integrates justice, inclusivity, transparency, and learner well being, ensuring that digital transformation supports education that is humanistic, sustainable, and integrity driven.

Thus, the implementation of digital ethics in education is far more complex than merely administrative procedures or technical guidelines. The approaches discussed ranging from progressive institutional policies, ethical digital literacy, responsible innovation, to multisector collaboration demonstrate that digital ethics must be integrated comprehensively across all levels of educational management. Each dimension outlined in the table, such as privacy, access equity, algorithmic bias, ethical literacy, psychosocial health, and technological innovation, is not an isolated issue; failure in one aspect can undermine the effectiveness of the entire digital system.

Between Technology and Educational Values

A fundamental issue that emerges is how to balance technological innovation with the core values of education. Education is not merely a space to enhance learning efficiency but also a realm for shaping morality, identity, and meaningful living (Saputra et al., 2023). Therefore, digital ethics serves as a framework that ensures technology does not reduce education to mere mechanical activity. The primary aim of digital ethics is to create a better future through technology, not merely to avoid risks (Sugiarto & Farid, 2023). The study reveals a general lack of awareness and inconsistent application of ethical principles among educators, highlighting the need for collaborative policy making and professional development on AI ethics to ensure technology aligns with educational values and fairness. (Kamal et al., n.d.)

Digital ethics acts as a bridge between technological innovation and the fundamental values of education, ensuring that digital transformation does not render education a purely mechanistic activity. Education is positioned not only as a means for knowledge transfer or efficiency improvement but also as a space for moral, identity, and meaning formation. Consequently, the use of technology must align with these humanistic objectives. In this context, digital ethics is not merely a risk mitigation tool but a strategic normative framework that enables technology to be integrated ethically and transformatively, fostering a more humane, inclusive, and sustainable future for education. This underscores that ethical orientation should be considered a foundation, not a barrier, in the development of digital educational practices. Balancing technology with pedagogical goals is essential,

ensuring that digital innovation does not overshadow the moral and social dimensions of learners. Digital ethics serves as a critical instrument for internalizing humanistic values in technology implementation, ensuring that each innovation supports character development, social responsibility, and meaningful learning, keeping humans at the center of the educational process rather than mere technical efficiency or outputs.

Moreover, the threat of surveillance capitalism where student data is commodified poses serious risks. If education succumbs to the logic of digital capitalism, intellectual freedom and independent thinking are at stake. Therefore, the implementation of digital ethics must function as a protective fence that limits the dominance of large corporations within educational spaces (Sudibyo, 2019). Surveillance capitalism presents significant threats to educational integrity, as student data treated as economic commodities undermines intellectual freedom and autonomy. Here, digital ethics is positioned as a normative protective mechanism, safeguarding educational institutions' sovereignty and humanistic values, ensuring that education remains focused on knowledge, character, and independent thinking rather than profit or technological efficiency.

In practice, digital ethics is a fundamental necessity in the era of digital transformation. Challenges encompass data privacy, access disparities, algorithmic bias, ethical literacy, psychosocial health, and the dominance of major technology corporations. Implementation strategies include progressive institutional policies, ethical literacy curricula, responsible technological innovation, and multi sector collaboration. When all these aspects are effectively implemented, digital education not only accelerates knowledge transfer but also serves as a vehicle for shaping a generation that is critical, just, healthy, and morally responsible. In other words, digital ethics bridges technological advancement and the higher purpose of education as a humanizing process.

The statement above indicates that the core issue is not merely the implementation of technology, but how technology is applied in alignment with the fundamental values of education. Digital ethics functions as a normative bridge between technological innovation and the humanistic goals of education, ensuring that digital transformation does not reduce education to mere mechanistic activity. The focus of education is not only on efficiency or knowledge transfer but also on the development of morality, identity, and the meaningful life of learners. Thus, digital ethics is not merely a risk mitigation tool but a strategic framework for integrating technology ethically, inclusively, and transformatively.

Conclusion

The advancement of digital technology has revolutionized education; however, the convenience and efficiency it offers also present significant ethical

challenges, including data security, plagiarism, and access disparities. Digital ethics functions as a moral compass, emphasizing that technology must be utilized responsibly, placing human values, honesty, empathy, and accountability at its core. Effective implementation of digital ethics requires transparent policies, digital literacy curricula, teacher training, and collaboration among all stakeholders to ensure inclusivity, fairness, and the well being of learners.

Thus, adaptive and reflective educational management can balance technological innovation with moral commitment, making digital education both technologically proficient and ethically wise. Moreover, digital ethics is not merely a technical instrument but a strategic foundation that ensures technological innovation does not reduce education to a mechanical process. Meaningful digital education is achieved only when technology is integrated with humanistic values, inclusive policies, and stakeholder collaboration, ensuring that the primary goal of education holistic human development is realized within an ethical, just, and sustainable ecosystem.

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