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Ethical and Privacy Analysis in the Use of Generative AI in the World of Education

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ABSTRACT
This research aims to critically analyze the ethical and privacy aspects in the use of generative AI in the world of education. The research method used is a qualitative approach with literature studies, analyzing various academic literature, educational policies, and regulations related to data protection and technological ethics. The results show that while generative AI provides great benefits such as personalized learning, automated content creation, and increased efficiency, it also poses risks in the form of academic cheating, privacy violations, and decreased critical thinking skills. In the context of Islamic Religious Education, AI must be utilized responsibly by integrating Islamic ethical values such as honesty, fairness, and respect for privacy. This study concludes that the ethical implementation of generative AI requires a strong regulatory framework, teacher competency enhancement, and awareness of the importance of privacy protection in order for AI integration to make a positive contribution to education.

Keyword: Generative AI, Education, Ethics, Privacy, Islamic Values

INTRODUCTION

The use of generative AI in the world of education is growing much faster than the ethical, regulatory, and privacy-conscious readiness of its users.[1] In various educational units, generative AI has been used by students to compile assignments, answer questions, and even produce scientific papers, while educators use it to design teaching materials and learning evaluations.[2] However, this practice often takes place without an adequate understanding of the ethical consequences and risks of privacy violations that come with it. Students' personal data, including identity, learning patterns, and academic preferences, is often uploaded to AI platforms without clarity on the mechanisms for protection, storage, and use by third parties.[3] Furthermore, the absence of clear ethical guidelines causes moral ambiguity in the educational process. Generative AI not only has the potential to blur the line between learning aids and academic cheating, but it also reinforces access inequalities, algorithmic bias, as well as exploitative practices against user data.[4] In many educational institutions, AI policies are still reactive, fragmentary, or even

[1] Ning Wang dkk., "University Students' Privacy Concerns Towards Generative Artificial Intelligence," *Journal of Academic Ethics* 23, no. 4 (2025): 2401–22, https://doi.org/10.1007/s10805-025-09658-4.

[2] Grant Cooper, "Examining Science Education in ChatGPT: An Exploratory Study of Generative Artificial Intelligence," *Journal of Science Education and Technology* 32, no. 3 (2023): 444–52, https://doi.org/10.1007/s10956-023-10039-y.

[3] Lan Huang, "Ethics of artificial intelligence in education: Student privacy and data protection," *Science Insights Education Frontiers* 16, no. 2 (2023): 2577–87, https://www.bonoi.org/index.php/sief/article/view/1084.

[4] Laurens Naudts, "The Digital Faces of Oppression and Domination: A Relational and Egalitarian Perspective on the Data-Driven Society and Its Regulation," *The 2024 ACM Conference on Fairness Accountability and Transparency*, ACM, 3 Juni 2024, 701–12, https://doi.org/10.1145/3630106.3658934.

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non-existent, leaving educators and learners to interpret ethical and unethical boundaries for themselves. This condition shows that there is a real gap between the advancement of educational technology and the ethical responsibilities that should accompany it.

Early studies on the use of artificial intelligence in education generally place technology as a neutral and progressive pedagogical instrument. Studies conducted by Luckin et al.[5], Holmes[6], and Zawacki-Richter[7], for example, emphasize the potential of AI in improving learning personalization, assessment efficiency, and adaptive learning support. However, this approach tends to be technocentric, with a primary focus on learning effectiveness and innovation, while the ethical and privacy dimensions are positioned only as secondary or normative complements. AI is treated as if it is value-free, when it operates through the collection, processing, and commodification of learner data on a massive scale. As generative AI develops, research has begun to shift to academic ethics issues, particularly related to plagiarism, academic honesty, and the authenticity of scientific papers. Studies by Cotton[8], as well as cutting-edge research following the advent of ChatGPT show growing concerns over the erosion of academic integrity and the blurring of the line between technological aid and cheating. However, these studies are still normative-repressive, emphasizing the control and detection of AI abuse rather than structural analysis of the power relationship between AI platforms, educational institutions, and educational subjects as data owners.

On the other hand, research on digital privacy in education, such as those put forward by Williamson[9], Selwyn[10], and Prinsloo[11], has criticized the practice of datafication in modern education. They show that learners are increasingly reduced to data objects, while algorithmic transparency and user control over personal data are very limited. However, most of the research still focuses on learning analytics and learning management systems, not specifically examining the unique characteristics of generative AI that are predictive, creative, and cross-contextual. In the Indonesian context, research related to AI in education is generally still oriented towards technological readiness, digital literacy, and learning innovation opportunities. Ethical and privacy issues are often only mentioned implicitly without an in-depth analysis of their social, legal, and moral implications. The lack of studies that integrate ethical perspectives, data protection policies, and educational values shows that there is a significant academic vacuum, especially in responding to the increasingly massive but normatively unmanaged use of generative AI.

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[5] Rose Luckin dan Wayne Holmes, *Intelligence unleashed: An argument for AI in education*, UCL Knowledge Lab, 2016, https://discovery.ucl.ac.uk/id/eprint/1475756/.

[6] John H. Holmes dkk., ed., *Artificial Intelligence in Medicine: 15th Conference on Artificial Intelligence in Medicine, AIME 2015, Pavia, Italy, June 17-20, 2015. Proceedings*, vol. 9105, Lecture Notes in Computer Science (Springer International Publishing, 2015), https://doi.org/10.1007/978-3-319-19551-3.

[7] Olaf Zawacki-Richter dkk., "Systematic Review of Research on Artificial Intelligence Applications in Higher Education – Where Are the Educators?," *International Journal of Educational Technology in Higher Education* 16, no. 1 (2019): 39, https://doi.org/10.1186/s41239-019-0171-0.

[8] Stuart Gordon dan You-lo Hsieh, *Cotton: Science and technology* (Woodhead Publishing, 2006), https://books.google.com/books?hl=id&lr=&id=VsBQAwAAQBAJ&oi=fnd&pg=PP1&dq=Cotton&ots=T3ckI6j9bn&sig=KjzRAKRDyDFF7btnw-AoV9JFqdE.

[9] Alvin Goldman, "Williamson on knowledge and evidence," *Williamson on knowledge*, Oxford University Press Oxford, 2009, 73–91, http://fas-philosophy.rutgers.edu/Goldman/Williamson%20on%20Knowledge%20and%20Evidence.pdf.

[10] Neil Selwyn, *Education and technology: Key issues and debates* (Bloomsbury Publishing, 2021), https://books.google.com/books?hl=en&lr=&id=dMZKEAAAQBAJ&oi=fnd&pg=PR1&dq=info:Dt7sH6x2hckJ:scholar.google.com&ots=wnTRON6IAw&sig=UM7P_S9aJZOZ6iNb3DRvrXTh_Gg.

[11] Sharon Slade dan Paul Prinsloo, "Learning Analytics: Ethical Issues and Dilemmas," *American Behavioral Scientist* 57, no. 10 (2013): 1510–29, https://doi.org/10.1177/0002764213479366.

The novelty of this research lies in the paradigm shift in analysis from a partial technological and normative approach towards an integrative and contextual ethical–privacy framework in the use of generative AI in the world of education. In contrast to previous research that has generally focused on learning effectiveness, plagiarism issues, or regulatory compliance separately, this study places ethics and privacy as the primary foundations of AI-based educational practices, rather than just additional consequences of technological innovation. Specifically, the novelty of this research appears in three main aspects. First, this study examines generative AI not only as a pedagogical tool, but as a socio-technological actor that forms new power relations between educators, learners, educational institutions, and AI platform providers. This approach allows for a more critical analysis of the processes of datafication, data exploitation, and inequality of control over personal information in the digital education ecosystem. This research also presents an integration between educational ethics and digital privacy issues in one complete analytical framework. So far, the two issues have often been treated separately and ethics are discussed in the context of academic honesty, while privacy is limited to the legal aspects of data protection. Instead, this research shows that ethical violations and privacy risks are intertwined and have a direct impact on the degradation of fundamental educational values, such as learning autonomy, human dignity, and epistemic justice.

METHOD

This research uses a qualitative approach with a critical-interpretive research design, which aims to deeply understand the ethical and privacy dimensions in the use of generative AI in the world of education.[12] This approach was chosen because the problems studied are not solely technical or empirical in quantity, but also concern values, power relations, and the construction of meaning in digital education practice. The type of research used is library research enriched with conceptual and policy analysis. The research data is sourced from international and national academic literature, such as reputable journal articles, scientific books, reports of educational and technological institutions, as well as policy documents related to AI ethics and personal data protection.[13] In addition, this study also examines the guidelines for the use of AI in education issued by educational institutions and international organizations as contextual analysis materials.

The data collection technique was carried out through a systematic search of literature with relevant keywords, including generative artificial intelligence, ethics in education, data privacy, educational datafication, and academic integrity.[14] The collected literature was then selected based on thematic relevance, depth of analysis, and its contribution to ethical and privacy issues in AI-based education. Data analysis was carried out using critical thematic analysis. At this stage, the data is coded to identify key themes, such as power relations in the use of generative AI, educational data collection and management practices, the risk of privacy violations, and ethical implications for educational values. Furthermore, the themes are analyzed dialectically by integrating the perspectives of educational ethics and digital privacy, resulting in a comprehensive and non-fragmented understanding.

RESULT AND DISCUSSION

[12] Zainal Aqib dan Mohammad Hasan Rasidi, *Metodologi penelitian pendidikan*, Deepublish, 2019, https://otomasi.unnes.ac.id/index.php?p=show_detail&id=86074&keywords=.

[13] Asep Kurniawan, "Metodologi penelitian pendidikan," Remaja Rosda Karya, 2018, http://repository.syekhnurjati.ac.id/3334/.

[14] Rita Kumala Sari dkk., *Metodologi penelitian pendidikan* (Sada Kurnia Pustaka, 2023), https://books.google.com/books?hl=id&lr=&id=3He2EAAAQBAJ&oi=fnd&pg=PA103&dq=metodologi+penelitian+pendidikan&ots=VGQdsXnvst&sig=a9UKZVsnJ8oAp0B5i152hN1tuQw.

Islamic Education and Technology

Theoretically, social media is part of modern communication theory that emphasizes the connectedness between individuals through digital networks. McLuhan with his theory of the "*global village*" describes a world that is increasingly connected so that geographical boundaries are blurred.[15] In the context of education, social media has become one of the tangible manifestations of *the global village*, where students can access information and science from various parts of the world.[16] Another theory, namely social constructivism, explains that social media supports the creation of a collaborative learning environment, where students are not only recipients of information, but also act as producers of knowledge through discussion, collaboration, and sharing experiences.[17] However, this advantage can backfire if it is not accompanied by digital ethics, because social media is also prone to abuse, such as plagiarism, the spread of hoax information, and privacy violations.

In relation to Islamic Religious Education, social media presents very complex opportunities as well as challenges.[18] Students can quickly access the study of Islamic interpretations, hadiths, and literature through digital platforms, but at the same time, they are also at risk of being exposed to content that is misleading or contrary to Islamic principles.[19] This requires PAI teachers to have adequate digital literacy, so that they can be mentors as well as filters for students in choosing valid sources of Islamic knowledge.[20] PAI teachers not only serve as transmitters of knowledge, but also as guardians of values, tasked with ensuring that the use of digital technologies, including social media and generative AI, remains in line with Islamic ethical principles that emphasize honesty, responsibility, and usefulness.[21]The challenges faced by PAI teachers are increasingly complex with the presence of generative AI that is able to produce Islamic texts or materials automatically. On the one hand, generative AI can assist teachers in compiling teaching materials, providing additional explanations, and enriching the learning process. But on the other hand, the presence of generative AI poses serious problems related to academic integrity. Students have the potential to use AI to create tasks instantly without going through a critical thinking process, so that the main goal of education, namely the process of developing intellectual and moral abilities, can be neglected.[22] Furthermore, generative AI that is not properly controlled can spread biased, false, and even misleading

[15] Erum Waheed dkk., "Metaverse as a New Medium: Contemporary Research Trends in Media & Communication Discipline," *The Regional Tribune* 4, no. 3 (2025): 177–92, https://doi.org/10.55737/trt/SR25.133.

[16] Muhamad Hisyam and Cahyo Pamungkas, *Indonesia, Globalization, and Global Village* (Yayasan Pustaka Obor Indonesia, 2016), p. 347.

[17] Nabiila Tsuroyya Azzahra et al., "The Theory of Constructivism in the World of Learning," *SCIENTIFIC JOURNAL RESEARCH* STUDENT 2, no. 2 (2025): 2, https://doi.org/10.61722/jirs.v2i2.4762.

[18] Mariam Elbanna dan Muthoifin, "Islamic Education Models: A Bibliometric Analysis of Challenges and Prospects," *Solo Universal Journal of Islamic Education and Multiculturalism* 3, no. 01 (2025): 01, https://doi.org/10.61455/sujiem.v3i01.231.

[19] Yesshe Andes Balika, "The Transformation of Islamic Education in the Digital Era: A Study of Yusuf Al-Qaradawi's Thought," *Nusantara Education Journal* 10, no. 1 (2025): 1.

[20] Abdullah Hanif dkk., "Integration of Religious Moderation in Islamic Education: Challenges and Opportunities in the Digital Era," *Edukasi Islami: Jurnal Pendidikan Islam* 14, no. 01 (2025): 01, https://doi.org/10.30868/ei.v14i01.7767.

[21] Fatimah Nurlala Iwani et al., "Digital Morality in Education: Integrating Qur'anic Values in the Age of Technology," *Journal of Instructional and Development Researches* 4, no. 6 (2024): 6, https://doi.org/10.53621/jider.v4i6.419.

[22] Fahmy Syahputra et al., "Evaluation of the Effectiveness of Generative AI in Helping Teachers Compile Learning Materials in Indonesia: Research," *Journal of Community Service and Education Research* 3, no. 3 (2025): 3, https://doi.org/10.31004/jerkin.v3i3.381.

Islamic information. Therefore, teachers need to have a clear ethical framework in utilizing this technology so that it does not contradict the teachings of Islam.[23]

Etika Islam dalam penggunaan teknologi menekankan pentingnya prinsip amanah (trust), justice, and responsibility. In the Islamic perspective, science is a mandate that must be used for the benefit of the ummah, not to damage morality or violate the rights of others.[24] Therefore, the use of generative AI must pay attention to privacy ethics and academic integrity. The privacy of students, for example, is a right that must be protected, as the Qur'an emphasizes the prohibition of spying or interfering in the private affairs of others. This is as Allah SWT says:

يٰٓاَيُّهَا الَّذِيْنَ اٰمَنُوا اجْتَنِبُوْا كَثِيْرًا مِّنَ الظَّنِّ اِنَّ بَعْضَ الظَّنِّ اِثْمٌ وَّلَا تَجَسَّسُوْا وَلَا يَغْتَبْ بَّعْضُكُمْ بَعْضًاۗ اَيُحِبُّ اَحَدُكُمْ اَنْ يَّأْكُلَ لَحْمَ اَخِيْهِ مَيْتًا فَكَرِهْتُمُوْهُۗ وَاتَّقُوا اللّٰهَ ۗاِنَّ اللّٰهَ تَوَّابٌ رَّحِيْمٌ

O you who have believed, stay away from many prejudices! Actually, some prejudices are sins. Do not look for the faults of others and do not gossip about others. Is there any of you who likes to eat the flesh of his dead brother? Of course you feel disgusted. Fear Allah! Indeed, Allah is the Repentant and the Most Merciful. (Qs. Al-Hujurat/49: 12).

At first glance, it can be understood that the principle of honesty is the main foundation that must be upheld in the learning process, so that students do not get caught up in fraudulent practices or plagiarism facilitated by technology. According to the results of research by Gaffar, et al., AI can be the main driver of innovative and inclusive educational transformation, as long as its use is done wisely by emphasizing the role of teachers as learning facilitators and accompanied by the support of ethical regulations and equitable access to technology.[25] According to Fatmadiwi's research, while AI (especially tools like ChatGPT) has great potential to improve the learning process, this technology also poses new challenges related to ethics and academic integrity. A tendency to be more tolerant of AI-assisted plagiarism, especially in a cultural context that emphasizes collaboration and collective learning. Although AI-based plagiarism detection systems show significant improvements in accuracy, recall, and precision, the absence of clear institutional guidelines especially in developing countries raises ethical ambiguity.[26]

Generative AI has great potential in improving the quality of learning, both in terms of providing materials, personalizing learning, and administrative efficiency. Much of the literature shows that generative AI is able to help teachers design adaptive curricula, provide instant feedback, and create learning experiences that suit the individual needs of learners. According to Mohamed et al, the use of generative AI allows educators to create meaningful, inclusive and effective learning by upholding ethical principles.[27] The use of generative AI poses a serious risk to academic integrity. Students tend to use this technology to produce assignments or scientific papers instantly without going through a critical thinking process. This can reduce the quality of learning and undermine the main purpose of education, which is character formation and the

[23] Jauhara Albar Rouhullah, "The Adverse Impact of Artificial Intelligence (AI) Image Generators on the Educational Process of Islamic Religious Studies," *IJITECH: Indonesian Journal of Information Technology* 3, no. 1 (2025): 1, https://doi.org/10.71155/kbercz02.

[24] Nurhalizah Nurhalizah and Rustina Rustina, "Technology and Morality: Examining the Principles of Islamic Ethics in the Modern Era," *Proceedings of Islamic Studies and Scientific Integration in the Era of Society (KIIIES) 5.0* 4, no. 1 (2025): 1.

[25] Aden Arif Gaffar et al., "The Utilization of Generative Artificial Intelligence in the Field of Biology Education and Education: Literature Review," *PEDAGOGY BIOLOGY* 3, no. 02 (2025): 19–26, https://doi.org/10.31949/pb.v3i02.15616.

[26] Anggi Fatmadiwi dkk., "Kebijakan Artificial Intelligence (AI) Dalam Pembelajaran Di Perguruan Tinggi," *Jurnal Alwatzikhoebillah : Kajian Islam, Pendidikan, Ekonomi, Humaniora* 11, no. 1 (2024): 1, https://doi.org/10.37567/alwatzikhoebillah.v11i1.3633.

[27] Fathima Nuzha Mohamed dkk., "Generative Artificial Intelligence and Personalized Learning Environment: Challenges and Opportunities," *Southern Journal of Computer Science* 1, no. 01 (2025): 01.

development of intellectual potential. According to Suriano et al., the use of generative AI is effectively able to promote more meaningful, effective and efficient learning in increasing the critical power of students and teachers, but with a use that prioritizes an educational approach and encourages active involvement in learning.[28]

In terms of privacy, it shows concerns related to the misuse of personal data. Generative AI requires large amounts of data to operate optimally, so it has the potential to access, store, and use learner data without explicit permission. This is contrary to the principle of personal data protection which is an important part of human rights. Therefore, according to Yuzyk et al., in the use of privacy data, there needs to be further supervision both constitutionally and legally.[29]

The development of *Artificial Intelligence* (AI), especially generative AI, has brought major changes in the world of education. This technology is capable of automatically generating text, images, and multimedia content, which can support the process of learning, research, and educational administration. However, the use of generative AI also poses serious challenges related to ethics, privacy, and legal responsibility for the data and decisions generated by such systems. Generative AI can be categorized as an electronic agent that operates autonomously to perform certain functions, so the principles of responsibility and ethics of electronic system operators also apply to generative AI developers and users in the education sector. Ethics in the use of generative AI highlights how developers, educators, and learners should behave to minimize the social, academic, and privacy risks that can arise from the use of these technologies. These risks can arise due to unethical system design, misuse (e.g. plagiarism or data manipulation), or misuse of personal data. The results of the study show that PAI teachers are in a very strategic position to direct the use of generative AI. Teachers not only act as facilitators of learning, but also as responsible guardians of values to ensure that technology is used in accordance with the principles of honesty, fairness, and respect for privacy.

Privacy Ethics in Using Technology

The use of digital technologies in various educational and social practices is still ongoing within a weak and unbalanced framework of privacy ethics. Technology is often positioned as a neutral tool that improves efficiency and convenience, while the ethical dimension of protecting user privacy, especially personal data, is often overlooked. In practice, individuals voluntarily submit data through digital platforms without an adequate understanding of how such data is collected, processed, stored, and utilized by third parties. This condition puts users in a vulnerable position in the unequal power relations between humans and technological systems. This means that privacy ethics have not yet become the main consideration in institutional decision-making related to the use of technology. Data protection policies are often formalistic and not accompanied by clear transparency and accountability mechanisms. As a result, the practice of digital surveillance and data exploitation takes place covertly, even legitimized in the name of innovation and security. In this context, privacy is no longer understood as a fundamental human right, but rather reduced to a commodity that can be exchanged for access and services to technology.

Low digital ethical literacy contributes significantly to the normalization of privacy violations. Users tend to accept the terms and conditions of the use of technology without a reflective process, while institutions fail to build an ethical culture that puts human dignity at the center of the use of technology. Technology ultimately not only regulates user behavior, but

[28] Rossella Suriano dkk., "Student interaction with ChatGPT can promote complex critical thinking skills," *Learning and Instruction* 95 (Februari 2025): 102011, https://doi.org/10.1016/j.learninstruc.2024.102011.

[29] Olha Yuzyk dkk., "Research on Generative Artificial Intelligence Technologies in Education: Opportunities, Challenges, and Ethical Aspects," *BRAIN. Broad Research in Artificial Intelligence and Neuroscience* 16, no. 1 Sup1 (2025): 1 Sup1, https://doi.org/10.70594/brain/16.S1/12.

also shapes the way we think, make decisions, and understand the boundaries between private and public spaces. Thus, this study emphasizes that the main problem in the use of technology does not solely lie in the technical aspects or security of the system, but in the failure to place privacy ethics as a basic principle. Without the repositioning of privacy ethics as a normative foundation, the use of technology has the potential to deepen power imbalances, weaken individual autonomy, and erode human values in contemporary digital life.

The description clearly shows that the issue of privacy ethics in the use of technology does not stand in one particular sector, but permeates all joints of social life. Today's digital technology is no longer just a tool, but has become a space where people live, learn, and build identities. In this space, the boundaries between the private and the public are increasingly blurred, while the ethical awareness of users often lags far behind the pace of innovation. Privacy is no longer something that is consciously protected, but is slowly sacrificed through seemingly normal and unproblematic digital habits. At the institutional level, technology operates in a logic of efficiency and control, not within the framework of moral responsibility. Human data is produced, managed, and leveraged as a strategic resource, often without a truly free and informative consent mechanism. Privacy ethics are reduced to dry administrative language, while surveillance and data collection practices take place systematically. This condition shows that the violation of privacy is not solely the result of individual negligence, but the result of the design of a system that consciously prioritizes institutional and economic interests. Furthermore, the normalization of privacy violations has shaped a permissive digital culture. Users are accustomed to accepting behavioral tracking, profiling, and archiving as a reasonable price for technological convenience. In this context, technology is not only used by humans, but instead uses humans as data objects that are constantly exploited. Power relations become uneven, as control over data and algorithms is entirely in the hands of technology managers, while users lose a bargaining position over their own digital identities.

Accountability has to do with who is responsible for the output of generative AI, especially in the event of errors, abuses, or violations of academic ethics. In the context of education, the responsibility lies not only with AI developers, but also with educators, educational institutions, and end-users (learners). The "*Multi-Stakeholder Responsibility*" approach emphasizes that each party involved must understand its role[30], namely: *First*, AI developers are responsible for ensuring that the system is free from bias and equipped with data security mechanisms. *Second*, educational institutions are required to establish clear guidelines for the use of AI (e.g. AI-based anti-plagiarism policies). *Third,* users must be able to use generative AI ethically, not to replace originality of thinking, but to support the learning process. The university's internal legal and policy framework needs to include accountability mechanisms, including reporting procedures, error correction, and sanctions in the event of academic ethics violations related to the use of AI.

Furthermore, accountability must be embedded in institutional governance and academic culture, not treated merely as a technical or legal issue. Educational institutions need to cultivate ethical awareness among educators and students by integrating accountability principles into codes of academic conduct, curriculum design, and professional development programs. When accountability is understood as part of academic integrity, generative AI can be positioned as a supportive tool rather than a shortcut that undermines critical thinking, originality, and scholarly responsibility. In addition, effective accountability requires preventive and corrective mechanisms. Preventive mechanisms include ethical guidelines, training on responsible AI use, and continuous evaluation of AI systems used in education. Corrective mechanisms involve clear procedures for addressing misuse, such as investigation processes, remediation of harm,

[30] Ladislaus Semali, "Leveraging Multistakeholder Partnerships in Technical, Vocational Education, and Training," *Vocation, Technology & Education* 1, no. 1 (2024): 1, https://doi.org/10.54844/vte.2024.0558.

and proportional sanctions. These mechanisms ensure that accountability is not merely symbolic, but operational and enforceable within the academic environment. Ultimately, accountability in the use of generative AI reflects a commitment to protecting the core values of education: truth, fairness, and human dignity. By adopting a multi-stakeholder responsibility framework supported by transparent policies and enforceable accountability mechanisms, educational institutions can ensure that generative AI contributes positively to learning innovation while maintaining ethical integrity and public trust.

The principle of *fairness* requires that generative AI systems do not discriminate or bias against certain groups. In the world of education, this means that AI algorithms should not benefit or disadvantage users based on race, gender, socioeconomic background, or language ability. To achieve fairness, AI developers must use diverse and representative training datasets, as well as conduct bias testing on a regular basis. In an academic context, generative AI must also be designed so as not to reproduce social stereotypes in its content or recommendations. Educational institutions can take an active role by conducting ethical audits of the AI platforms used, ensuring that the systems implemented in the classroom do not promote inequities or biases hidden in the data.

Privacy is the most crucial aspect of the use of generative AI in the world of education. AI often collects personal data such as names, academic history, writing styles, and even sensitive information that users input during the learning process. If not managed properly, this has the potential to cause privacy violations and misuse of student data. The concept of "*Privacy by Design*" introduced by Ann Cavoukian is relevant to be applied in the design of generative AI systems.[31] This approach emphasizes that privacy protections should be built in the early stages of system development, not just as an add-on at the end. Legally, Indonesia does not have specific regulations on the use of generative AI in the world of education, but it does have Law Number 27 of 2022 concerning Personal Data Protection, which defines personal data protection as "the entire effort to protect personal data in a series of processing to guarantee the constitutional rights of personal data subjects." In the context of education, institutions that use generative AI are obliged to ensure that user data is stored and processed with strong encryption, explicit permissions, and limited access in accordance with the provisions of the law.

Thus, the application of generative AI in the world of education must follow the principles of data security, user privacy, and algorithmic transparency, so that the presence of this technology truly supports innovative, safe, and ethical learning. From the results of the analysis, it can be concluded that the use of generative AI in the world of education requires the application of strict ethical and privacy standards so that the benefits of technology can be felt without sacrificing academic values or individual rights. The principles of transparency, accountability, fairness, and privacy are the main foundations that need to be upheld by both developers and educational institutions. With the right ethical arrangements and the support of national regulations such as the ITE Law 2024 and the PDP Law 2022, the use of generative AI in Indonesia has the potential to become an innovative, responsible, and respectful means of learning that respects human dignity.

Learning becomes an algorithm-based mechanical activity, while shifting the role of humans from educational subjects to mere data objects. Therefore, the principles of data security, user privacy protection, and algorithmic transparency should be placed as fundamental prerequisites, rather than as complements once the technology is implemented. The results of the analysis confirm that the use of generative AI in the educational environment requires the application of strict ethical and privacy standards so that technological innovation does not

[31] Rustiyana Rustiyana et al., *The Utilization of AI in Cybersecurity* (PT. Sonpedia Publishing Indonesia, 2025), hm. Sec. 27.

sacrifice academic values, scientific integrity, and the individual rights of students and educators. The principles of transparency, accountability, fairness, and privacy protection should be the common foundation that technology developers, educational institutions, and creators adhere to.

CONCLUSION

This study concludes that the integration of ethical principles and religious values is crucial in responding to the rapid adoption of generative AI in the educational sector. The findings demonstrate that generative AI has significant potential to support educational innovation, particularly in enhancing learning personalization, efficiency, and access to educational resources. When used appropriately, this technology can assist educators in designing adaptive learning experiences and help students engage more effectively with learning materials. However, behind these opportunities lie serious challenges that cannot be ignored. The use of generative AI poses substantial risks to academic integrity and student privacy, especially when ethical guidelines and data protection mechanisms are weak or absent. The ease with which AI can generate academic content raises concerns about plagiarism, authenticity of learning outcomes, and the erosion of students' critical thinking skills. At the same time, the collection and processing of personal data through AI systems expose students to potential violations of privacy and unequal power relations between users and technology providers. In the context of Islamic Religious Education (PAI), the application of generative AI must be firmly grounded in Islamic ethical values, such as honesty and transparency (ṣidq), justice (ʿadl), trustworthiness (amānah), and respect for privacy (ḥifẓ al-ḥurūmāt). These values serve as moral boundaries that guide the responsible use of technology, ensuring that innovation does not undermine the spiritual and ethical objectives of education. Generative AI, therefore, should function as a supportive tool rather than a substitute for human responsibility and moral judgment.

The implications of this study highlight the urgent need to strengthen digital and ethical literacy among students, educators, and educational stakeholders, particularly Islamic Religious Education teachers. Educators must be equipped not only with technical skills but also with ethical awareness to critically evaluate and supervise the use of AI in learning processes. Ethical competence becomes a key factor in ensuring that generative AI is used as a means of empowerment rather than exploitation. Furthermore, this study emphasizes the importance of clear and comprehensive regulations governing the use of AI in education. Governments and educational institutions must collaborate to develop policies that balance innovation with protection of academic values and individual rights. Regulatory frameworks should address issues of data protection, algorithmic transparency, accountability, and fair access, so that the risks of misuse and inequality can be effectively minimized. In conclusion, generative AI has the potential to become a transformative tool in education if it is guided by strong ethical standards, religious values, and supportive regulatory frameworks. When used responsibly, generative AI can not only improve the quality and effectiveness of education but also contribute to the formation of learners who are intellectually competent, morally grounded, and spiritually aware.

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