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THE TRANSFORMATION OF ISLAMIC EDUCATION IN THE ERA OF ARTIFICIAL INTELLIGENCE (AI): OPPORTUNITIES, CHALLENGES, AND ETHICS OF ITS USE

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Abstract

The transformation of Islamic education in the era of artificial intelligence (AI) opens up great opportunities to improve the quality, effectiveness, and relevance of learning. This article aims to examine in depth the potential, challenges, and ethical framework in the use of AI for Islamic education. Using the literature review method, various scientific literature is thematically analyzed to identify patterns, findings, and strategic recommendations. The results of the study show that AI is able to provide a more personalized, adaptive, and efficient learning experience through features such as chatbots, automated evaluations, and interactive learning. However, significant challenges also arise, including limited infrastructure, low digital competence of teachers, unprepared curriculum, and concerns about the degradation of human and spiritual values. The key findings of this article are that AI integration should be governed within an Islamic ethical framework centered on the principles of sharia maqashid, specifically hifz al-din (protection of religion) and hifz al-aql (protection of reason). This article contributes by offering a character-centric model of AI integration and positioning AI as a tool that is subject to humanist values, rather than as an essential substitute for the role of murabbi. A comprehensive strategy is needed, including curriculum reform, strengthening teacher competence, and ethical regulations based on local wisdom. This article offers a comprehensive technology integration strategy through curriculum updates, strengthening teachers' digital competencies, cross-sector collaboration, and the development of contextual Islamic learning content.

Keywords: *Artificial Intelligence (AI), Islamic Education, Islamic Ethics*

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A. Introduction

The digital era and artificial intelligence (AI) have brought significant changes in various aspects of life, including in the field of education. According to a report from *International Telecommunication Union* (ITU), in 2021, more than 4.9 billion people worldwide used the internet, which shows how important technology is in daily life (ITU, 2021). This transformation provides an opportunity to improve the accessibility of education, especially in the context of Islamic education. However, these changes also pose challenges for Islamic educational institutions to remain relevant and adaptable to rapid technological developments.

The main challenge facing Islamic education is how to maintain the core values of Islam while utilizing modern technology (Arifin, 2025; Hajri, 2023; Johan et al., 2024; Khasanah, 2024). Study results (Azhar & Asykur, 2024; Manshur & Isroani, 2023; Putri et al., 2025; Sambaga, 2024) shows that many Islamic educational institutions still use traditional teaching methods that are less effective in attracting the younger generation. Therefore, it is important for Islamic educational institutions to integrate technology in the learning process without sacrificing the basic principles of Islamic teachings.

The urgency of integrating technology in Islamic education in addition to the demands of the times, is also to improve the quality of education itself. According to research conducted (Abdillah & Astutik, 2024; Hasanah, 2024), the use of technology in Islamic education can increase student participation, speed up the learning process, and provide a more interactive learning experience.

Several previous studies have shown the importance of integrating technology in Islamic education, particularly in response to digital developments and artificial intelligence. (Hadziq et al., 2024) found that the use of AI in Islamic religious education can reinforce Islamic values through learning personalization, automated evaluation, and the presentation of more interactive and contextual materials. This research also emphasizes the importance of teachers' digital literacy and ethical foundations in the application of AI technology.

Other research by (Salim & Aditya, 2025) which examined 26 articles in the period 2018–2024 showed that the trend of using AI in Islamic education has increased significantly. They identified that AI applications are most widely used in learning the Qur'an and Hadith, AI-based digital educational media, as well as the use of *Chatbot*. Nevertheless, they also noted major challenges in terms of infrastructure, teacher resistance, and concerns about algorithmic bias.

In line with that, (Hakim & Anggraini, 2023) In its systematic study, it is stated that AI has great potential in increasing the efficiency and effectiveness of Islamic learning, such as in terms of automatic question preparation, detection of student difficulties, and

strengthening value-based learning. However, they emphasized that the implementation of AI must be guided by Islamic ethical principles so as not to violate the goals of Islamic education itself.

The above findings show that the use of technology, especially AI, is no longer limited to responding to the demands of the times, but also as an opportunity to improve the quality, effectiveness, and meaning of Islamic education. However, the use of AI still needs to be monitored with Islamic ethical principles to be in line with the educational mission that is not only oriented to intellectual intelligence, but also spiritual and moral. Therefore, this paper aims to examine how Islamic education can respond to the development of AI, as well as explain the opportunities, challenges, and ethical foundations in its implementation.

B. Method

This research uses the Library Research method with a Qualitative Thematic Content Analysis approach. The primary data sources used are reputable scientific journals, proceedings, and textbooks relevant to Islamic Education, Artificial Intelligence (AI), Technological Ethics, and Philosophy of Education.

Literature selection is based on strict inclusion criteria, including: (1) publication in reputable indexing databases (Scopus Q1-Q4 or SINTA 1-3); (2) focus on the interaction between Islam/Ethics/Education and Technology/AI; and (3) the time range of publication between 2018 and 2024.

The search keywords used include: "Islamic Education AI", "Maqashid Sharia AI Ethics", "Digital Curriculum Transformation", and "Education Dehumanization". Once the data is collected (about 35 key documents are selected), the analysis is carried out through the thematic coding stage. This stage includes (1) data reduction (sorting out key findings), (2) category development (Opportunities, Challenges, and Ethics), and (3) thematic synthesis to build an ethical conceptual framework centered on sharia maqashid, which is the main contribution of this article.

The analysis technique used is content analysis (*Content Analysis*) on literature related to the research theme (Wijaya et al., 2025). A thematic approach is applied to identify the main patterns and themes that emerge from the data collected. In this way, the researcher can summarize the relevant information and organize it in a systematic framework. The results of this analysis are expected to provide useful insights for the development of Islamic education in the current digital and artificial intelligence (AI) era.

C. Finding and Discussion

1. The Potential of AI in Improving the Quality of Islamic Education

One of the greatest potentials of artificial intelligence (AI) in Islamic education is its ability to provide personalized and adaptive learning (S. Fahrudin & Effendi, 2025; Hastuti & Hartono, 2024; Huda & Suwahyu, 2024). Using advanced algorithms, artificial intelligence can analyze the individual learning needs of students and present appropriate learning materials.

For example, AI-based learning platforms can help students who have difficulty understanding certain concepts by providing additional explanations or more exercises. The use of AI in education is considered to increase learning outcomes by up to 30% with a more personalized approach (Ettyani, 2025; Talentics, 2024).

Technologies such as *Chatbot* also began to be used in the context of Islamic education (R. Fahrudin et al., 2024; A. Saputra et al., 2022). *Chatbot* can provide quick answers to students' questions about the subject matter or assist them in understanding the teachings of Islam. An example of this application can be seen in Qur'an learning applications that use AI to help students read and understand the text of the Qur'an better (Maulid, 2025; I. A. Saputra, 2023; Ubaidilah, 2024).

Such an application not only provides easy access, but also increases students' interest in learning religious teachings. A study by (Jumahir et al., 2025) showed that students who used artificial intelligence (AI)-based interactive learning methods experienced a significant improvement in their understanding of Qur'anic values. AI can also serve as an aid in automated evaluations and provide quick feedback to students (Admin, 2024; MTsN 8 Sleman, 2025; UNMAHA, 2023). With an AI-based evaluation system, Islamic educational institutions can save time and resources in the assessment process. Additionally, prompt feedback can help students to quickly figure out their mistakes and improve their understanding.

According to (Ettyani, 2025) and (AICI, 2024) The use of AI-based evaluations can improve the efficiency of the learning process and provide a more interactive learning experience. However, while there are many opportunities, it is important to consider the challenges that arise in the implementation of AI in Islamic educational institutions. In the next section, we will discuss the challenges faced in integrating AI into the Islamic education system.

2. Discussion of the Challenges of AI Implementation in Islamic Education

Artificial intelligence (AI) offers various potentials to improve the quality of Islamic education, but in its implementation it is inseparable from a number of significant

challenges. These challenges include aspects of infrastructure, human resources, institutional readiness, and value and cultural issues.

a. Infrastructure Limitations and Technology Access

One of the main obstacles in the application of AI technology in Islamic educational institutions, especially those in rural areas or disadvantaged areas, is the limited infrastructure (Shoreamanis, 2025). Many schools and madrassas do not have stable internet access, adequate technological devices, or even consistent electricity. According to the data (BPS, 2022), more than 30% of madrassas in Indonesia still face limitations in access to ICT (Information and Communication Technology). This is a fundamental obstacle to integrating AI optimally.

b. Readiness and Competence of Educators

The next challenge is the readiness of teachers or educators. Many teachers in Islamic educational institutions do not yet have the technical ability to use AI technology effectively in the teaching and learning process (Has, 2024). In addition, there has not been much training specifically designed to equip teachers with AI-based technology skills relevant to Islamic values. Study by (Achruh et al., 2024) shows that many teachers still do not have sufficient technical understanding to operate AI technology effectively in teaching, especially in the context of Islamic ethical values and considerations.

c. Curriculum Unpreparedness and Learning Approaches

Most of the current Islamic education curriculum does not explicitly accommodate the use of AI in the learning process (Muis et al., 2025). The curriculum is still dominant on textual and memorization approaches, so it does not provide enough space for the integration of technology as part of the learning method (Suwar et al., 2025). Without the support of a flexible and adaptive curriculum, AI-based learning development efforts become unstructured and less effective.

d. Concern for Degradation of Values and Human Relations

The implementation of AI also raises concerns about the loss of human aspects in education, such as the emotional relationship between teachers and students, character development through example, and the process of internalizing affective values (Has, 2024; Noor et al., 2025). In the tradition of Islamic education, the existence of teachers is not only as a teacher, but also as a *Murabbi* (spiritual and moral educators). Excessive reliance on technology is feared to reduce this dimension (Aziz et al., 2023).

3. Islamic Ethics in the Utilization of AI for Education

The use of artificial intelligence (AI) in Islamic education cannot be separated from Islamic ethical values (Dalimunthe, 2023). Technology is just a tool—how it is used depends heavily on the orientation and principles that are Underlying. Therefore, it is

important to ensure that the integration of AI in the Islamic education system is not only technically efficient, but also morally and ethically and spiritually. The following is a description of ethics in the use of AI for education:

a. The Principles *of Maqashid Syariah* as the Basis of Ethics

Islamic ethics in the use of technology, including AI, can be rooted in the framework *Maqashid Syariah*, namely the main objectives of Islamic sharia which include the protection of religion (*religion*), soul (*nafs*Reason, Reason.*Aql*), descendants (*NASB*), and treasures (*Mall*). The use of AI in education must support the achievement of these goals. For example, the use of AI to accelerate the understanding of the Qur'an or inculcate moral values is in line with the protection of religion and reason (Jumahir et al., 2025). However, if AI is used carelessly—for example, by accessing material that weakens students' personalities, or creates dependence on machines—then this is contrary to the maqashid of sharia. Therefore, ethical boundaries need to be affirmed in order for the use of AI to remain within those corridors.

In addition to being based on *sharia maqashid,* the application of Islamic ethics in the use of AI also needs to consider the principles *of maslahah* (public benefit) and *la dharar wa la dirar* (avoiding harm and loss). The maslahah principle requires that technology be used to create a wider good, such as increasing access to education, accelerating the understanding of Islamic science, and helping students with special needs.

Meanwhile, *the principle of la dharar* demands that AI not be used in ways that can harm students' mental, moral, or spiritual well-being, such as through data manipulation, the dissemination of misleading information, or the neglect of the teacher's role as the primary educator. By balancing utility and prudence, the use of AI in Islamic education can proceed responsibly, not only technically, but also ethically and spiritually.

b. Maintaining the Role of Teachers as Educators

In Islamic education, teachers are not only the conveyors of material, but also the coaches of students' personality and spirituality. AI should not completely replace teacher functions, but rather should be a tool that supports teachers' tasks. Direct interaction between teachers and students has a character-building value that cannot be replaced by technology. As mentioned in the hadith of the Prophet Muhammad PBUH, *"I was sent to perfect noble morals".* This principle emphasizes that Islamic education aims to form morals. Therefore, technology used in education must also support the formation of morals, not just cognition.

Furthermore, maintaining the role of teachers also means maintaining a humanistic dimension in education, which places empathy, exemplary, and emotional

touch as an important part of the learning process. AI may be able to present material efficiently, but it lacks the value sensitivity, pedagogical intuition, and moral wisdom of a true teacher. In the context of Islamic education, teachers are often role models in terms of worship, manners, and Islamic ways of social interaction. Therefore, the presence of AI must be directed to strengthen teacher capacity, such as in classroom management, adaptive material preparation, or learning evaluation, while still placing teachers as the center of value orientation and moral examples for students.

c. Privacy, Data Security, and Access Fairness

Islamic ethics also demand protection of privacy and fairness of access. AI systems often collect students' personal data, including learning tracks, digital habits, and behavioral tendencies. The management of this data must comply with the principle of trust and must not be misused (Purnomo, 2024). In QS. Al-Ahzab verse 72, Allah calls trust a great responsibility that only humans are able to bear.

On the other hand, Islamic education that uses AI must also pay attention to equitable access for all students. Do not let technology only be enjoyed by certain groups, while students in the 3T areas (disadvantaged, frontier, and outermost) are increasingly marginalized. In this context, the principle of justice ('adl) becomes very important.

Islamic ethics reject all forms of discrimination in access to knowledge, including those caused by technological gaps. The implementation of AI in education must be accompanied by inclusive policies that ensure the affordability of infrastructure, teacher training, and curriculum adaptation for various social and geographical backgrounds.

In addition, the management of student data must be carried out in a transparent and responsible manner, by upholding the principle of non-aggression (*la tazlimun wa la tuzlamun*). Any form of violation of privacy or use of data for commercial purposes without explicit consent is a form of betrayal of trust. Therefore, AI systems applied in Islamic education must be developed and run with an orientation of justice, protection of human dignity, and moral responsibility.

d. Maintaining the Purpose of Islamic Education

The ethics of the use of AI must always lead to the main goal of Islamic education, which is to form a whole human being spiritually, intellectually, socially, and morally (Syafe'i, 2017). AI can be used as long as it doesn't take away the spirit from the educational process itself. Technology must not shift the meaning of education from the coaching process to just the transmission of information.

From an Islamic perspective, education is not just a cognitive activity, but a process *of tazkiyatun nafs* (purification of the soul) and *ta'dib* (cultivation of manners). Therefore, the application of AI must be aligned with the vision of Islamic education as a process of forming a complete human being (*insan kamil*). If AI is only used for efficiency without

considering the spiritual and moral dimensions, then education will lose its direction and identity. In fact, the biggest challenge in the AI era is to ensure that technological advances do not distance students from the human and divine values that are at the core of Islamic education.

4. Digital Technology Integration Strategy in Islamic Curriculum

In order for artificial intelligence (AI) and digital technology to be optimally utilized in Islamic education, a comprehensive integration strategy is needed—not limited to the technical level, but also conceptual and value. This strategy includes curriculum design, educator training, cross-sector collaboration, and the development of Islamic value-based learning media. To realize this, strategic steps are needed that are planned and touch on various aspects in the Islamic education ecosystem. The following are some of the key strategies that can be applied to effectively and worthily integrate digital technologies, especially AI, into the Islamic education curriculum.

a. Adaptive and Responsive Curriculum Design

The Islamic education curriculum needs to be developed to be able to accommodate the development of digital technology, without sacrificing the essential values that have been the foundation of Islamic education for centuries (Hadziq et al., 2024). This adaptation should not only be limited to adding material—which is often just a burden without clear results, but also requires a reconstruction of the vision of Islamic education that combines classical scientific heritage with contemporary digital reality. Curricula must recognize that today's learners live in an information-saturated world, where scientific authorities often compete with fast-paced digital narratives that are not always scientifically or ethically valid. (Noor et al., 2025).

Therefore, adaptive curriculum design must include Islamic-based digital literacy as well as the ability to discern information, ethical awareness in the digital space, and transformative abilities in using technology as a means of da'wah, value advocacy, and identity strengthening. For example, learning tafsir or hadith is not only taught in the form of classical texts, but is associated with digital practices—such as making da'wah *podcasts*, animation-based Islamic law explanation videos, or online research projects based on virtual communities.

Furthermore, the curriculum also needs to shift the learning paradigm from mere normative knowledge towards the formation of Muslim digital characters, namely individuals who understand religious teachings and are able to navigate the digital world with noble morals, critical power, and social responsibility. This requires a cross-disciplinary approach in curriculum development—for example, integrating information fiqh, Islamic digital ethics, and *sharia maqashid* principles in the use of technology.

b. Strengthening Teachers' Digital Competencies

Teachers are the key to the success of technology integration. Therefore, there is a need for continuous training to equip teachers with the skills (Noor et al., 2025). Therefore, strengthening teachers' digital competencies must be a strategic priority. However, this reinforcement should not be solely oriented towards technical skills—such as mastery of LMS platforms, presentation applications, or interactive media design—but should also include pedagogical, ethical, and spiritual dimensions.

Teacher training needs to be designed as a holistic process that develops three main aspects: *First*, Technological skills. It includes the ability to use and modify learning software, get to know the basics of educational AI, and create media based on Islamic values. *Second,* Ethical awareness. This awareness includes an understanding of the social impact of technology, such as the potential for digital addiction, algorithmic bias, and student data privacy, which must be addressed through the values of trust, responsibility, and justice in Islam. *Third,* Spiritual example. This example is where teachers are not only teachers of Islamic content, but also models of using technology that are wise, wise, and in accordance with the maqashid of sharia.

Teachers need to be given space to dialogue and reflect, not just be trained in one direction. Therefore, training programs should be participatory and contextual, by presenting case studies, problem-based projects, and the integration of Islamic values in digital practice. This is important so that teachers do not feel alienated from the world of technology, but instead see it as a new da'wah field and a medium to strengthen the character of students. By strengthening the role of teachers as authoritative and adaptive figures in the digital ecosystem, Islamic education can maintain the continuity between traditional scientific heritage and the demands of the times. Teachers who are technologically literate and have an ethical view will be the key to creating a meaningful, humane, and spiritually valuable learning space.

c. Collaboration between Educational Institutions, Government, and Technology Industry

The success of technology integration in Islamic education cannot be left to just one party. Strong and sustainable synergy is needed between educational institutions, government, research institutions, and the technology industry. This collaboration is important not only for technical reasons, but also to ensure that the technology adopted is in accordance with Islamic values, pedagogically relevant, and affordable for all levels of society (Hadziq et al., 2024). For example, the development of an AI application for learning the Qur'an in collaboration between Islamic boarding schools, technology startups, and the ministry of religion.

The government has a crucial role in creating regulations that support the development of value-based educational technology, provide budgets for digital infrastructure in Islamic institutions, and ensure equal access in 3T (disadvantaged, frontier, outermost) areas. Meanwhile, Islamic research institutions and universities can play a role as centers for digital curriculum development, AI ethics research in an Islamic perspective, as well as evaluation of the impact of technology on student learning and character.

The technology industry, on the other hand, can also function as an ideological partner in creating digital products that are sensitive to Islamic values. This includes creating an AI-based Qur'an learning application, an automated assessment system for religious lessons, or an interactive and moderate digital da'wah platform. An ideal example of this collaboration is the collaboration between Islamic boarding schools, *technology start-ups*, and the Ministry of Religion in developing a voice-based learning application to teach tajweed or tafsir to the younger generation.

This collaboration must also be based on a common vision to make technology a tool for empowering the people, not as an instrument of cultural or economic domination. Therefore, it is important for each party involved to build open communication, understand each other's needs and values, and work within a transparent and responsible framework. With inclusive and targeted collaboration, digital transformation in Islamic education can run in a sustainable and valuable manner.

d. Islamic Learning Media and Content Development

In the digital era, content is the heart of the learning process, so the use of technology in Islamic education will not be optimal without the development of quality, relevant, and rooted in Islamic values and learning media and content (Noor et al., 2025). Content is not only a visual aid, but also a medium to convey the meaning, values, and moral messages inherent in every Islamic teaching.

It's important to realize that today's generation is *digital native*—they grew up with visual, interactive, and fast media. Thus, religious subject matter presented in the form of passive texts or conventional lectures often finds it difficult to attract their attention. This is where the importance of media such as dynamic Islamic history videos, 3D simulations of worship procedures, or educational games based on the exemplary stories of the Prophet and his companions, so as to be able to revive Islamic messages in a contextual and applicable form.

However, the development of Islamic media should not simply imitate modern visual trends. It must be accompanied by narrative strength, message clarity, and richness of value, as well as through a strict content curation process so as not to deviate from the principles of faith, morals, and sharia. Islamic content developers need to

collaborate with Islamic education experts, scholars, and educators, so that there is no simplification of meaning that reduces Islamic teachings to mere entertainment.

In addition, the content must be adapted to the diversity of the local culture. Islam in Indonesia, for example, has a wealth of localities that can be raised in digital content, such as the stories of the archipelago's scholars, local wisdom of Islamic boarding schools, or culture-based da'wah practices. This is important so that the young generation is not only connected to the teachings of Islam universally, but also feels belonging and proud of their local Islamic heritage.

D. Conclusion

The conclusion of this study confirms that artificial intelligence (AI) has great potential in driving the transformation of Islamic education towards a more adaptive, efficient, and relevant direction to the times. The use of AI has been proven to improve the quality of learning through various means, such as personalizing materials, using *chatbots* for learning assistance, and automated evaluations that speed up the feedback process. Nevertheless, the integration of AI in Islamic education is not without challenges. Various obstacles are still encountered, especially in the limited infrastructure, low digital competence of educators, a curriculum that is not adaptive, and concerns about the loss of the human dimension in the teaching and learning process.

An important finding from this study is that the use of AI in Islamic education must always be based on the ethics and values of Islamic teachings themselves. The framework of *sharia maqashid,* trust in safeguarding data and information, and justice in access are important principles so that AI does not deviate from the main goal of Islamic education, which is to form a complete human being spiritually, intellectually, and morally. Therefore, AI should not replace the role of teachers as spiritual educators, but rather should be a tool that strengthens the role of teachers in shaping the character of students.

As a practical contribution, this article offers four important strategies in the integration of AI into the Islamic education system: curriculum updates that are adaptive and responsive to technological change; strengthening teachers' digital competencies that are not only technical but also ethical and spiritual; cross-sectoral collaboration between educational institutions, government, and the technology industry; as well as the development of contextual and valuable Islamic learning media and content.

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