

UTILIZATION OF ARTIFICIAL INTELLIGENCE IN ISLAMIC RELIGIOUS EDUCATION LEARNING IN THE DIGITAL ERA

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Abstract

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This study aims to deeply analyze the use of Artificial Intelligence (AI) in Islamic Religious Education (PAI) learning as an innovation that bridges spiritual values with technological advances. Using a library research approach, this study examines various literature, academic reports, and case studies in developing countries such as Indonesia, Egypt, and Pakistan, to understand the application, opportunities, and challenges of AI in the context of Islamic education. The study results indicate that AI has great potential to improve the effectiveness of the learning process, such as through da'wah chatbots, automated evaluation systems, adaptive learning designs, and the production of digital Islamic content. However, the implementation of AI also presents serious challenges, particularly related to ethics, spiritual authenticity, and digital literacy of teachers and students. This study emphasizes the importance of collaboration between Islamic scholars, educators, and technology developers in designing AI systems that align with sharia principles and humanitarian values. The impact of this research strengthens the direction of the transformation of Islamic education towards a civilized digital era, where technology does not erode religiosity but instead enriches students' spiritual and intellectual experiences in facing global dynamics.

INTRODUCTION

The rapid development of digital technology has marked a new chapter in the world of education. The emergence of *Artificial Intelligence* (AI) is not merely a technological phenomenon, but rather an epistemological revolution that is transforming the way humans think, learn, and teach. In the educational context, AI is not only an assistive instrument but also an agent of transformation that transcends the boundaries of the conventional classroom (Pabubung, 2021) . Amid this wave of disruption, Islamic Religious Education (PAI) faces a unique challenge: how to maintain spiritual and moral values while adopting artificial intelligence as an effective learning tool. Critical questions arise: can AI become a partner in the tarbiyah process, or does it potentially violate the meaning of Islamic education, which is essentially centered on humanitarian values and exemplary behavior.

Since the COVID-19 pandemic, the Indonesian education system has experienced accelerated digitalization. Online platforms, *learning management systems* (LMS), and algorithm-based tools have become widely used, including in Islamic Religious Education (PAI) learning. According to a UNESCO report (2023), approximately 65% of educational institutions in Southeast Asia have integrated AI elements into the teaching and learning process (Wang et al., 2023) . This phenomenon is a strong indicator that technology-based learning has become a necessity, not just an alternative. However, this transformation presents a paradox: on the one hand, it opens up significant opportunities for Islamic pedagogical innovation, but on the other, it demands caution in maintaining the authenticity of Islamic values. Islamic Religious Education teachers are now challenged to play a role not only as transmitters of knowledge but also as moral stewards amidst a limitless sea of digital information.

In practice, the use of AI in Islamic Religious Education (PAI) is beginning to be seen in several concrete forms: da'wah chatbots that can answer religious questions, automated evaluation systems for assessing religious attitudes, and adaptive platforms that tailor material to students' levels of understanding. AI has even been used in the production of Islamic content, such as *text-to-speech* for Quranic recitations and *AI translators* that translate interpretations across languages. These advances pave the way for more personalized, interactive, and data-driven learning. However, this convenience does not come without risks. AI, if not ethically and epistemologically controlled, can pose a latent threat to the spiritual meaning of Islamic education, as values derived from revelation cannot be reduced to mere algorithms.

In terms of opportunities, AI can bridge the gap in access to Islamic education in remote areas. Students who previously had difficulty accessing learning resources can now learn through responsive and contextual smart applications. Teachers are also assisted with administrative efficiency and classroom management, allowing them to focus more on students' spiritual development. Furthermore, AI also promotes Islamic digital literacy, fostering a generation that is not only technologically literate but also ethically aware of its use. Global collaboration between Islamic educational institutions can be realized through AI-based platforms, opening up space for the exchange of ideas across cultures and schools of thought while maintaining the principle of moderation (*wasathiyah*).

However, the use of AI in Islamic Religious Education (PAI) is not without serious challenges. Ethical challenges arise when artificial intelligence is perceived as capable of replacing the role of teachers as *educators* , even though the function of educators in Islam is not merely to transfer knowledge, but also to guide the heart and morals. Another challenge lies in the validity of the data and religious sources used by AI. Errors in programming or referencing can result in distorted meanings of Islamic texts. Low digital literacy among Islamic Religious Education (PAI) teachers and students also widens the gap in adaptability to new technologies. Furthermore, concerns about the loss of spirituality in machine-based learning serve as a warning to the world of Islamic education to avoid falling into the trap of false efficiency that ignores the essence of the perfect human being.

To address these challenges, a mitigation strategy is needed that balances technological approaches with sharia values. AI should be positioned as a *support system* for teachers, not a replacement. The government, educational institutions, and technology developers need to collaborate with Islamic scholars and academics to design learning systems that align with the maqasid of sharia. Islamic digital literacy training is key to

ensuring teachers and students understand the ethical boundaries of technology use. The future Islamic Religious Education curriculum needs to be designed with an emphasis on critical thinking skills, moral awareness, and the responsible use of technology. Thus, AI can serve as a means of *tathwir al-tarbiyah* (reformed Islamic education) renewal that remains grounded in divine values.

state-of-the-art level, the use of AI in Islamic Religious Education (PAI) learning marks a new phase in the integration of science and spirituality. Recent research indicates that the use of AI in Islamic education is still at an exploratory stage, focusing on efficiency and personalization of learning, but has not yet addressed theological and ethical aspects in depth. A study from Al-Khalil University (2024) highlighted that AI has the potential to strengthen values-based learning practices, provided that the algorithms are designed with moral sensitivity and a strong Islamic context. This means that *the state-of-the-art* in this research lies not only in its technological aspects, but also in efforts to synergize the values of monotheism, morality, and science within a new epistemological framework relevant to the digital era.

The urgency of discussing this topic is both normative and philosophical. Islamic religious education bears a moral responsibility to safeguard human nature from the dehumanizing influence of technology. If AI is allowed to operate without any value control, Islamic education will lose its substance as a process of forming noble morals. This research is motivated by the urgent need to formulate an adaptive Islamic educational paradigm that remains grounded in revelation. In this context, the use of AI is viewed not as a threat, but as a strategic opportunity to broaden the horizons of da'wah (Islamic preaching) and strengthen the spiritual dimension amidst modernity.

Ultimately, research on the use of AI in Islamic Religious Education (PAI) learning is crucial for affirming Islam's position as a religion that remains relevant to current developments. With a normative approach that emphasizes the harmony between technology and ethics, this study is expected to make a tangible contribution to the development of an intelligent, civilized, and just Islamic education system. AI is merely a tool, but its use is determined by knowledgeable and devout individuals. Therefore, the synergy between *artificial intelligence* and *spiritual intelligence* must become a new pivot for the future of humanistic and transformative Islamic education.

RESEARCH METHODS

This research uses a *juridical-normative approach* with descriptive-analytical analysis combined with a literature review. This approach was chosen because the object of the study focuses on the use of *Artificial Intelligence* (AI) in Islamic Religious Education (PAI) learning, which epistemologically cannot only be observed through empirical data but must also be examined from the perspective of Islamic values, norms, and moral principles. Research data were obtained through a literature review of scientific books, reputable national and international journal articles, seminar results, research reports, and relevant education and technology policy documents. All data sources were analyzed qualitatively with an emphasis on conceptual argumentation and logical reasoning to find the integration between Islamic pedagogical values and the principles of artificial intelligence. In this context, the analysis is not directed at producing statistical data, but rather at building a rational and normative framework for how AI can be integrated into a learning system oriented towards spiritual and humanitarian values.

The analysis was conducted through three main processes: data reduction, thematic classification, and normative interpretation. Data reduction was carried out by

selecting literature relevant to the topic of AI and Islamic Religious Education (PAI), then classifying it based on key issues, such as forms of utilization, opportunities, challenges, and implementation strategies. Each finding was analyzed using a conceptual triangulation approach to ensure the validity of ideas and coherence between sources. Interpretation was carried out by referring to classical and contemporary Islamic educational theories, as well as the ethical framework for the use of technology according to sharia principles and maqasid al-syari'ah. Thus, this method not only produces a description of the phenomenon of AI integration in Islamic Religious Education but also provides a strong normative basis for the development of a technology-based Islamic education paradigm. This approach allows research to proceed systematically, critically, and balanced, combining academic rationality and Islamic spiritual values as a moral foundation for the application of artificial intelligence in the educational realm.

RESULTS AND DISCUSSION

Forms of AI Utilization in Islamic Religious Education Learning

The use of AI as a learning assistant in the context of Islamic Religious Education (PAI) appears in the form of interactive services oriented towards dialogue and personalization. Da'wah chatbots or virtual tutors offer real-time responses to students' questions about sacred texts, worship practices, and religious ethics, enabling access to initial guidance when human resources (teachers/ustadz) are unavailable (Insana & Satriah, 2024) . At a conceptual level, this function does not simply replace teacher-student contact but rather expands the pedagogical network: the system provides concise explanations, presents primary references, and recommends further material based on the user's profile. A literature review comparing practices in several developing countries reveals a similar pattern: dialogic technology is positioned as an on-demand bridge for learners in remote areas, but its effectiveness depends on the quality of the theological corpus used to train the model and the human verification mechanisms that affirm religious authority.

AI for learning evaluation demonstrates the potential for transforming the assessment process in Islamic Religious Education (PAI) from a traditional approach to a more measurable and consistent one. Automated systems can correct reading exercises, evaluate multiple-choice answers to basic Islamic jurisprudence (fiqh), and even assess aspects of religious behavior through digital rubrics based on teacher observations or student self-reports. However, methodologically, assessing religious attitudes and spiritual dimensions requires interpretive guidelines that are not easily automated; algorithms need to be equipped with normative rules and qualitative validation to avoid reducing values to mere scores. Case studies in several Islamic educational institutions in South Asia and West Africa show that automated evaluation initiatives are often integrated into hybrid systems: AI handles quantification and administration, while teachers continue to conduct qualitative assessments and spiritual guidance interventions—a model that maintains a balance between efficiency and the humanistic dimension of Islamic Religious Education (PAI) learning (Prihatin & Sutangsa, 2025) .

Adaptive learning design and Islamic content production are areas where AI demonstrates the most clear technical and pedagogical synergy. Adaptive platforms map students' mastery levels, such as tajweed, basic tafsir, or moral concepts, and then adjust materials, exercises, and feedback accordingly; this is relevant for madrasah (Islamic boarding school) programs with diverse student abilities. On the content production side, AI-based text-to-speech (TTS) tools and translators facilitate cross-language access to

Islamic tafsir and materials, while interactive media generators help teachers create engaging multimedia modules (Sarif & Amran, 2024). Cases from developing countries demonstrate technical success at the prototype level, such as automated aggregation of Quranic recitations for recitation practice in remote areas, but also highlight the need for curation of authoritative sources to ensure that technological output does not deviate from recognized religious references.

Opportunities for Utilizing AI in Islamic Education

First, AI opens up significant opportunities to increase access to learning for communities that have been marginalized by limited educational infrastructure. AI-based platforms can provide Islamic Religious Education (PAI) learning modules that can be downloaded or accessed via simple cellular networks, allowing students in remote villages to access quality materials even without the physical presence of specialist teachers. In developing countries, such as Indonesia and Pakistan, where there is a shortage of Islamic Religious Education (PAI) teachers, digital solutions act as an educational "bridge": not a substitute for teachers but a medium for more equitable distribution of knowledge (Husna, 2024). Theoretically, this expanded access has implications for equalizing religious literacy and reducing the knowledge gap between urban and rural areas, provided there is serious attention to data access policies and user training.

Second, operational efficiency and personalized learning are practical benefits that can be leveraged to free up teachers' time to focus on spiritual development and moral formation. With AI managing administrative tasks such as correcting exercises, tracking attendance, and managing spiritual portfolios, teachers can allocate their energy to mentoring, ethical dialogue, and character building. In practice, several madrasah institutions in developing countries have reported reduced administrative burdens after adopting simple automation modules, thereby increasing the intensity of direct guidance. However, it is important to note that these efficiency gains are optimal when combined with a curriculum design that values face-to-face interaction as an irreplaceable element of tarbiyah (Islamic education).

Third, the use of AI can strengthen Islamic technological literacy and open up opportunities for constructive global collaboration. This literacy extends beyond technical skills to an ethical understanding of technology use in accordance with sharia principles, such as privacy regulations, fair access, and the validity of religious reference sources. AI platforms designed in collaboration with Islamic scholars and academics facilitate cross-cultural and cross-sectarian dialogue: multilingual exegesis materials, moderated discussion forums, and collaborative Islamic education research projects can reduce epistemic isolation. Examples of cross-border initiatives in several Islamic university networks demonstrate how digital learning modules enable a more rapid exchange of materials and perspectives, with the caveat that moderation and curation mechanisms must remain robust to prevent plurality from degenerating into theological relativism that confuses learners.

Challenges of Implementing AI in Islamic Education Learning

Ethical and theological issues are fundamental challenges in integrating AI into Islamic Religious Education (PAI). Islamic education has moral and spiritual dimensions that depend not only on the transfer of information but also on role models, habituation, and spiritual development—a role traditionally borne by teachers as *murabbi* (Tupamahu, 2025). Excessive reliance on AI has the potential to reduce personal contact that fosters emotional and spiritual intelligence. Therefore, the risk of dehumanization is not merely

a theoretical fantasy but a real one if human interaction is reduced to mere interaction with a machine. Many normative studies emphasize that AI should be positioned as a tool; best practice solutions in some developing country contexts suggest a hybrid model where AI provides technical support and teachers retain pedagogical and ethical control.

The second challenge concerns data and accuracy: AI is only as good as the data that trains it. In the religious realm, misinterpretation of texts or the use of non-authoritative references can produce misleading results. This becomes particularly sensitive when dealing with issues of Islamic jurisprudence (fiqh), tafsir, or fatwas, which require historical context and specialized scientific methodology. Cases in several developing countries illustrate this problematic situation: models trained on multilingual corpora without scholarly curation produced tafsir translations that lacked the nuances of legal principles. Therefore, the need for a verified reference corpus, a curatorial team involving Islamic scholars, and an algorithmic audit mechanism are integral to the implementation of AI in Islamic Religious Education.

The third challenge concerns teacher and student digital literacy and spiritual authenticity. Not all Islamic Religious Education (PAI) teachers have the technical capacity to productively utilize or critique AI output; this is where the need for ongoing training becomes crucial. Furthermore, learning that relies too heavily on machine instruction risks eroding the spiritual experiences that emerge from collective rituals, shared dhikr (remembrance of God), or intensive mentoring—elements that are difficult for algorithms to replicate. Implementation experiences in several communities in Southeast Asia and Africa indicate that the success of AI integration is higher when literacy programs incorporate ethical dimensions, as well as curriculum interventions that maintain ritual practices and teacher-student interactions as core elements of tarbiyah (Nasori, nd).

Mitigation Strategies and Solutions

First, developing institutional policies that emphasize AI's role as a *support system*, not a substitute for teachers, is a key preventative measure. Educational institutions and policymakers in developing countries need to formulate operational standards that define the limits of AI's role in Islamic education (PAI) learning processes, such as requiring human verification for any AI output that touches on fiqh (Islamic jurisprudence) or tafsir (Islamic interpretation) issues (Muthohar et al., 2025). Implementation of pilot projects combining AI with teacher supervision has demonstrated more sustainable results: AI accelerates material distribution, while teachers assess quality and contextualize values. This policy framework should include guidelines for curating religious data, regular algorithm audits, and transparency mechanisms that enable the educational community to assess the accuracy and impartiality of content.

Second, Islamic digital literacy training programs for teachers and students need to be designed as sustainable programs that combine technical skills, an understanding of sharia ethics, and critical thinking skills regarding technological products. Such training should be participatory, involving Islamic scholars (ulama), Islamic education (PAI) academics, technology developers, and education practitioners so that the material is not only technical but also normative. This approach has been implemented in several educational institutions in developing countries through blended learning modules, digital curatorial workshops, and technology ethics workshops; initial results indicate increased teacher capacity in evaluating and adapting AI tools to suit learning needs.

Third, collaboration between technology developers and religious authorities is a prerequisite for AI to align with sharia principles and the maqāsid al-shari'ah. This

collaboration includes the creation of a validated text corpus, the development of algorithms sensitive to linguistic context and schools of thought, and the establishment of a religious technology ethics council to provide guidelines for use (Arrofah, 2024) . Furthermore, the development of a digital Islamic Religious Education curriculum based on ethics and *critical thinking* must be a priority: teaching materials must instill textual analysis, moral reasoning, and spiritual reflection skills that enable students to use technology without losing the dimension of faith. In practice, the synergy between a robust curriculum, ongoing training, and transparent technology governance will create an Islamic Religious Education learning ecosystem that is adaptive, religiously valid, and effective for the realities of society in developing countries.

CONCLUSION

Based on the literature review discussed above, it can be concluded that the use of Artificial Intelligence (AI) in Islamic Religious Education (PAI) learning opens up significant opportunities for transforming Islamic education in the digital era. AI can act as a learning assistant, automated evaluator, adaptive learning designer, and even producer of interactive Islamic content, supporting the creation of a more personalized and effective learning experience. The implementation of this technology not only expands access to religious education but also increases efficiency and strengthens Islamic technological literacy, particularly in developing countries such as Indonesia, Pakistan, and Egypt, where Islamic education systems are still struggling to balance tradition with digital innovation.

However, the use of AI in Islamic education is not without complex challenges, both ethically, theologically, and technologically. Concerns about the dehumanization of education, the potential for misinterpretation of religious texts, low digital literacy among teachers and students, and the loss of spiritual values are crucial issues that need to be addressed. In this context, developing countries often face limited digital infrastructure and a lack of regulations regarding AI-based educational technology, which can hinder the equitable and high-quality implementation of intelligent learning systems.

As a mitigation measure, AI integration should be positioned as a *support system* for teachers, not as a replacement for their role as moral and spiritual educators (*murabbi*). Islamic education needs to adopt adaptive strategies, such as Islamic digital literacy training for educators, collaboration between technology developers and Islamic scholars, and the development of Islamic education curricula based on ethics and *critical thinking* . With this approach, AI can become a tool that aligns with sharia values and serves to strengthen, not replace, the essence of Islamic education itself: forming knowledgeable, faithful, and noble individuals amidst the currents of global digital disruption.

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