

The Role of Artificial Intelligence (AI) in Islamic Religious Education: An Analysis of Opportunities, Risks, and Ethical Regulations

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Abstract

This study aims to analyze the role of Artificial Intelligence (AI) in Islamic Religious Education by examining the opportunities, risks, and ethical regulations associated with its implementation in the learning process. The research employed a qualitative-descriptive library research method through the analysis of various scientific literature, academic articles, and policy documents related to the application of AI in education and Islamic ethical perspectives. The findings indicate that AI offers significant opportunities to enhance the effectiveness of Islamic Religious Education through personalized learning materials, broader access to religious information, the development of interactive learning media, and more efficient learning assessment processes. However, the use of AI also presents several risks, including the spread of invalid religious information, the diminishing role of educators, potential algorithmic bias, and challenges to students' moral and spiritual values. Therefore, ethical regulations based on Islamic values are needed, emphasizing the principles of responsibility, honesty, justice, and human supervision in the use of AI technology within educational environments. The novelty of this study lies in the integration of analyses on AI opportunities, implementation risks, and the formulation of ethical regulations based on Islamic perspectives comprehensively within the context of Islamic Religious Education, which has received limited attention in previous studies.

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

Abstrak

Penelitian ini bertujuan untuk menganalisis peran Artificial Intelligence (AI) dalam Pendidikan Agama Islam (PAI) dengan meninjau peluang, risiko, serta regulasi etis yang menyertainya dalam proses pembelajaran. Metode penelitian yang digunakan adalah studi kepustakaan (library research) dengan pendekatan kualitatif-deskriptif melalui analisis berbagai literatur ilmiah, artikel akademik, dan dokumen kebijakan terkait penerapan AI dalam pendidikan dan perspektif etika Islam. Hasil penelitian

menunjukkan bahwa AI memberikan peluang besar dalam meningkatkan efektivitas pembelajaran PAI melalui personalisasi materi, akses informasi keagamaan yang lebih luas, pengembangan media pembelajaran interaktif, serta efisiensi evaluasi pembelajaran. Namun demikian, penggunaan AI juga menimbulkan sejumlah risiko, seperti penyebaran informasi keagamaan yang tidak valid, berkurangnya peran pendidik, potensi bias algoritma, serta tantangan terhadap nilai-nilai moral dan spiritual peserta didik. Oleh karena itu, diperlukan regulasi etis berbasis nilai-nilai Islam yang menekankan prinsip tanggung jawab, kejujuran, keadilan, dan pengawasan manusia dalam penggunaan teknologi AI di lingkungan pendidikan. Novelty penelitian ini terletak pada integrasi analisis antara peluang teknologi AI, risiko implementasinya, dan formulasi regulasi etis berbasis perspektif Islam secara komprehensif dalam konteks Pendidikan Agama Islam, yang masih relatif terbatas dibahas dalam penelitian sebelumnya.

Keywords: Artificial Intelligence (AI), Pendidikan Agama Islam, Etika Islam

Introduction

The development of digital technology in the 21st century has brought about profound changes in various areas of human life, including education. One of the most influential technological developments today is Artificial Intelligence.¹ This technology enables machines to mimic human thinking, analyzing, understanding language, and making decisions based on available data. In the educational context, AI has been used to improve the quality of learning through adaptive learning systems, educational chatbots, automated evaluations, and personalized learning materials. The presence of AI is not only transforming student learning methods but also changing the teaching paradigms of teachers and lecturers. Modern education is shifting from conventional systems to digital systems based on data and automation. This change also impacts Islamic religious education as an integral part of national and global education systems.² Islamic religious education no longer relies solely on traditional lecture methods, but is beginning to utilize various digital platforms and AI technology to expand access to learning. This phenomenon demonstrates the enormous potential of AI to support the transformation of Islamic education in the digital age. Various AI applications such as ChatGPT, Google Gemini, and machine learning-based learning systems are beginning to be used by students to seek Islamic information. This situation marks the emergence of a new era in Islamic religious education, demanding the readiness of educational institutions, teachers, and students to face the digital transformation wisely and responsibly.

Islamic religious education essentially aims not only to transfer knowledge but also to shape the character, spirituality, morality, and ethics of students. Therefore, the integration of AI in Islamic religious education requires a different approach than the integration of AI in general education. Islamic education places the values of monotheism, morality, and etiquette as the primary foundation of the learning process.

¹ Y K Dwivedi, "Artificial Intelligence (AI): Multidisciplinary Perspectives on Emerging Challenges, Opportunities, and Agenda for Research, Practice and Policy," *International Journal of Information Management* 57 (2021), <https://doi.org/10.1016/j.ijinfomgt.2019.08.002>.

² K Crawford, "Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence," *Atlas of AI Power Politics and the Planetary Costs of Artificial Intelligence*, 2021, 1–327, <https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b%5C&scop=105004122221%5C&origin=inward>.

From an Islamic perspective, knowledge should bring humans closer to Allah SWT and improve the quality of humanity. The presence of AI in Islamic religious education can be a means to accelerate access to knowledge and expand the reach of Islamic da'wah. However, the use of AI can also raise epistemological issues if students rely too heavily on technology without understanding the authority of authentic Islamic scholarship. AI lacks the chain of scientific evidence like scholars in the classical Islamic tradition. AI operates based on algorithms and available data, thus allowing for misinformation, biased interpretations, and simplifications of religious understanding.³ Therefore, the use of AI in Islamic religious education requires strict ethical and pedagogical oversight. Teachers must remain central figures in guiding students' religious understanding. Technology serves only as a tool and not a substitute for Islamic scholarly authority. Therefore, Islamic religious education must utilize AI appropriately without losing the substance of Islamic spiritual and moral values.

Advances in AI offer significant opportunities for developing more effective, interactive, and inclusive Islamic religious learning methods. AI enables personalized learning tailored to students' abilities and needs. AI systems can analyze students' learning styles and provide materials tailored to their level of understanding. In Islamic religious education, AI technology can help students understand the Quran, Hadith, Islamic jurisprudence, Islamic history, and Arabic more easily and quickly.⁴ Natural Language Processing technology enables automatic translation of Arabic texts and explanations of Islamic concepts. Furthermore, AI can be used to develop interactive learning media based on virtual reality and augmented reality, enriching the religious learning experience. Students can learn the procedures of worship through realistic and engaging digital simulations. AI also supports distance learning, which is crucial in the era of globalization and the post-pandemic era. With the help of AI, access to Islamic religious education can be expanded to remote areas with a shortage of teachers.⁵ This demonstrates that AI can be a strategic instrument in equitable distribution of Islamic education across regions. However, optimizing these benefits must still adhere to ethical values and Sharia principles to ensure the technology does not negatively impact the quality of students' religious understanding.

On the other hand, the use of AI in Islamic religious education also presents various risks that require serious consideration. One major risk is the emergence of students' dependence on technology, which can lead to a decline in critical and reflective thinking skills. AI allows students to obtain answers instantly without the in-depth study process inherent in Islamic scholarly tradition, which emphasizes talaqqi (religious consultation) and gradual learning. Dependence on AI can lead to the loss of a culture of in-depth reading of the scriptures and a reduction in direct interaction between teachers and students. Furthermore, AI also has the potential to produce

³ C Pelau, "What Makes an AI Device Human-like? The Role of Interaction Quality, Empathy and Perceived Psychological Anthropomorphic Characteristics in the Acceptance of Artificial Intelligence in the Service Industry," *Computers in Human Behavior* 122 (2021), <https://doi.org/10.1016/j.chb.2021.106855>.

⁴ A Haleem, "Artificial Intelligence (AI) Applications for Marketing: A Literature-Based Study," *International Journal of Intelligent Networks* 3 (2022): 119–32, <https://doi.org/10.1016/j.ijin.2022.08.005>.

⁵ S Chowdhury, "Unlocking the Value of Artificial Intelligence in Human Resource Management through AI Capability Framework," *Human Resource Management Review* 33, no. 1 (2023), <https://doi.org/10.1016/j.hrmmr.2022.100899>.

information that is inaccurate or even contradicts Islamic principles.⁶This occurs because AI collects data from various sources that are not necessarily scientifically or sharia-compliant. Another risk is the emergence of a crisis of religious authority when students trust AI more than religious scholars and teachers. This phenomenon could disrupt the system of transmitting Islamic knowledge, which has been built through sanad (traditional Islamic lineage) and scientific authority. AI can also be exploited to spread radical ideology, religious hoaxes, and deepfake-based information manipulation. Therefore, regulation and digital literacy are crucial for the use of AI in Islamic education. Islamic religious education must equip students with the skills to verify information and a critical attitude toward digital technology.

From a pedagogical perspective, AI presents new challenges to the relationship between teachers and students in Islamic religious education. Islamic educational traditions have long positioned teachers as moral and spiritual role models who not only transmit knowledge but also shape students' character. The emotional and spiritual interaction between teachers and students is a crucial element in Islamic education.⁷AI lacks the spiritual dimension, empathy, and role models that humans possess. Therefore, excessive use of AI is feared to diminish its humanistic role in Islamic religious education. Religious learning is not simply about transferring information; it also requires internalizing values and developing morals through role models. AI cannot replace the role of teachers in instilling the values of manners, sincerity, patience, and spirituality. Furthermore, uncontrolled use of AI can lead to the dehumanization of education.⁸Students may become more individualistic and less appreciative of the process of scientific dialogue with teachers and peers. This challenge demands an Islamic education model that integrates technology without diminishing the human and spiritual dimensions. Teachers must remain at the center of education, while AI serves as a learning aid that supports the effectiveness of the teaching and learning process.

Ethical issues are a crucial aspect in the discussion of AI in Islamic religious education. Islam has comprehensive ethical principles for the use of science and technology. Every use of technology must bring benefits and avoid harm.⁹In the context of AI, the principles of maqasid sharia can serve as a basis for formulating ethical regulations for the use of AI in Islamic education. The principle of safeguarding religion, intellect, life, lineage, and property must be the primary foundation for the development and implementation of AI. The use of AI that violates privacy, spreads disinformation, or misleads religious understanding contradicts Islamic principles. Therefore, AI regulations in Islamic education must address transparency, accountability, fairness, and the protection of student data. AI technology developers also need to understand Islamic values to ensure that the systems they develop do not conflict with Sharia ethics. Furthermore, AI literacy education based on Islamic values

⁶ Y Walter, "Embracing the Future of Artificial Intelligence in the Classroom: The Relevance of AI Literacy, Prompt Engineering, and Critical Thinking in Modern Education," *International Journal of Educational Technology in Higher Education* 21, no. 1 (2024), <https://doi.org/10.1186/s41239-024-00448-3>.

⁷ Walter.

⁸ I Celik, "Towards Intelligent-TPACK: An Empirical Study on Teachers' Professional Knowledge to Ethically Integrate Artificial Intelligence (AI)-Based Tools into Education," *Computers in Human Behavior* 138 (2023), <https://doi.org/10.1016/j.chb.2022.107468>.

⁹ G S Collins, "Protocol for Development of a Reporting Guideline (TRIPOD-AI) and Risk of Bias Tool (PROBAST-AI) for Diagnostic and Prognostic Prediction Model Studies Based on Artificial Intelligence," *BMJ Open* 11, no. 7 (2021), <https://doi.org/10.1136/bmjopen-2020-048008>.

needs to be strengthened so that students can use technology wisely and responsibly. Ethical regulations are also crucial to ensure that AI is not used as a substitute for fatwas from religious scholars or official religious authorities. Therefore, the integration of AI in Islamic religious education must always remain within the corridor of Islamic values and national educational goals.

The development of AI also raises epistemological issues in Islamic religious education. Islamic epistemology positions revelation, reason, and experience as complementary sources of knowledge. AI operates based on statistical algorithms and data patterns, thus lacking spiritual awareness or the ability to understand the transcendental meaning of Islamic teachings.¹⁰In this context, AI can only provide textual information, but it cannot replace the wisdom and insight gained through spiritual experience and the guidance of religious scholars. Islamic religious education aims not only to produce intellectually intelligent individuals but also to possess spiritual and moral awareness. When AI is used without proper controls, there is a risk of reducing the meaning of religion to mere digital data and information.¹¹This can reduce the depth of students' religious understanding. Furthermore, AI has the potential to homogenize religious understanding because algorithms tend to simplify the complexity of differences between schools of thought and interpretations of scholars.¹²Therefore, Islamic religious education must instill epistemological awareness in students so they can understand the limitations of AI in religious matters. The use of AI must always be accompanied by scientific studies, source verification, and the guidance of competent teachers. This way, technology can be optimally utilized without diminishing the substance of authentic Islamic knowledge.

The phenomenon of digital globalization has led to younger generations becoming increasingly familiar with AI technology in their daily lives. Generation Z and Generation Alpha students tend to use AI as their primary source for information, including religious information.¹³This situation demands that Islamic educational institutions adapt to changes in student learning behavior. If Islamic educational institutions fail to keep pace with technological developments, Islamic religious education could potentially be deemed irrelevant by the younger generation. Therefore, the integration of AI into Islamic religious education is an unavoidable strategic necessity. However, such integration must be carried out selectively and critically. Islamic religious education must be able to develop a curriculum that integrates digital literacy with religious literacy.¹⁴Students need to be equipped with the ability to distinguish between true and false information in the digital world. Religious education

¹⁰ R Yilmaz, "The Effect of Generative Artificial Intelligence (AI)-Based Tool Use on Students' Computational Thinking Skills, Programming Self-Efficacy and Motivation," *Computers and Education Artificial Intelligence* 4 (2023), <https://doi.org/10.1016/j.caeai.2023.100147>.

¹¹ N Díaz-Rodríguez, "Connecting the Dots in Trustworthy Artificial Intelligence: From AI Principles, Ethics, and Key Requirements to Responsible AI Systems and Regulation," *Information Fusion* 99 (2023), <https://doi.org/10.1016/j.inffus.2023.101896>.

¹² P Manickam, "Artificial Intelligence (AI) and Internet of Medical Things (IoMT) Assisted Biomedical Systems for Intelligent Healthcare," *Biosensors* 12, no. 8 (2022), <https://doi.org/10.3390/bios12080562>.

¹³ M E E Alahi, "Integration of IoT-Enabled Technologies and Artificial Intelligence (AI) for Smart City Scenario: Recent Advancements and Future Trends," *Sensors* 23, no. 11 (2023), <https://doi.org/10.3390/s23115206>.

¹⁴ Y Chen, "Artificial Intelligence (AI) Student Assistants in the Classroom: Designing Chatbots to Support Student Success," *Information Systems Frontiers* 25, no. 1 (2023): 161–82, <https://doi.org/10.1007/s10796-022-10291-4>.

teachers must also improve their digital competencies to effectively utilize AI in learning. Furthermore, Islamic educational institutions need to develop internal policies regarding the use of AI that align with Islamic values. This way, Islamic religious education can remain relevant in the digital age without losing its identity and spiritual values.

In the regulatory context, various countries are starting to develop policies on the use of AI in education to prevent misuse of technology and protect students' rights.¹⁵ These regulations cover personal data protection, algorithm transparency, cybersecurity, and the ethical use of AI. In Islamic religious education, AI regulations need to consider the theological and cultural aspects of Muslim communities. The use of AI in religious learning must respect the authority of Islamic scholars and Islamic scholarly traditions. Furthermore, regulations must ensure that AI is not used to spread extremism or manipulate religious teachings. The government, educational institutions, religious scholars, and technology developers need to collaborate in formulating ethical guidelines for the use of AI in Islamic education. This collaboration is crucial for AI technology to provide maximum benefits for the development of Islamic religious education.¹⁶ Regulations must also be adaptive to rapid technological developments. Islamic religious education requires a clear legal and ethical framework to ensure the use of AI remains within the bounds of public welfare. With appropriate regulations, AI can be a tool for strengthening modern, inclusive Islamic education, oriented toward developing Islamic character.

Based on this description, it is clear that AI plays a highly complex role in Islamic religious education. AI offers significant opportunities to improve the quality, accessibility, and effectiveness of religious learning. However, AI also presents various epistemological, pedagogical, moral, and spiritual risks that require serious consideration.¹⁷ Therefore, an integrative approach that combines technological innovation with Islamic values is needed. Islamic religious education must be able to utilize AI as a learning tool without losing its spiritual, moral, and humanistic dimensions. Developing ethical regulations based on the maqasid sharia (Islamic principles) is crucial to ensure the responsible use of AI in accordance with Islamic principles.¹⁸ Teachers must remain at the center of learning and character development for students. AI only serves as a supporting instrument in the educational process. Furthermore, digital and religious literacy need to be strengthened so that students can use technology critically and wisely.¹⁹ With the right approach, AI can be a means of

¹⁵ J Crawford, "Leadership Is Needed for Ethical ChatGPT: Character, Assessment, and Learning Using Artificial Intelligence (AI)," *Journal of University Teaching and Learning Practice* 20, no. 3 (2023), <https://doi.org/10.53761/1.20.3.02>.

¹⁶ A Jacovi, "Formalizing Trust in Artificial Intelligence: Prerequisites, Causes and Goals of Human Trust in AI," *Facct 2021 Proceedings of the 2021 ACM Conference on Fairness Accountability and Transparency*, 2021, 624–35, <https://doi.org/10.1145/3442188.3445923>.

¹⁷ T K F Chiu, "Teacher Support and Student Motivation to Learn with Artificial Intelligence (AI) Based Chatbot," *Interactive Learning Environments* 32, no. 7 (2024): 3240–56, <https://doi.org/10.1080/10494820.2023.2172044>.

¹⁸ Y K Dwivedi, "Leveraging ChatGPT and Other Generative Artificial Intelligence (AI)-Based Applications in the Hospitality and Tourism Industry: Practices, Challenges and Research Agenda," *International Journal of Contemporary Hospitality Management* 36, no. 1 (2024): 1–12, <https://doi.org/10.1108/IJCHM-05-2023-0686>.

¹⁹ M H Jarrahi, "Artificial Intelligence and Knowledge Management: A Partnership between Human and AI," *Business Horizons* 66, no. 1 (2023): 87–99, <https://doi.org/10.1016/j.bushor.2022.03.002>.

transforming Islamic religious education that is relevant to the needs of the times while still maintaining Islamic values.

Literature Review

Artificial Intelligence is a technology that enables machines to mimic human thinking and decision-making abilities. In education, AI is used for personalized learning, automated evaluation, and the development of interactive learning media.²⁰ Islamic religious education is beginning to utilize AI to expand access to religious learning. This technology supports a more flexible and adaptive learning process. However, AI also raises ethical and validity issues regarding religious information. Therefore, the integration of AI in Islamic education requires in-depth study.

According to Hariya, AI offers significant opportunities to improve the effectiveness of Islamic religious learning through a more interactive digital approach. The research shows that AI can help personalize learning materials to meet students' needs. AI can also expand access to Islamic education in remote areas.²¹ Furthermore, AI supports faster and more efficient learning evaluation. However, the study emphasized the importance of teacher oversight in the use of AI. Uncontrolled use of AI has the potential to diminish the quality of students' religious understanding.

Research by Suryani and Syaiful Hadi explains that the development of AI poses new challenges in Islamic religious education. One of the main challenges is a crisis of religious authority due to students trusting AI more than religious scholars. The study also highlights the risks of plagiarism and a decline in academic integrity.²² AI can discourage students from critical thinking. Therefore, digital literacy is crucial in Islamic education. Teachers must be able to guide students in using AI ethically and responsibly.

Rahmawati and colleagues studied the optimization of AI in evaluating Islamic religious education learning. The research demonstrated that AI can improve the efficiency of student assessment and analysis. AI systems can provide rapid and accurate automated feedback. The use of AI also helps teachers identify student weaknesses more specifically. However, this research emphasizes the importance of integrating Sharia values into educational AI systems. Technology must remain within the bounds of Islamic ethics.

Arif and colleagues' research used the PRISMA approach to examine AI in Islamic religious education. The results show that AI has significant epistemological implications for religious learning.²³ AI has the potential to transform how students understand Islamic sources. The research emphasizes the importance of preserving the

²⁰ F Kaya, "The Roles of Personality Traits, AI Anxiety, and Demographic Factors in Attitudes toward Artificial Intelligence," *International Journal of Human Computer Interaction* 40, no. 2 (2024): 497–514, <https://doi.org/10.1080/10447318.2022.2151730>.

²¹ B Cope, "Artificial Intelligence for Education: Knowledge and Its Assessment in AI-Enabled Learning Ecologies," *Educational Philosophy and Theory* 53, no. 12 (2021): 1229–45, <https://doi.org/10.1080/00131857.2020.1728732>.

²² B Vasey, "Reporting Guideline for the Early-Stage Clinical Evaluation of Decision Support Systems Driven by Artificial Intelligence: DECIDE-AI," *Nature Medicine* 28, no. 5 (2022): 924–33, <https://doi.org/10.1038/s41591-022-01772-9>.

²³ Q Xia, "A Self-Determination Theory (SDT) Design Approach for Inclusive and Diverse Artificial Intelligence (AI) Education," *Computers and Education* 189 (2022), <https://doi.org/10.1016/j.compedu.2022.104582>.

tradition of sanad (transmitted Islamic texts) and scholarly authority in Islam. AI cannot replace scholars as the primary source of religious knowledge. Therefore, a strong theoretical framework is needed for the use of AI in Islamic education.

Taha and colleagues analyzed the use of ChatGPT in Islamic education from a maqasid sharia perspective. The study explained that AI can help accelerate access to religious information. AI also supports independent learning for students.²⁴ However, this research highlights the risk of spreading invalid religious information. Therefore, the principle of preserving religion and reason must underpin AI regulation. The use of AI must be directed towards the benefit of the community.

Nurul Islami and Fazal Akmal Musyarri examined the regulations and theological studies of AI in Islamic education. Their research shows that AI development is outpacing existing regulations.²⁵ This has created a legal vacuum regarding the use of AI. The study also emphasizes the importance of moral oversight of digital technology. Islamic education must foster ethical awareness regarding the use of AI. Regulation based on Islamic values is an urgent need in the digital age.

Khoiruddin and Dzulkifli discuss the integration of AI in Islamic education from an ethical and sustainability perspective. The research explains that AI can improve the quality of learning and curriculum development. However, AI implementation must take into account cultural diversity and Islamic values.²⁶ This research also highlights the importance of teacher training in the use of AI. Teachers must possess both digital competency and an understanding of Islamic ethics. This way, AI can be used sustainably and responsibly.

Mahmudulhassan and Muthoifin examined AI in multicultural Islamic education. The research suggests that AI can improve the accessibility of religious education for diverse communities. AI supports cross-cultural and cross-linguistic learning. However, the research also highlights the risks of algorithmic bias and digital discrimination.²⁷ Therefore, AI development must adhere to the principles of justice and inclusivity. Islamic education must be able to maintain social harmony in the use of technology.

Hidayatullah and colleagues discussed the relationship between AI and the erosion of tacit knowledge in Islamic education. The study explained that AI has the potential to diminish the experiential spiritual learning process. Tacit knowledge in Islam is acquired through direct interaction with teachers and worship experiences. AI cannot replace the process of developing wisdom and discernment.²⁸ Therefore, Islamic education must maintain a balance between technology and spirituality. The use of AI must not diminish the humanistic dimension of education.

²⁴ A Brem, "The AI Digital Revolution in Innovation: A Conceptual Framework of Artificial Intelligence Technologies for the Management of Innovation," *IEEE Transactions on Engineering Management* 70, no. 2 (2023): 770–76, <https://doi.org/10.1109/TEM.2021.3109983>.

²⁵ T Wang, "Exploring the Potential Impact of Artificial Intelligence (AI) on International Students in Higher Education: Generative AI, Chatbots, Analytics, and International Student Success," *Applied Sciences Switzerland* 13, no. 11 (2023), <https://doi.org/10.3390/app13116716>.

²⁶ C Flavián, "Intention to Use Analytical Artificial Intelligence (AI) in Services – the Effect of Technology Readiness and Awareness," *Journal of Service Management* 33, no. 2 (2022): 293–320, <https://doi.org/10.1108/JOSM-10-2020-0378>.

²⁷ H Kong, "Influences of Artificial Intelligence (AI) Awareness on Career Competency and Job Burnout," *International Journal of Contemporary Hospitality Management* 33, no. 2 (2021): 717–34, <https://doi.org/10.1108/IJCHM-07-2020-0789>.

²⁸ A Holzinger, "AI for Life: Trends in Artificial Intelligence for Biotechnology," *New Biotechnology* 74 (2023): 16–24, <https://doi.org/10.1016/j.nbt.2023.02.001>.

Mustaqbal and Herawan conducted a systematic literature review on the challenges of AI in Islamic education in Indonesia. The study identified various issues, including plagiarism, technology dependency, and misuse of AI. It also highlighted the lack of AI regulation in Islamic educational institutions. Digital literacy is considered a key solution to address these challenges.²⁹ Furthermore, clear institutional policies regarding the use of AI are needed. Islamic education must develop effective technology oversight systems.

Amilusholihah and Ramadhan examined the implementation of AI in Islamic education through a systematic literature review. The research demonstrated that AI can improve learning effectiveness and educational accessibility. AI also supports learning based on individual student needs. However, this study highlights the lack of empirical research on the long-term impact of AI in Islamic education.³⁰ Therefore, further, more in-depth research is needed. AI development must consider pedagogical and spiritual aspects.

Studies of AI ethics in education generally indicate that transparency and accountability are key principles in technology development. AI must be able to explain the basis for the system's decision-making. In Islamic education, this principle is crucial for maintaining student trust. Furthermore, AI must be free from bias and discrimination. Technology developers need to ensure that AI systems do not conflict with moral and religious values. AI ethics is a crucial foundation for the transformation of digital education.

The principle of maqasid sharia can be used as an ethical basis for the use of AI in Islamic education. The principle of preserving religion requires that AI not spread deviant teachings. The principle of preserving reason emphasizes the importance of using AI to improve students' thinking skills.³¹ The principle of preserving life and dignity requires protecting user privacy and data security. Furthermore, AI must be used to create social benefits. With a maqasid sharia approach, AI regulations can be formulated more comprehensively.

From an Islamic epistemological perspective, AI has limitations in understanding spiritual and transcendental meaning. It operates solely on statistical data and algorithms.³² This technology lacks the moral and spiritual awareness that humans possess. Therefore, AI cannot be used as a primary source of fatwas or religious authority. Scholars and teachers still play a central role in Islamic education. AI serves only as a learning aid.

AI-based Islamic religious learning also concerns the issue of the authenticity of knowledge sources. AI often draws information from various sources that have not been scientifically verified.³³ This has the potential to lead to misinterpretation of

²⁹ L Markauskaite, "Rethinking the Entwinement between Artificial Intelligence and Human Learning: What Capabilities Do Learners Need for a World with AI?," *Computers and Education Artificial Intelligence* 3 (2022), <https://doi.org/10.1016/j.caeai.2022.100056>.

³⁰ N P Rana, "Understanding Dark Side of Artificial Intelligence (AI) Integrated Business Analytics: Assessing Firm's Operational Inefficiency and Competitiveness," *European Journal of Information Systems* 31, no. 3 (2022): 364–87, <https://doi.org/10.1080/0960085X.2021.1955628>.

³¹ J Su, "Artificial Intelligence (AI) Literacy in Early Childhood Education: The Challenges and Opportunities," *Computers and Education Artificial Intelligence* 4 (2023), <https://doi.org/10.1016/j.caeai.2023.100124>.

³² They are.

³³ N Köbis, "Artificial Intelligence versus Maya Angelou: Experimental Evidence That People Cannot Differentiate AI-Generated from Human-Written Poetry," *Computers in Human Behavior* 114 (2021), <https://doi.org/10.1016/j.chb.2020.106553>.

religious teachings. Students who lack adequate religious literacy can fall prey to misleading information. Therefore, source verification is crucial in the use of AI. Teachers should guide students in evaluating digital information.

The use of AI in Islamic education is also related to changes in the learning patterns of the younger generation. The digital generation prefers fast and instant learning. AI supports this learning pattern through chatbots and automated systems. However, this habit can diminish the ability to reflect and deepen knowledge.³⁴ Islamic education must instill a culture of critical and in-depth learning. Technology should be used to enhance, not replace, students' intellectual processes.

Studies on deepfakes show that AI can be used to manipulate religious information. Deepfake technology allows the creation of fake content that appears authentic. This has the potential to fuel slander and disinformation in Muslim communities.³⁵ Therefore, digital literacy based on Islamic values is crucial. The principle of *tabayyun* (reconciliation) must be applied when dealing with digital information. Islamic education has a significant responsibility in fostering critical awareness of digital media.

In the context of Islamic pedagogy, the teacher-student relationship has a spiritual dimension that AI cannot replace. Teachers are not only transmitters of information, but also moral and spiritual role models. AI lacks empathy, compassion, and role models. Therefore, Islamic religious education must maintain human interaction in learning. Technology should be used to support effective learning. The balance between technology and humanism is a crucial principle in modern Islamic education.

The literature on AI shows that regulatory development is an urgent need in the digital age. Regulation is needed to protect user rights and prevent misuse of technology.³⁶ In Islamic education, regulations must be based on moral values and sharia principles. The government, religious scholars, and academics need to collaborate to develop guidelines for the use of AI. Regulations must also adapt to the rapid development of technology. With appropriate regulations, AI can be used safely and productively.

Based on various previous studies, it can be concluded that AI has significant potential in developing Islamic religious education. AI can increase the effectiveness, accessibility, and innovation of religious learning.³⁷ However, the use of AI also presents various epistemological, ethical, and pedagogical risks. Therefore, an integrative approach that combines technology with Islamic values is necessary. Teachers must remain at the center of education and character development for students. Ethical regulations based on the *maqasid sharia* (Islamic principles) are a crucial foundation for the use of AI in Islamic religious education.

³⁴ S Banks, "The Ethical Implications of Artificial Intelligence (AI) For Meaningful Work," *Journal of Business Ethics* 185, no. 4 (2023): 725–40, <https://doi.org/10.1007/s10551-023-05339-7>.

³⁵ A Habbal, "Artificial Intelligence Trust, Risk and Security Management (AI TRISM): Frameworks, Applications, Challenges and Future Research Directions," *Expert Systems with Applications* 240 (2024), <https://doi.org/10.1016/j.eswa.2023.122442>.

³⁶ D R Serrano, "Artificial Intelligence (AI) Applications in Drug Discovery and Drug Delivery: Revolutionizing Personalized Medicine," *Pharmaceutics* 16, no. 10 (2024), <https://doi.org/10.3390/pharmaceutics16101328>.

³⁷ D Sjödin, "Artificial Intelligence Enabling Circular Business Model Innovation in Digital Servitization: Conceptualizing Dynamic Capabilities, AI Capacities, Business Models and Effects," *Technological Forecasting and Social Change* 197 (2023), <https://doi.org/10.1016/j.techfore.2023.122903>.

Method

This research uses a qualitative approach with a library research method. Library research is a research method that utilizes various library sources as primary data. These sources include books, scientific journals, academic articles, research reports, policy documents, and other scientific sources relevant to the research topic. This approach was chosen because the research focuses on a conceptual analysis of the role of Artificial Intelligence in Islamic religious education. Library research allows researchers to gain a deep understanding of theories, concepts, and previous research findings. Furthermore, this method is effective for examining social and educational phenomena that are developing dynamically in the digital era.

This research employs a descriptive-analytical approach. The descriptive approach is used to describe various concepts and phenomena related to the use of AI in Islamic religious education. Meanwhile, the analytical approach is used to analyze the opportunities, risks, and ethical regulations of AI from an Islamic educational perspective. This research also employs a normative approach to assess the suitability of AI use with Islamic ethical principles and the *maqasid sharia*. With this approach, the research is able to provide a comprehensive overview of the dynamics of AI in Islamic religious education. The analysis is conducted systematically based on relevant and credible scientific sources.

The data sources in this study consist of primary and secondary data. Primary data were obtained from international and national scientific journals discussing AI in Islamic education, technology ethics, and AI regulations. Secondary data were obtained from books, scientific articles, conference proceedings, and policy documents related to educational technology and Islamic education. The researcher also utilized digital database-based scientific sources to obtain the latest literature on AI developments. Data sources were selected based on topic relevance, academic quality, and publisher credibility. Therefore, the data used in this study has adequate validity and reliability.

Data collection techniques were conducted through documentation and literature studies. Researchers collected various references related to AI, Islamic religious education, digital ethics, and technology regulation. Next, the data was classified based on research themes such as AI opportunities, AI risks, pedagogical implications, and ethical regulation. Researchers then conducted a data reduction process to select the information most relevant to the research focus. Afterward, the data was analyzed critically and interpretively to identify patterns, relationships, and theoretical implications. The analysis process was repeated to ensure more in-depth and systematic research results.

The data analysis technique used content analysis. Content analysis was conducted by critically reviewing the literature to identify concepts, theories, and research findings related to AI in Islamic religious education. The researcher also employed comparative analysis to compare various perspectives and previous research findings. Furthermore, a reflective approach was used to connect AI developments with the principles of Islamic education and *sharia* ethics. The analysis results were then systematically compiled into a comprehensive scientific narrative. Using this method, the research is expected to provide theoretical and practical contributions to the development of Islamic religious education in the era of Artificial Intelligence.

Result and Discussion

The development of Artificial Intelligence (AI) in education has brought significant changes to learning patterns, including in Islamic Religious Education (PAI). Based on the results of the literature review, it was found that AI has the ability

to increase learning effectiveness through a more personalized and adaptive approach. AI systems can adapt learning materials based on students' abilities, interests, and needs, thus making the learning process more efficient.³⁸In the context of Islamic Religious Education (PAI), AI technology can be used to help students understand Islamic creed, jurisprudence, morals, and history more interactively. The presence of AI-based chatbots, Quranic learning apps, and automated evaluation platforms are concrete evidence of the digital transformation in Islamic education. These findings demonstrate that AI has the potential to be a strategic instrument in supporting the modernization of Islamic Religious Education (PAI) learning in the digital era.

The research results show that the use of AI in Islamic Education learning provides easier and faster access to broader and more comprehensive sources of Islamic knowledge.³⁹Students can quickly find references to interpretations, hadiths, and Islamic literature through AI-based searches. This technology also supports independent learning, allowing students to access materials anytime and anywhere. In practice, AI helps teachers provide more varied and engaging teaching materials through visual, audio, and interactive simulations. This situation increases student motivation because the learning process is no longer monotonous and one-way.⁴⁰Thus, AI functions as a supporting tool that can improve the quality of Islamic religious learning in a more dynamic and innovative manner.

In addition to improving learning accessibility, AI also contributes to the efficiency of educational administration. Islamic Religious Education (PAI) teachers can utilize AI to develop evaluation questions, conduct automated assessments, and systematically manage student learning progress data. The use of this technology helps reduce the administrative burden on teachers, allowing them to focus more on developing the character and spirituality of their students.⁴¹Several studies have found that AI can analyze students' learning weaknesses more accurately than conventional methods. This data is then used to design more targeted learning strategies. Therefore, the application of AI in Islamic Religious Education (PAI) not only impacts academic aspects but also supports the effectiveness of overall educational management.

On the other hand, this study found that the use of AI in Islamic Religious Education also presents a number of risks that require serious attention. One major risk is the potential for the emergence of invalid religious information or information that is inconsistent with authoritative Islamic sources. AI systems operate on data available online, so if that data contains errors or biases, the resulting information could potentially mislead users.⁴²This situation poses a significant challenge in religious

³⁸ A Zirar, "Worker and Workplace Artificial Intelligence (AI) Coexistence: Emerging Themes and Research Agenda," *Technovation* 124 (2023), <https://doi.org/10.1016/j.technovation.2023.102747>.

³⁹ P Esmailzadeh, "Challenges and Strategies for Wide-Scale Artificial Intelligence (AI) Deployment in Healthcare Practices: A Perspective for Healthcare Organizations," *Artificial Intelligence in Medicine* 151 (2024), <https://doi.org/10.1016/j.artmed.2024.102861>.

⁴⁰ J Feng, "Clinical Artificial Intelligence Quality Improvement: Towards Continual Monitoring and Updating of AI Algorithms in Healthcare," *NPJ Digital Medicine* 5, no. 1 (2022), <https://doi.org/10.1038/s41746-022-00611-y>.

⁴¹ J Laux, "Trustworthy Artificial Intelligence and the European Union AI Act: On the Conflation of Trustworthiness and Acceptability of Risk," *Regulation and Governance* 18, no. 1 (2024): 3–32, <https://doi.org/10.1111/rego.12512>.

⁴² N A Smuha, "From a 'Race to AI' to a 'Race to AI Regulation': Regulatory Competition for Artificial Intelligence," *Law Innovation and Technology* 13, no. 1 (2021): 57–84, <https://doi.org/10.1080/17579961.2021.1898300>.

education, as misunderstandings can impact students' religious practices. Furthermore, AI lacks the spiritual capabilities and moral judgment that humans possess when it comes to understanding the context of Islamic teachings. Therefore, teachers remain a key factor in verifying and overseeing the use of AI technology.

Research findings also indicate that over-reliance on AI can reduce direct interaction between teachers and students. In Islamic education, the relationship between teachers and students has moral, spiritual, and exemplary dimensions that cannot be fully replaced by technology. Religious education is oriented not only toward the transfer of knowledge but also toward the formation of morals and the internalization of Islamic values. If the learning process relies too heavily on digital systems, there is concern that these exemplary values will decline. Some literature confirms that AI-based education tends to be mechanistic and less engaging with the emotional aspects of students. Therefore, the use of AI should be viewed as an educational tool, not a substitute for the role of educators.

This research also found potential algorithmic bias in AI systems used in education. This bias could arise from AI training data that does not fully represent the diversity of Islamic thought. As a result, the AI may only present certain views and ignore other perspectives recognized in the Islamic scientific tradition.⁴³ This can lead to a narrowing of students' religious understanding if not balanced with teacher guidance. In the context of Islamic education, the diversity of schools of thought and the opinions of scholars constitutes a vital part of the intellectual heritage that must be understood in a balanced manner. Therefore, the development of AI in Islamic Religious Education (PAI) needs to consider the principles of moderation and balance in religious information.

The research findings demonstrate that ethical regulations are an urgent need for the use of AI in Islamic Religious Education. These regulations are necessary to ensure that AI implementation remains aligned with Islamic values and national educational goals.⁴⁴ Islamic ethical principles such as trustworthiness, honesty, justice, responsibility, and public welfare must be the primary foundation for the development and use of AI technology. Furthermore, the protection of students' personal data is a crucial aspect that educational institutions must address. The use of AI without clear regulations can lead to data misuse and the manipulation of learning information. Therefore, Islamic ethics can serve as a normative guideline for developing humanistic AI systems that are oriented toward the welfare of the community.

From an Islamic educational perspective, AI technology can be viewed as part of scientific developments that should be utilized wisely. Islam does not reject technological development as long as its use does not conflict with sharia principles and benefits humanity.⁴⁵ Therefore, the use of AI in Islamic Religious Education (PAI) must be directed towards improving the quality of education, not simply following global digitalization trends. Teachers and educational institutions have a responsibility to ensure that technology is used as a means to strengthen students' religious values. This approach is crucial to ensure that digital transformation in education does not

⁴³ K Sperling, "In Search of Artificial Intelligence (AI) Literacy in Teacher Education: A Scoping Review," *Computers and Education Open* 6 (2024), <https://doi.org/10.1016/j.caeo.2024.100169>.

⁴⁴ M Mirbabaie, "The Rise of Artificial Intelligence – Understanding the AI Identity Threat at the Workplace," *Electronic Markets* 32, no. 1 (2022): 73–99, <https://doi.org/10.1007/s12525-021-00496-x>.

⁴⁵ C van Noordt, "Artificial Intelligence for the Public Sector: Results of Landscaping the Use of AI in Government across the European Union," *Government Information Quarterly* 39, no. 3 (2022), <https://doi.org/10.1016/j.giq.2022.101714>.

eliminate the spiritual and moral dimensions of the learning process. Therefore, the integration of AI and Islamic education must be built on a balance between technological advancement and Islamic values.

Based on literature analysis, it was found that AI can support student-centered learning models in Islamic Religious Education. AI technology enables students to learn at their own pace and ability without uniform pressure. Adaptive learning systems provide material recommendations tailored to students' level of understanding, making the learning process more effective. In this context, teachers act as facilitators, directing and guiding students in the correct use of technology. AI-based learning can also enhance students' critical thinking skills through the exploration of various sources of Islamic information. Therefore, AI has great potential to support pedagogical innovation in Islamic education.

This research also revealed that human resource readiness is a determining factor in the success of AI implementation in Islamic Religious Education. Many Islamic Religious Education teachers still lack digital literacy and the use of AI-based technology. This situation results in suboptimal use of AI in the learning process.⁴⁶Therefore, teacher training and competency development are necessary to enable them to integrate AI technology effectively and in accordance with Islamic educational values. In addition to technical competence, teachers also need to have an ethical understanding of the use of AI in learning. With well-prepared human resources, the implementation of AI can provide maximum benefits for Islamic education.

In its implementation, Islamic educational institutions need to develop internal policies regarding the use of AI in the learning process. These policies should include standards for the use of AI applications, verification of information sources, protection of student data, and oversight of digital learning content. Without clear guidelines, the use of AI has the potential to lead to misuse of the technology by both students and educators.⁴⁷Furthermore, educational institutions need to foster a healthy and responsible digital culture. This is crucial to ensure that technology utilization remains within ethical guidelines and the goals of Islamic education. Therefore, AI governance is a crucial component of developing technology-based Islamic education.

The following is a table analyzing the opportunities, risks, and ethical regulations for the use of AI in Islamic Religious Education:

No	Aspect	Opportunity	Risk	Ethical Regulations
1	Learning	Personalization of materials and adaptive learning	Technology dependency	Teachers remain the main guides
2	Religious Information	Quick access to Islamic literature	Invalid and biased information	Source verification by educators

⁴⁶ R O Okunlaya, "Artificial Intelligence (AI) Library Services Innovative Conceptual Framework for the Digital Transformation of University Education," *Library Hi Tech* 40, no. 6 (2022): 1869–92, <https://doi.org/10.1108/LHT-07-2021-0242>.

⁴⁷ A Masood, "A Review on Emerging Artificial Intelligence (AI) Techniques for Air Pollution Forecasting: Fundamentals, Application and Performance," *Journal of Cleaner Production* 322 (2021), <https://doi.org/10.1016/j.jclepro.2021.129072>.

No	Aspect	Opportunity	Risk	Ethical Regulations
3	Learning Evaluation	Automated assessment and administrative efficiency	The loss of the humanistic aspect	Human oversight in evaluation
4	Instructional Media	Interactive and innovative learning	Reduced social interaction	Balanced use between digital and face-to-face
5	Student Data	Analysis of student learning development	Misuse of personal data	Student data protection and privacy

The table shows that AI has significant benefits in supporting the effectiveness of Islamic Religious Education (PAI) learning, but it also presents challenges that require ethical oversight. In terms of learning, AI helps personalize materials so students can learn at their own pace. However, over-reliance on technology can diminish students' independent thinking skills.⁴⁸ In terms of religious information, AI provides rapid access to Islamic literature sources, but the validity of the information must still be verified by teachers. In terms of evaluation, administrative efficiency is increased, but humanistic values in education must still be maintained. Therefore, a balance between technology and human roles is a key principle in implementing AI in Islamic Religious Education.

This research also found that AI can support the development of digital da'wah methods in Islamic educational settings. Religious material can be delivered through interactive applications, educational videos, or virtual learning systems that are more engaging for the younger generation. This approach is relevant to the characteristics of the digital generation, which is more closely connected to information technology. With the help of AI, religious material can be delivered creatively, thereby increasing student learning interest. However, digital da'wah content must remain under academic and religious supervision to ensure it does not deviate from Islamic principles. Therefore, collaboration between technology experts and religious scholars is crucial in the development of AI-based Islamic education.

In the context of educational globalization, the use of AI also opens up opportunities for international collaboration between Islamic educational institutions. The exchange of digital learning resources, technology-based curriculum development, and collaborative research are facilitated through AI support. This can strengthen the competitiveness of Islamic educational institutions globally.⁴⁹ However, technological globalization also brings challenges in the form of the influx of cultural values that do not always align with the character of Islamic education. Therefore, value filtering and strengthening Islamic identity are necessary in the process of adapting technology. With

⁴⁸ V Sounderajah, "Developing a Reporting Guideline for Artificial Intelligence-Centred Diagnostic Test Accuracy Studies: The STARD-AI Protocol," *BMJ Open* 11, no. 6 (2021), <https://doi.org/10.1136/bmjopen-2020-047709>.

⁴⁹ M E Dogan, "The Use of Artificial Intelligence (AI) in Online Learning and Distance Education Processes: A Systematic Review of Empirical Studies," *Applied Sciences Switzerland* 13, no. 5 (2023), <https://doi.org/10.3390/app13053056>.

this approach, Islamic education can remain relevant in the modern era without losing its identity.

The results of this study confirm that the integration of AI in Islamic Religious Education must be carried out proportionally and oriented towards holistic educational goals. Islamic education aims not only to produce intellectually intelligent students but also to possess spiritual strength and noble morals. AI technology can be a supporting tool to achieve these goals if used wisely and purposefully.⁵⁰ Conversely, the use of AI without ethical controls can lead to the degradation of moral values and the loss of the spiritual dimension in education. Therefore, the development of AI in Islamic education must always be based on the principles of public welfare and Islamic character formation. This approach is key to ensuring that digital transformation aligns with religious values.

⁵⁰ S Na, "Acceptance Model of Artificial Intelligence (AI)-Based Technologies in Construction Firms: Applying the Technology Acceptance Model (TAM) in Combination with the Technology–Organisation–Environment (TOE) Framework," *Buildings* 12, no. 2 (2022), <https://doi.org/10.3390/buildings12020090>.

Conclusion

Based on the research results, it can be concluded that Artificial Intelligence (AI) has a strategic role in supporting the transformation of Islamic Religious Education in the digital era. AI offers various positive opportunities, such as personalized learning, increased access to Islamic knowledge sources, the development of interactive learning media, and efficiency in educational evaluation and administration. This technology can also increase student learning motivation through more adaptive and innovative learning approaches. However, the use of AI also presents various risks, such as the dissemination of invalid religious information, algorithmic bias, reduced humanistic interaction between teachers and students, and threats to the protection of students' personal data. Therefore, the use of AI in Islamic Religious Education must be carried out carefully and continue to place teachers at the center of students' moral and spiritual development. Furthermore, this study emphasizes the importance of ethical regulations based on Islamic values in the implementation of AI in educational environments. The principles of trustworthiness, justice, responsibility, honesty, and welfare must be the basis for the development and use of AI technology. Islamic educational institutions also need to develop clear policies regarding technology governance, verification of religious information, and protection of student data. With a balanced approach between technological advancement and Islamic values, AI can be utilized as an instrument to support the sustainable improvement of the quality of Islamic education. The integration of AI based on Islamic ethics will enable the creation of a modern, humanistic education system that remains oriented toward Islamic character development.

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