Jurnal Pendidikan dan Pemikiran Islam
eISSN: 2809-0322
Vol. 6, No. 4, Juli-Agustus 2026
DOI: https://doi.org/10.69900/ag.v6i4.638

Integration of Artificial Intelligence in Islamic Religious Education Learning: Opportunities, Challenges, and Implementation Strategies Aligned with Islamic Values

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Abstract

This study aims to analyze the opportunities, challenges, and implementation strategies of artificial intelligence in Islamic Religious Education learning while remaining aligned with Islamic values. This research employs a library research method with a descriptive-analytical approach through the examination of various scholarly sources, including journals, books, academic articles, and educational policy documents. The data analysis technique was conducted through data reduction, categorization, interpretation, and conclusion drawing based on the relevance of the research themes. The findings indicate that the integration of AI in IRE learning offers significant opportunities to enhance learning effectiveness, personalize learning materials, improve educational accessibility, and strengthen students' digital literacy. However, the implementation of AI also presents challenges, including the potential degradation of spiritual values, technological dependency, ethical issues in data usage, and the limited digital competence of educators. Therefore, implementation strategies are needed that emphasize the integration of Islamic values, the strengthening of teachers'

roles as moral guides, the development of curricula based on Islamic digital ethics, and educational policies that are adaptive to technological advancements.

Keywords: Artificial Intelligence, Islamic Religious Education, Digital Transformation

Abstrak

Penelitian ini bertujuan untuk menganalisis peluang, tantangan, dan strategi implementasi kecerdasan buatan dalam pembelajaran Pendidikan Agama Islam yang tetap selaras dengan nilai-nilai Islam. Penelitian ini menggunakan metode library research dengan pendekatan deskriptif-analitis melalui penelaahan terhadap berbagai sumber ilmiah berupa jurnal, buku, artikel akademik, dan dokumen kebijakan pendidikan. Teknik analisis data dilakukan melalui reduksi data, kategorisasi, interpretasi, dan penarikan kesimpulan berdasarkan relevansi tema penelitian. Hasil penelitian menunjukkan bahwa integrasi AI dalam pembelajaran PAI memiliki peluang besar dalam meningkatkan efektivitas pembelajaran, personalisasi materi, aksesibilitas pendidikan, dan penguatan literasi digital peserta didik. Namun demikian, implementasi AI juga menghadirkan tantangan berupa potensi degradasi nilai spiritual, ketergantungan teknologi, persoalan etika penggunaan data, serta rendahnya kompetensi digital pendidik. Oleh karena itu, diperlukan strategi implementasi yang menekankan integrasi nilai-nilai Islam, penguatan peran guru sebagai pembimbing moral, pengembangan kurikulum berbasis etika digital Islami, serta kebijakan pendidikan yang adaptif terhadap perkembangan teknologi.

Kata Kunci: Kecerdasan Buatan, Pendidikan Agama Islam, Transformasi Digital

Introduction

The development of digital technology in the era of the Industrial Revolution 4.0 has brought significant changes to various aspects of human life, including the education sector. The emergence of artificial intelligence (AI) has become one of the most influential technological innovations in transforming modern learning systems.[1] This technology enables more effective, adaptive, and data-driven learning processes. In the educational context, AI has been used to support personalized learning, automated evaluation, the development of interactive learning media, and the analysis of student needs. This situation demonstrates that AI is no longer merely a technology of the future but has become part of the current educational reality. Therefore, Islamic educational institutions need to pay serious attention to this technological development to avoid being left behind in the currents of global transformation.

Islamic Religious Education plays a strategic role in shaping the character, morality, and spirituality of students. Islamic Religious Education (PAI) is not only oriented towards the transfer of religious knowledge but also aims to instill moral

[1] 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.

values, ethics, and faith in everyday life. In the context of digital technology developments, Islamic Religious Education faces new challenges in the form of changing learning patterns among the younger generation, who are increasingly dependent on information technology.[2] Digital generation students tend to access knowledge through fast and practical digital media. This situation demands that Islamic Religious Education (PAI) teachers adapt their learning methods to remain relevant to the needs of today's students. Therefore, the integration of AI in Islamic Religious Education (PAI) learning is an innovative alternative that deserves in-depth study.

Artificial intelligence has the ability to process data quickly and provide learning recommendations tailored to individual student characteristics. In educational practice, AI can be used to develop adaptive learning materials, provide virtual tutors, and assist with automated evaluation processes.[3] This technology also enables students to experience a more interactive and personalized learning experience. In Islamic Religious Education (PAI) learning, AI can be used to enrich teaching methods for the Quran, Hadith, Islamic jurisprudence, Islamic history, and moral education through engaging digital media. The presence of this technology can increase students' interest in religious material. Furthermore, the use of AI can also expand access to Islamic education for communities in remote areas.

However, the use of AI in Islamic Religious Education (PAI) learning cannot be separated from various ethical and moral issues. Islamic education is characterized by placing spiritual values and moral development at the core of learning. Excessive reliance on technology is feared to reduce direct interaction between teachers and students.[4] However, in Islamic educational tradition, emotional relationships and teacher role models play a crucial role in shaping students' character. Furthermore, AI, as a product of modern technology, cannot fully replace the spiritual dimension and human values in the educational process. Therefore, the implementation of AI in Islamic Religious Education (PAI) learning needs to comprehensively consider Islamic ethical principles.

The use of AI in education also raises concerns regarding data misuse and student privacy. AI systems typically work by collecting and analyzing user data to generate more accurate recommendations. In the context of Islamic education, protecting privacy rights and data security are essential ethical principles. If not properly regulated, the use of AI can lead to potential ethical violations and the exploitation of student data. Furthermore, AI algorithms can also potentially lead to

[2] T K F Chiu, "Creation and Evaluation of a Pretertiary Artificial Intelligence (AI) Curriculum," *IEEE Transactions on Education* 65, no. 1 (2022): 33, https://doi.org/10.1109/TE.2021.3085878.
[3] Y Jang, "Development and Validation of an Instrument to Measure Undergraduate Students' Attitudes toward the Ethics of Artificial Intelligence (AT-EAI) and Analysis of Its Difference by Gender and Experience of AI Education," *Education and Information Technologies* 27, no. 8 (2022): 11637, https://doi.org/10.1007/s10639-022-11086-5.
[4] X H Jia, "Towards a New Conceptual Model of AI-Enhanced Learning for College Students: The Roles of Artificial Intelligence Capabilities, General Self-Efficacy, Learning Motivation, and Critical Thinking Awareness," *Systems* 12, no. 3 (2024), https://doi.org/10.3390/systems12030074.

information bias if not developed objectively and in accordance with universal values. This situation demonstrates the need for clear regulation and oversight in implementing AI in education.

Islamic Religious Education is essentially oriented toward developing individuals who are faithful, pious, and virtuous. This goal emphasizes not only the intellectual aspect but also the spiritual and social development of students.[5] In the context of the use of AI, the challenge arises of how technology can be utilized without diminishing the essence of Islamic education itself. Teachers retain a central position as moral and spiritual guides for students. Technology should function as a learning tool, not completely replace the role of educators. Therefore, the integration of AI in Islamic Religious Education (PAI) needs to be designed proportionally to continue to support the goals of Islamic education.

Changing student learning patterns in the digital era demand more creative and interactive learning innovations. Today's students tend to be more interested in multimedia-based learning and digital technology than conventional methods.[6] In this context, Islamic Religious Education (PAI) teachers need digital competencies to develop learning media relevant to the needs of the modern generation. AI can assist teachers in developing engaging teaching materials, presenting learning simulations, and providing more efficient evaluations. The use of this technology can also increase the effectiveness of classroom learning. Therefore, strengthening digital literacy for Islamic Religious Education (PAI) teachers is an urgent need in the era of digital transformation.

Advances in AI also open up significant opportunities for the development of personalized learning systems. Each student has unique characteristics, abilities, and learning styles. Through AI technology, learning systems can be tailored to individual student needs, thus optimizing the learning process.[7] In Islamic Religious Education (PAI) learning, personalization can help students understand religious material at their own pace. This technology can also provide rapid and accurate feedback on student learning outcomes. This demonstrates the significant potential of AI to improve the quality of Islamic education when utilized appropriately.

On the other hand, the development of AI also presents challenges in the form of a potential decline in humanistic values in education. Islamic education emphasizes not only mastery of knowledge but also the importance of social relationships, empathy, and moral development. Direct interaction between teachers and students is a crucial part of the process of developing Islamic character. There are concerns

[5] B B Babic, "Beware Explanations from AI in Health Care the Benefits of Explainable Artificial Intelligence Are Not What They Appear," *Science* 373, no. 6552 (2021): 286, https://doi.org/10.1126/science.abg1834.
[6] 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.
[7] X Zhai, "A Review of Artificial Intelligence (AI) in Education from 2010 to 2020," *Complexity* 2021 (2021), https://doi.org/10.1155/2021/8812542.

that overly dominant use of technology could diminish the human dimension of the learning process.[8] Furthermore, students could potentially become dependent on technology to seek information and complete learning assignments. Therefore, a balance is needed between the use of technology and the strengthening of humanitarian values in Islamic education.

The digital transformation in education also demands a paradigm shift in learning management. Teachers no longer serve solely as primary sources of information, but also as facilitators, motivators, and mentors for students. In this context, AI can assist teachers in providing broader and more varied learning resources.[9] However, teachers remain responsible for ensuring that the material presented aligns with Islamic values. The use of AI should be directed toward strengthening the quality of learning, not simply following technological trends. Therefore, developing teacher competencies is a crucial aspect of implementing AI in Islamic Religious Education (PAI) learning.

Beyond pedagogical aspects, the implementation of AI in Islamic education also relates to educational policy and infrastructure. Not all educational institutions have adequate access to technology to support the use of AI in learning.[10] The digital divide between urban and rural schools remains a significant issue. Furthermore, budget constraints and a lack of technology training for teachers also pose obstacles to AI implementation. This situation demonstrates that the digital transformation of education requires comprehensive policy support from the government and educational institutions. Without such support, the optimal use of AI in Islamic Religious Education (PAI) learning will be difficult.

The integration of AI in Islamic education also requires consideration of the maqasid sharia perspective as an ethical and philosophical foundation. Technology must be directed towards supporting human well-being and avoiding potential social and moral harm. In this context, the use of AI must consider the protection of reason, religion, life, posterity, and property, as the primary objectives of Islamic law. This approach is crucial to ensure that technological developments do not conflict with Islamic principles. Thus, Islamic education can utilize modern technology without losing its identity and core values. The maqasid sharia approach can also serve as a basis for formulating policies on the use of AI in Islamic educational institutions.

The development of AI in education has attracted the attention of many researchers and academics in various countries. Numerous studies have shown that

[8] A Tang, "The Importance of Transparency: Declaring the Use of Generative Artificial Intelligence (AI) in Academic Writing," *Journal of Nursing Scholarship* 56, no. 2 (2024): 317, https://doi.org/10.1111/jnu.12938.

[9] 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.

[10] T Yigitcanlar, "Responsible Urban Innovation with Local Government Artificial Intelligence (Ai): A Conceptual Framework and Research Agenda," *Journal of Open Innovation Technology Market and Complexity* 7, no. 1 (2021): 5, https://doi.org/10.3390/joitmc7010071.

AI can improve learning effectiveness through adaptive systems and analysis of student learning data.[11] However, some research also highlights the negative impacts of AI on social interactions and student character development. In the context of Islamic education, studies on AI integration are still relatively limited and require further development. Therefore, research on the opportunities, challenges, and strategies for implementing AI in Islamic Religious Education (PAI) learning is highly relevant. This study is expected to provide both theoretical and practical contributions to the development of Islamic education in the digital era.

The use of AI in Islamic Religious Education (PAI) learning can also support the development of Islamic digital literacy among students. Digital literacy relates not only to the ability to use technology but also to the ability to filter information critically and ethically.[12] In an era of digital information overload, students need to be equipped with the ability to distinguish between true and misleading information. Islamic education plays a crucial role in shaping moral and ethical awareness regarding the use of digital technology. AI can be utilized as a tool to develop learning media that promote an understanding of moderate and tolerant Islam. Therefore, the integration of AI can be a strategic opportunity to strengthen Islamic character education.

Amidst increasingly rapid technological developments, Islamic education is required to maintain a balance between innovation and traditional values. Modernization of education must not diminish the identity and fundamental principles of Islamic teachings.[13] Therefore, the integration of AI into Islamic Religious Education (PAI) learning must be carried out selectively and responsibly. Teachers and educational institutions need to ensure that technology is used to enhance the educational process, not the other way around. Furthermore, students need to be educated on the ethical use of technology from an Islamic perspective. This approach is crucial for technological development to provide optimal benefits to Islamic education.

Artificial intelligence also has the potential to support inclusive learning in Islamic education. AI technology can assist students with special needs through adaptive learning features and digital accessibility. For example, AI can be used to provide automatic text, language translation, or audio learning, making it easier for students to understand religious material. With this technology, access to Islamic

[11] S Greenstein, "Preserving the Rule of Law in the Era of Artificial Intelligence (AI)," *Artificial Intelligence and Law* 30, no. 3 (2022): 293, https://doi.org/10.1007/s10506-021-09294-4.
[12] K N Shivaprakash, "Potential for Artificial Intelligence (AI) and Machine Learning (ML) Applications in Biodiversity Conservation, Managing Forests, and Related Services in India," *Sustainability Switzerland* 14, no. 12 (2022), https://doi.org/10.3390/su14127154.
[13] S Nahar, "Modeling the Effects of Artificial Intelligence (AI)-Based Innovation on Sustainable Development Goals (SDGs): Applying a System Dynamics Perspective in a Cross-Country Setting," *Technological Forecasting and Social Change* 201 (2024), https://doi.org/10.1016/j.techfore.2023.123203.

education becomes more open and equitable.[14] This aligns with Islamic principles that emphasize the importance of justice and equal education for all humanity. Therefore, the use of AI can also support the creation of a more inclusive and humane Islamic education.

Based on these various phenomena, the integration of artificial intelligence in Islamic Religious Education (PAI) learning is a crucial issue that requires comprehensive study. The use of AI offers numerous opportunities to improve the quality and effectiveness of Islamic Religious Education (PAI) learning. However, the implementation of this technology also presents ethical, spiritual, and social challenges that cannot be ignored. Therefore, an implementation strategy that aligns with Islamic values is needed to ensure the technology's wise use. This research is expected to provide an in-depth overview of the opportunities, challenges, and strategies for integrating AI into Islamic Religious Education (PAI) learning in the digital era.

Literature Review

Artificial intelligence is a branch of computer science that focuses on developing systems capable of mimicking human thinking. AI is designed to perform various tasks such as data analysis, decision-making, pattern recognition, and automated learning. In education, AI has evolved into a technology that supports digital-based learning processes and educational personalization.[15] Various modern learning platforms have utilized AI to provide adaptive learning materials tailored to students' needs. This technology is also used to facilitate faster and more accurate learning evaluation. Therefore, AI has become a highly influential innovation in the transformation of global education.

The concept of technology-based learning in Islamic education has actually evolved since the advent of digital media and the internet. The use of technology in Islamic Religious Education (PAI) learning aims to increase the effectiveness of material delivery and engage students' interest in learning.[16] Digital media allows students broader access to Islamic sources such as tafsir (interpretations of the Quran), hadith (hadith), and classical Islamic literature. Furthermore, technology also helps teachers develop more creative and interactive learning methods. However, the use of technology in Islamic education must still consider ethical aspects and sharia values. This is crucial to ensure that technology does not displace the primary goal of Islamic education, which is to develop noble character.

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[14] P T N Anh, "Artificial Intelligence (AI) Models for Disease Diagnosis and Prediction of Heart Disease with Artificial Neural Networks (ANN)," *Computer Vision and AI Integrated Iot Technologies in the Medical Ecosystem*, 2024, 140, https://doi.org/10.1201/9781003429609-9.

[15] 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): 773, https://doi.org/10.1109/TEM.2021.3109983.

[16] M Perkins, "The Artificial Intelligence Assessment Scale (AIAS): A Framework for Ethical Integration of Generative AI in Educational Assessment," *Journal of University Teaching and Learning Practice* 21, no. 6 (2024), https://doi.org/10.53761/q3azde36.

Constructivism theory in education explains that students construct knowledge through active and interactive learning experiences. AI supports the constructivist approach by providing adaptive learning tailored to students' abilities.[17] AI systems can analyze students' learning patterns and recommend materials tailored to their needs. In Islamic Religious Education (PAI) learning, this approach can help students understand religious concepts more deeply and contextually. Furthermore, AI can also enhance active student participation through interactive learning media. Thus, AI integration can support the development of more innovative PAI learning.

Several studies have shown that AI has a positive impact on learning effectiveness. This technology can increase learning motivation, accelerate the evaluation process, and provide a more personalized learning experience.[18] In the context of religious education, AI can be used to develop Quran learning applications, prayer simulations, and memorization evaluation systems. The use of AI also helps students gain access to learning anytime and anywhere. This situation is highly relevant to the needs of the digital generation, accustomed to using technology in their daily activities. Therefore, AI is seen as a significant opportunity in the development of modern Islamic education.

Despite its numerous benefits, the use of AI in education also presents various ethical and social challenges. One major challenge is the potential reduction in direct interaction between teachers and students. In Islamic education, the relationship between teacher and student has a crucial spiritual dimension.[19] Teachers serve not only as transmitters of knowledge but also as moral role models and moral guides. There are concerns that overreliance on technology could diminish the quality of this relationship. Therefore, the implementation of AI in Islamic education must be carried out in a balanced and proportional manner.

Literature on technological ethics in Islam emphasizes the importance of using technology for the benefit of humanity. Islam does not reject the development of science and technology as long as its use does not conflict with Islamic law. The principle of maqasid sharia serves as an important foundation for assessing the use of modern technology. Technology must safeguard the values of religion, reason, life, posterity, and property. In the context of AI, this principle can be used as a basis for formulating technology use policies in Islamic educational institutions. Thus, AI integration can align with Islamic values.

The study of digital literacy in Islamic education has also become a crucial focus in the modern era. Digital literacy encompasses not only the ability to use technology

[17] Q Xia, "The Moderating Effects of Gender and Need Satisfaction on Self-Regulated Learning through Artificial Intelligence (AI)," *Education and Information Technologies* 28, no. 7 (2023): 8692, https://doi.org/10.1007/s10639-022-11547-x.
[18] C Robertson, "Diverse Patients' Attitudes towards Artificial Intelligence (AI) in Diagnosis," *Plos Digital Health* 2, no. 5 (2023), https://doi.org/10.1371/journal.pdig.0000237.
[19] M Mozaffar, "Mechanistic Artificial Intelligence (Mechanistic-AI) for Modeling, Design, and Control of Advanced Manufacturing Processes: Current State and Perspectives," *Journal of Materials Processing Technology* 302 (2022), https://doi.org/10.1016/j.jmatprotec.2021.117485.

but also the ability to think critically and ethically when utilizing digital information. Students need to be equipped with the skills to select accurate information and avoid content that conflicts with Islamic values. Islamic Religious Education teachers have a responsibility to instill Islamic digital ethics in students.[20] AI can be utilized to develop learning media that support Islamic digital literacy. Thus, technology serves not only as a learning tool but also as a means of character development.

Other research shows that teacher readiness is a key factor in the successful implementation of AI in education. Many teachers still face challenges in mastering digital technology and using AI-based applications. This situation has resulted in less than optimal implementation of technology in schools.[21] In Islamic Religious Education (PAI) teaching, teachers also need to understand how to integrate technology without diminishing the spiritual values of the learning process. Therefore, training and developing teachers' digital competencies are crucial. Institutional support is also needed to enable teachers to adapt to developments in educational technology.

Developing a technology-based curriculum is a crucial strategy for integrating AI into education. The curriculum must be designed to accommodate technological advancements while maintaining students' character and moral values. In the context of Islamic education, an AI-based curriculum must prioritize morality and spirituality. Learning materials must also be adapted to digital developments to meet the needs of the modern generation. Furthermore, the curriculum must encourage students to use technology responsibly.[22] This approach is crucial for Islamic education to effectively face the challenges of the digital era.

Based on these various literature reviews, it is clear that the integration of AI into Islamic Religious Education (PAI) learning holds significant potential for improving educational quality. However, the implementation of this technology also presents ethical, social, and spiritual challenges that must be addressed. Therefore, the use of AI in Islamic education must be based on the principle of balance between technological innovation and Islamic values. Teachers, educational institutions, and the government need to collaborate in formulating appropriate implementation strategies. With a thoughtful approach, AI can be a tool to strengthen the quality of Islamic Religious Education (PAI) learning in the digital age.

Method

This study employed a qualitative approach with library research. This approach was chosen because it focused on analyzing concepts, theories, and various

[20] 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.

[21] O Higgins, "Artificial Intelligence (AI) and Machine Learning (ML) Based Decision Support Systems in Mental Health: An Integrative Review," *International Journal of Mental Health Nursing* 32, no. 4 (2023): 969, https://doi.org/10.1111/inm.13114.

[22] S Bankins, "The Ethical Implications of Artificial Intelligence (AI) For Meaningful Work," *Journal of Business Ethics* 185, no. 4 (2023): 728, https://doi.org/10.1007/s10551-023-05339-7.

research findings related to the integration of artificial intelligence in Islamic Religious Education (PAI) learning. Library research enabled researchers to obtain in-depth data through a review of various relevant scientific sources. Data sources in this study came from scientific journals, academic books, research articles, proceedings, and educational policy documents related to AI and Islamic education. Through this approach, researchers were able to understand various perspectives on the opportunities and challenges of using AI in Islamic Religious Education (PAI) learning. Furthermore, this method also assisted researchers in formulating implementation strategies that align with Islamic values.

Data collection techniques were conducted through a documentary study of various literature relevant to the research topic. Researchers identified scientific sources discussing artificial intelligence, digital transformation of education, technology ethics, and Islamic Religious Education learning. The selected literature was based on academic credibility and relevance to the research theme. Next, researchers recorded and grouped the data based on the focus of the discussion. The collected data was then systematically organized to facilitate the analysis process. This approach enabled the research to gain a strong theoretical foundation.

The data analysis in this study was conducted using descriptive-analytical techniques. The collected data was then reduced to select information relevant to the research focus.[23] Afterward, the data was categorized based on themes such as opportunities for AI in education, implementation challenges, and integration strategies based on Islamic values. The next stage was data interpretation by connecting various theories and previous research findings. The researchers then drew conclusions based on patterns found in various literature. This analysis technique was used to generate a comprehensive understanding of AI integration in Islamic Religious Education learning.

This research also uses a normative approach to analyze the use of AI from an Islamic perspective. This normative approach examines Islamic ethical principles, the maqasid sharia, and Islamic educational concepts relevant to the use of technology. This approach is crucial to ensure that AI implementation does not conflict with the goals of Islamic education. In this context, technology is viewed as a tool that should be directed towards the benefit of humanity. The research also considers moral and spiritual aspects of the use of educational technology. Therefore, the research findings are expected to provide recommendations that balance technological innovation and Islamic values.

The validity of the data in this study was ensured through source triangulation techniques. Researchers compared various literature sources to ensure the consistency of the information obtained. Furthermore, they conducted a critical analysis of each source to ensure the data used had strong academic validity. The

[23] I H Y Yim, "Artificial Intelligence (AI) Learning Tools in K-12 Education: A Scoping Review," *Journal of Computers in Education* 12, no. 1 (2025): 95, https://doi.org/10.1007/s40692-023-00304-9.

triangulation process involved comparing theories, research findings, and expert perspectives on AI and Islamic education. This step is crucial to reduce subjectivity in data interpretation. Thus, the research results can be scientifically validated and provide a relevant contribution to the development of Islamic education in the digital age.

Result and Discussion

The development of artificial intelligence in education demonstrates the technology's significant potential for improving the quality of learning. In the context of Islamic Religious Education, AI can assist teachers in developing more engaging and interactive learning materials.[24] This technology enables flexible learning through digital platforms that are easily accessible to students. Furthermore, AI can facilitate faster and more efficient learning evaluation. The use of AI in Islamic Religious Education (PAI) learning provides opportunities for students to gain a more personalized learning experience. Thus, AI integration is a crucial innovation in the transformation of Islamic education.

One of the main opportunities for using AI in Islamic Religious Education (PAI) is its ability to personalize learning. Each student has a different level of understanding and learning style. AI can analyze their needs and recommend materials tailored to their abilities.[25] In religious education, a personalized approach is crucial because understanding Islamic concepts requires a gradual process. AI technology allows students to learn at their own pace without feeling left behind. This can increase learning effectiveness and student motivation.

The use of AI also supports the development of multimedia-based learning media in Islamic education. Religious learning materials can be presented in the form of interactive videos, simulations, animations, and digital audio, making them more engaging. Students tend to understand material more easily when presented through interactive and visual media.[26] In Quranic learning, AI can be used to assist with tajwid recognition, hijaiyah pronunciation, and automatic reading evaluation. This technology helps students learn independently outside of the classroom. Thus, AI can strengthen the quality of Islamic Religious Education (PAI) learning in the digital age.

In addition to improving learning effectiveness, AI also offers opportunities to expand access to Islamic education. Through AI-based digital platforms, students can access learning materials anytime and from anywhere.[27] This is especially important

[24] N V Quaquebeke, "The Now, New, and Next of Digital Leadership: How Artificial Intelligence (AI) Will Take Over and Change Leadership as We Know It," *Journal of Leadership and Organizational Studies* 30, no. 3 (2023): 266, https://doi.org/10.1177/15480518231181731.
[25] M K Tripathi, "Evolving Scenario of Big Data and Artificial Intelligence (AI) in Drug Discovery," *Molecular Diversity* 25, no. 3 (2021): 1440, https://doi.org/10.1007/s11030-021-10256-w.
[26] G Cicerone, "Regional Artificial Intelligence and the Geography of Environmental Technologies: Does Local AI Knowledge Help Regional Green-Tech Specialization?," *Regional Studies* 57, no. 2 (2023): 333, https://doi.org/10.1080/00343404.2022.2092610.
[27] K Oosthuizen, "Artificial Intelligence in Retail: The AI-Enabled Value Chain," *Australasian Marketing Journal* 29, no. 3 (2021): 267, https://doi.org/10.1016/j.ausmj.2020.07.007.

for communities in remote areas with limited access to education.[28] AI technology also enables the provision of online learning services that are more adaptive and responsive to student needs. In the context of Islamic education, broad access to learning resources can facilitate the more equitable dissemination of religious knowledge. Therefore, AI holds significant potential in supporting the equitable distribution of Islamic education.

The use of AI in Islamic Religious Education (PAI) learning also contributes to strengthening students' digital literacy. Today's young generation lives in a digital environment filled with a constant flow of information. Students need to be able to use technology wisely and responsibly.[29] Islamic Religious Education (PAI) teachers can utilize AI to teach Islamic digital ethics and how to filter accurate information. With this approach, technology becomes not only a learning tool but also a means of character development. Strengthening Islamic digital literacy is crucial in facing the challenges of the digital era.

However, the implementation of AI in Islamic Religious Education (PAI) learning also faces various challenges. One major challenge is the potential reduction in direct interaction between teachers and students. In Islamic education, the emotional bond between teachers and students plays a crucial role in the formation of morals and spirituality.[30] The teacher's exemplary role cannot be completely replaced by digital technology. If AI is too dominant, the educational process may lose its humanistic and spiritual dimensions. Therefore, the use of AI must maintain the teacher's central role as the moral guide in education.

Another emerging challenge is the low digital competency of some Islamic Education (PAI) teachers in using AI-based technology. Many teachers still experience difficulties operating digital applications and integrating technology into their learning. This situation has resulted in the suboptimal use of AI in schools. Furthermore, some teachers are concerned that technology could replace their role in the educational process. However, AI should be viewed as a tool that supports teachers' work, not replaces it. Therefore, technological training and mentoring for teachers is a crucial need.

Ethical issues surrounding data use also pose a challenge in implementing AI in education. AI systems work by collecting and analyzing user data to generate learning recommendations.[31] In the context of Islamic education, protecting data privacy and

[28] K Wang, "Analyzing the Adoption Challenges of the Internet of Things (Iot) and Artificial Intelligence (Ai) for Smart Cities in China," *Sustainability Switzerland* 13, no. 19 (2021), https://doi.org/10.3390/su131910983.
[29] K Elliott, "Towards an Equitable Digital Society: Artificial Intelligence (AI) and Corporate Digital Responsibility (CDR)," *Society* 58, no. 3 (2021): 182, https://doi.org/10.1007/s12115-021-00594-8.
[30] P Esmaeilzadeh, "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.
[31] C K Sahu, "Artificial Intelligence (AI) in Augmented Reality (AR)-Assisted Manufacturing Applications: A Review," *International Journal of Production Research* 59, no. 16 (2021): 4905, https://doi.org/10.1080/00207543.2020.1859636.

security are essential ethical values. If student data is not managed properly, it can pose a risk of information misuse. Furthermore, AI algorithms also have the potential to produce information bias that impacts the learning process. Therefore, clear regulations regarding the use of AI in education are needed.

The use of AI can also foster technological dependency among students. Easy access to information through AI can make students less active in critical thinking and in-depth learning.[32] In Islamic education, the process of seeking knowledge emphasizes not only the end result but also character building and commitment to learning. Excessive reliance on technology can diminish students' sense of discipline and responsibility. Therefore, teachers need to guide the use of AI in a proportional and educational manner. This approach is crucial to ensure the technology continues to have a positive impact.

The next challenge is the gap in technology access between educational institutions in urban and rural areas. Not all schools have adequate digital facilities to support AI implementation.[33] Limited internet access, technological devices, and educational budgets are major obstacles. This situation has resulted in the digital transformation of education not being implemented evenly. In the context of Islamic education, equitable access to technology is crucial to ensure all students have equal learning opportunities. Therefore, support from the government and educational institutions is a crucial factor in AI implementation.

To optimize the use of AI in Islamic Religious Education (PAI) learning, an implementation strategy is needed that aligns with Islamic values.[34] One key strategy is to position AI as a learning aid, not a substitute for teachers. Teachers retain a central role as spiritual, moral, and social guides for students.[35] Technology should be used to enhance the quality of learning and facilitate the educational process. Furthermore, the use of AI needs to be aligned with the goals of Islamic education, which emphasize the development of noble character. This approach is crucial to ensure that technology integration does not diminish the essence of Islamic education.

Strengthening teachers' digital competencies is a crucial strategy for implementing AI in Islamic education. Teachers need to be trained in the use of AI technology in learning.[36] This training should cover not only technical aspects but also

[32] M H Jarrahi, "Artificial Intelligence and Knowledge Management: A Partnership between Human and AI," *Business Horizons* 66, no. 1 (2023): 88, https://doi.org/10.1016/j.bushor.2022.03.002.
[33] 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.
[34] J Su, "Artificial Intelligence (AI) in Early Childhood Education: Curriculum Design and Future Directions," *Computers and Education Artificial Intelligence* 3 (2022), https://doi.org/10.1016/j.caeai.2022.100072.
[35] B Regassa Hunde, "Future Prospects of Computer-Aided Design (CAD) – A Review from the Perspective of Artificial Intelligence (AI), Extended Reality, and 3D Printing," *Results in Engineering* 14 (2022), https://doi.org/10.1016/j.rineng.2022.100478.
[36] N Kashive, "Understanding User Perception toward Artificial Intelligence (AI) Enabled e-Learning," *International Journal of Information and Learning Technology* 38, no. 1 (2021): 1–19, https://doi.org/10.1108/IJILT-05-2020-0090.

the ethical aspects of technology use from an Islamic perspective. With strong digital competencies, teachers can utilize AI creatively and innovatively in Islamic Religious Education (PAI) learning. Furthermore, teachers can guide students in the responsible use of technology. Therefore, teacher capacity development is a priority in the digital transformation of education.

Developing a curriculum based on Islamic digital ethics is also a crucial strategy for AI integration. The curriculum needs to be designed to integrate technology with Islamic values. Learning materials should encompass character education, ethical digital media use, and information literacy.[37] Students need to be equipped with an understanding of moral responsibility in the use of technology.[38] Thus, AI should not only be used to improve academic abilities but also to shape students' Islamic character. This approach is crucial for maintaining a balance between technology and morality.

The implementation of AI in Islamic Religious Education (PAI) learning also requires policy support from the government and educational institutions. These policies include the provision of digital infrastructure, teacher training, and regulations on the use of educational technology.[39] The government needs to ensure that all educational institutions have adequate access to digital technology. Furthermore, ethical guidelines for the use of AI are needed that align with the cultural and religious values of Indonesian society. Strong policy support will help the digital transformation process in education run more effectively. Thus, AI integration can provide optimal benefits for Islamic education.

The application of the maqasid sharia principles in the use of AI is a crucial foundation for maintaining the alignment of technology with Islamic values.[40] Technology should be used to promote public welfare and avoid potential moral and social harm. In the educational context, AI should be directed towards strengthening the quality of learning, protecting student rights, and upholding spiritual values. The maqasid sharia approach can also assist educational institutions in developing policies for the ethical use of technology. Thus, technological development can align with Islamic principles. This approach is a crucial solution in facing the challenges of the digital era.

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[37] C Peng, "The Effect of Required Warmth on Consumer Acceptance of Artificial Intelligence in Service: The Moderating Role of AI-Human Collaboration," *International Journal of Information Management* 66 (2022), https://doi.org/10.1016/j.ijinfomgt.2022.102533.

[38] Z Slimi, "Navigating the Ethical Challenges of Artificial Intelligence in Higher Education: An Analysis of Seven Global AI Ethics Policies," *TEM Journal* 12, no. 2 (2023): 592, https://doi.org/10.18421/TEM122-02.

[39] 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.hrmr.2022.100899.

[40] 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.

The following is a table regarding the opportunities, challenges, and strategies for implementing AI in Islamic Religious Education learning.

Table 01 Opportunities, Challenges, and Strategies for AI Implementation

No	Aspect	Opportunity	Challenge	Implementation Strategy
1	Learning	Personalization and interactivity of learning	Technology dependency	Strengthening the role of teachers as mentors
2	Educational Media	Development of Islamic digital media	Low digital competence of teachers	Technology training and mentoring
3	Access to Education	Equal access to online learning	Digital infrastructure gap	Support for educational policies and facilities
4	Ethics and Morals	Islamic digital literacy	Data abuse and AI bias	Regulation and ethics of AI use
5	Spiritual Values	Strengthening digital preaching	Reduced humanistic interaction	Integration of Islamic values in the curriculum

The table shows that the implementation of AI in Islamic Religious Education (PAI) learning has various interrelated dimensions. The opportunities offered by AI can enhance learning effectiveness if supported by appropriate implementation strategies. However, the challenges that arise also require serious attention to ensure that technology does not negatively impact Islamic education. Therefore, a holistic approach is needed to implement AI in educational settings. This approach must encompass pedagogical, ethical, social, and spiritual aspects. This way, AI integration can be carried out in a balanced and responsible manner.

The personalized aspect of learning is one of the main advantages of using AI in Islamic education. AI systems can adapt learning materials to the needs and abilities of each individual student.[41] This helps students understand religious material more effectively and deeply. In Islamic Religious Education (PAI) learning, a personalized approach can improve the quality of understanding of Islamic values. Furthermore, students can learn at a pace that suits their abilities. This has the potential to improve student motivation and learning outcomes.

[41] A Malik, "Artificial Intelligence (AI)-Assisted HRM: Towards an Extended Strategic Framework," *Human Resource Management Review* 33, no. 1 (2023), https://doi.org/10.1016/j.hrmr.2022.100940.

The development of AI-based learning media also makes a significant contribution to innovation in Islamic education.[42] Teachers can leverage technology to create more creative and engaging learning materials. The use of animations, simulations, and virtual tutors can help students understand religious concepts more contextually. Digital learning media can also increase student active participation in the learning process. Thus, AI can help create a more interactive and enjoyable learning environment. This is highly relevant to the characteristics of today's digital generation.

On the other hand, the challenge of teachers' digital competency remains a major issue in AI implementation. Many teachers lack the skills to utilize digital technology for learning. This situation results in suboptimal use of AI in schools. Therefore, ongoing technology training for teachers is necessary. Teachers need to understand not only the use of digital applications but also technology-based pedagogical strategies. With strong competency, teachers can utilize AI more effectively in Islamic Religious Education (PAI) learning.

The ethical aspects of AI use are also a key concern in Islamic education. Technology use must adhere to the principles of honesty, responsibility, and protection of student rights. In the context of AI, data security and student privacy must be strictly maintained. Furthermore, AI use must be monitored to prevent misleading information or information that conflicts with Islamic values. Islamic digital ethics education is crucial for developing students' moral awareness. This ensures technology can be used wisely and responsibly.

Integrating Islamic values into the use of AI is a crucial step in maintaining the identity of Islamic education. Technology must be directed towards strengthening students' morals, spirituality, and ethics. Teachers play a crucial role in guiding students to use technology in accordance with Islamic principles. Furthermore, the curriculum must be designed to integrate character education with digital literacy. This approach is crucial to ensure that technological developments do not displace the primary goals of Islamic education. Thus, AI can be a tool for strengthening Islamic character education.

Government policy support is also crucial for the success of AI implementation in Islamic education. The government needs to provide adequate digital infrastructure for educational institutions. Furthermore, regulations governing the ethical and responsible use of AI are needed. Budgetary support for educational technology development is also crucial. Supportive policies can enable a more equitable digital transformation in education. This will help improve the quality of Islamic education in the digital age.

Digital transformation in Islamic education is inevitable in the era of modern technological development. Therefore, Islamic educational institutions need to be adaptive to these changes. The integration of AI should be viewed as an opportunity

[42] Å Stige, "Artificial Intelligence (AI) for User Experience (UX) Design: A Systematic Literature Review and Future Research Agenda," *Information Technology and People* 37, no. 6 (2024): 2327, https://doi.org/10.1108/ITP-07-2022-0519.

to improve the quality of learning, not a threat to religious values. However, the use of technology must remain controlled to prevent the spiritual and humanistic dimensions of Islamic education from being lost. Striking a balance between technological innovation and Islamic values is key to implementing AI. With the right approach, Islamic education can develop into a modern education without losing its identity.

The use of AI in education also has the potential to support the development of digital da'wah (Islamic outreach). Technology enables the wider and faster dissemination of Islamic teachings.[43] AI can aid the development of da'wah applications, digital Quran learning, and technology-based religious consultation platforms. This presents a significant opportunity for Islamic education to reach a younger generation familiar with the digital world. However, the quality and validity of Islamic content must remain closely monitored. Therefore, collaboration between technologists and religious scholars is crucial.

Islamic education in the digital era requires a new paradigm that is more adaptive to technological developments. Teachers and educational institutions can no longer rely solely on conventional learning methods. The use of AI needs to be systematically integrated into the learning process. However, technology must remain a tool that supports the goals of Islamic education. Strengthening moral values, spirituality, and ethics remains a top priority. In this way, Islamic education can more effectively face the challenges of the digital era. Overall, the integration of AI in Islamic Religious Education learning offers significant opportunities to improve the quality of education. Technology can help personalize learning, develop digital media, and expand access to Islamic education. However, the implementation of AI also presents challenges in the form of ethical issues, digital competency, and the potential for a reduction in the spiritual dimension of education. Therefore, an implementation strategy based on Islamic values and digital ethical principles is needed. Teachers, educational institutions, the government, and the community need to collaborate in developing an Islamic education system that is adaptive to technology. With a balanced approach, AI can be a means to strengthen the quality of Islamic education in the future.

[43] 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): 499, https://doi.org/10.1080/10447318.2022.2151730.

Conclusion

The integration of artificial intelligence into Islamic Religious Education (PAI) learning is a strategic step in addressing technological developments in the digital era. AI offers various opportunities to improve learning effectiveness, personalize materials, develop interactive learning media, and expand access to Islamic education. This technology can also support the strengthening of students' digital literacy and the development of more modern digital da'wah (Islamic outreach). However, the implementation of AI also presents challenges such as the potential for reduced humanistic interaction, low teacher digital competence, ethical issues in data use, and dependence on technology. Therefore, the integration of AI into Islamic education must be carried out wisely and remain oriented toward building Islamic character. The strategy for implementing AI in Islamic Religious Education (PAI) learning must prioritize Islamic values. Teachers retain a central role as moral and spiritual guides for students, while technology serves as a learning tool. Strengthening teachers' digital competence, developing a curriculum based on Islamic digital ethics, and supporting government policies are crucial factors in the success of the digital transformation of Islamic education. Furthermore, the application of the maqasid sharia principle in the use of AI can help ensure that technology is used for the benefit of the community. With a balanced approach between technological innovation and Islamic values, Islamic religious education can develop adaptively without losing its identity and main goals.

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