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Artificial Intelligence-Based Learning Media in Islamic Religious Education Learning

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Abstract

The rapid development of digital technology in the modern era has significantly transformed the education sector, including Islamic Religious Education (IRE). The integration of artificial intelligence (AI) emerges as an innovation that supports adaptive, effective, and learner-centred learning while redefining teachers' roles as agents of educational transformation. This study aims to examine the concepts, applications, opportunities, and challenges of AI integration in IRE learning, with particular attention to teachers' innovative orientation. The research employs a qualitative approach through library research by reviewing relevant scientific literature. The findings indicate that AI can enhance IRE learning by enabling personalized instruction, providing rapid feedback, and offering interactive learning experiences aligned with the characteristics of the digital generation. Nevertheless, several challenges remain, including limited technological infrastructure, gaps in teachers' digital literacy, and the potential reduction of human interaction between teachers and students. In conclusion, teacher innovation is a crucial factor in optimizing the use of AI in Islamic education. Teachers are expected to act as facilitators, learning designers, and drivers of innovation who are able to integrate Islamic values with technological advancement to ensure that Islamic education remains relevant and competitive in the digital era.

Keywords

Artificial Intelegence, Challenges, Islamic Religious Education, Learning Media, Opportunities.

1. Introduction

In the modern era, technology has become an inseparable part of social activities, including education. Its widespread use encourages educational adaptation and brings both opportunities and challenges, particularly in the development of learning media. Learning media are shifting from traditional forms that are less responsive to students' needs toward more interactive, personalized, and feedback-oriented media aligned with learners' characteristics. Therefore, innovation in learning media is essential through the integration of digital technology, especially Artificial Intelligence (AI). AI-based learning media are considered capable of providing faster and more adaptive feedback while accommodating individual learning needs. This integration improves learning effectiveness and optimizes students' learning potential, while addressing the challenge of educational individualization (Sukmawati et al., 2024).

Integrating learning media using artificial intelligence is a step that can add color to learning, especially in Islamic Religious Education (ISE). Developing AI-based ISE learning designs is unavoidable. Implementing this concept is not limited to the use of digital devices; it also requires integrating various pedagogical approaches that align with students' learning characteristics in the digital age (Gupta, 2022). Many ISE teachers still rely on one-way lectures, memorization, and discussions, which often fail to maximize the potential of technology to make learning more adaptive, engaging, and relevant to today's students' lives.

Integrating Islamic Religious Education (ISE) learning with artificial intelligence can provide a more effective learning experience by increasing student engagement and enabling teachers to be more efficient in formulating lessons. Using AI-based media in Islamic Religious Education (ISE) can help ISE teachers develop more targeted and efficient learning strategies (Sukmawati et al., 2024). However, despite several implications of using AI-based media, it is not free from common challenges. The challenge in using AI-based media is technological readiness across schools, as schools that lack access to technology, either in the form of devices or internet networks, may struggle to adopt it (Hafiz et al., 2024). Then, each school has different capabilities in its facilities and infrastructure. Therefore, it is a challenge for all of us to provide teaching in the face of technological advances.

Several recent studies have shown that AI in Islamic education has begun to be adopted and provides tangible benefits. For example, research by Zaharah et al. (2024) particularly through personalization and targeted feedback in Islamic religious learning. Other research, such as Djazilan et al. (2024), explains how AI can strengthen character and ethics, and assist teachers and students in the islamic religious education learning process at Islamic schools in Gresik.

In addition, a study by Salim and Aditya (2025) highlights the trend of using AI to learn the Qur'an, Hadith, and digital learning media in Islamic environments, as well as obstacles such as technological infrastructure and access gaps across regions.

Seeing these conditions, it is very relevant for the development of AI-based learning media in Islamic Education to pay attention to several critical aspects: (1) the characteristics and learning needs of digital generation students, (2) the authenticity of Islamic values so that they are not reduced in the use of technology, (3) teacher readiness in digital literacy and the use of AI, and (4) the availability of infrastructure and equitable access. This article aims to develop a framework for AI-based learning media in Islamic Religious Education, identify opportunities and challenges, and provide recommendations to strengthen both students' cognitive development and their religious character.

2. Literature Review and Hypothesis Development

2.1. Basic Concepts of Artificial Intelligence in Islamic Religious Education

The rapid advancement of technology in the digital era has brought profound changes across various sectors of life, particularly in education. Among the emerging innovations, artificial intelligence has become one of the most influential forces driving educational transformation (Sholeh, 2023). Educational institutions are increasingly required to adapt to technological acceleration to remain relevant and responsive to contemporary learning needs. In education, AI is implemented through intelligent learning systems that use machine learning algorithms to analyze learning patterns, generate responses, and offer recommendations tailored to individual students. This capability allows AI to enhance learning efficiency while supporting more personalized and adaptive learning experiences (Suharyo et al., 2024; Sajja et al., 2024; Sari etal., 2024).

Artificial intelligence can be defined as a computer system designed to perform tasks that typically require human cognitive abilities, such as learning, audio-visual processing, and decision-making (Hafiz et al., 2024). In educational settings, AI plays an important role in developing adaptive learning systems, analyzing student learning data, and providing individualized feedback. These functions contribute to improving the effectiveness, efficiency, and overall quality of the learning process. However, despite its advanced capabilities, AI cannot fully replace the role of human educators. Teachers remain essential in guiding, managing, and directing the use of AI to align it with educational objectives, humanitarian values, and Islamic spirituality. In Islamic Religious Education, AI should therefore be positioned as a supportive tool that complements, rather than substitutes, the moral, spiritual, and character-building roles of teachers (Muis et al., 2025)

2.2. AI-Based Learning Media in Islamic Religious Education

The integration of artificial intelligence into learning media represents a strategic innovation in Islamic Religious Education. AI-based learning media contribute to creating more effective, interactive, and student-centered learning environments by adapting instructional content to students' abilities, learning styles, and progress (Syahrizal et al., 2024). Through machine learning algorithms, AI enables the personalization of Islamic learning materials, such as the Qur'an, hadith, fiqh, and moral education, in various formats including text, audio, visual, and interactive simulations (Hafiz et al., 2024). This personalization helps students engage more deeply with religious content and supports diverse learning needs.

Moreover, the availability of affordable and accessible AI tools and platforms expand educational opportunities and enhances learning effectiveness. AI also supports curriculum development and the creation of dynamic teaching materials by adjusting content difficulty, learning pace, and instructional strategies based on individual student data. Continuous formative assessment and instant AI-generated feedback further strengthen the learning process and enable timely academic support (Ubaidillah, 2024). Within this context, the role of teachers evolves from information transmitters to facilitators and mentors who focus on critical thinking, ethical reflection on technology, and the integration of Islamic values into digital learning practices. This transformation is essential for preparing students to navigate the challenges of the Society 5.0 era while maintaining strong religious and moral foundations (Hasanah, 2024; Adiyono & Anshor, 2024; Muis et al., 2025).

3. Methods

This study employs a qualitative library research approach that emphasizes the systematic collection, review, and analysis of data from relevant scholarly literature. The library research method is appropriate because it enables an in-depth,

comprehensive understanding of concepts, theories, and prior research findings relevant to the study's focus. The primary data sources include scientific articles, peer-reviewed academic journals, reference books, and other credible scholarly publications directly related to the research topic. The selection of literature is guided by specific criteria, including topical relevance, academic credibility of authors and publishers, and the contribution of the sources to the development of the field of study.

The research process begins with an extensive literature search conducted through academic databases and digital libraries. After the initial collection, the literature is screened to ensure its alignment with the research focus. Selected sources are then examined through careful and critical reading to identify key concepts, theoretical frameworks, methodological approaches, and significant findings relevant to the study. Important information from each source is documented and categorized by thematic similarity and conceptual relevance to facilitate systematic analysis.

Data analysis is carried out by comparing and evaluating perspectives and findings across the reviewed literature. This comparative process aims to identify patterns, conceptual relationships, and points of convergence and divergence among previous studies. Through this approach, the researcher can assess the strengths and limitations of existing research and position the current study within the broader academic discourse. Furthermore, a conceptual synthesis integrates various ideas and theoretical insights into a coherent, structured understanding of the research problem.

The conclusions of the study are developed through a comprehensive synthesis of the analyzed literature. By integrating theories, concepts, and empirical findings from previous studies, the researcher formulates conclusions that reflect a holistic understanding of the topic under investigation. This method allows the study to establish a strong theoretical foundation and provide an in-depth perspective on the research issue, thereby offering meaningful academic contributions and serving as a conceptual reference for future research.

4. Results

4.1. Integration of AI in Islamic Education Learning

The integration of Artificial Intelligence (AI) into Islamic religious education learning represents a strategic innovation that aligns with the demands of education in the digital era. Rapid developments in information technology have fundamentally transformed patterns of interaction, access to knowledge, and instructional methods across educational levels. In this context, AI emerges as a technological tool that can support the transformation of Islamic religious education learning toward more effective, interactive, and student-centered approaches. The implementation of AI in Islamic religious education is considered to have significant potential to foster essential twenty-first-century skills, including critical thinking, creativity, collaboration, and communication (Muthmainnah & Oteir, 2022; Annisa et al., 2024; Judijanto et al., 2024).

Through AI-based systems, Islamic religious education is no longer limited to a one-way transmission of religious knowledge but has evolved into a more dialogical and participatory process. Various AI-supported digital platforms allow students to access diverse Islamic knowledge sources, engage in virtual discussions, and produce contextual learning projects connected to daily religious practices. In addition, AI provides rapid, continuous feedback, enabling students to better understand complex Islamic concepts. This feedback mechanism helps learners reflect on their learning progress and improve comprehension in a timely manner.

The use of AI as a learning medium also offers advantages in terms of efficiency and accessibility. Students can learn flexibly at their own pace, according to their learning styles and needs. This flexibility contributes to increased motivation and active engagement in the Islamic religious education learning process. Such conditions are consistent with the findings of Taruklimbong and Sihotang (2023) and Edy and Sumarta (2024), who argue that AI integration in education encourages learning environments that are more efficient, effective, and inclusive.

From an Islamic perspective, the pursuit of knowledge holds a highly respected position. This principle is emphasized in Surah Al-Mujadilah verse 11, which states that Allah elevates the status of those who possess faith and knowledge. When contextualized within modern education, AI can be understood as a means to support this pursuit of knowledge. AI enables personalized learning experiences by adjusting materials and instructional methods to students' abilities and needs (Sururina & Kowi, 2024). Therefore, the integration of AI in PAI learning not only supports academic achievement but also strengthens students' spiritual and moral development

4.2. Application of AI in Islamic Religious Education Learning

Technological development has brought significant changes to various aspects of education, including Islamic Religious Education. As a subject that emphasizes character building, moral development, and the internalization of Islamic values, Islamic Religious Education must adapt to technological advancements in order to remain engaging and meaningful for students. The presence of Artificial Intelligence (AI) enables IRE learning to move beyond conventional instructional models toward more personalized, practical, and accessible approaches (Skiara et al., 2025).

One important form of AI application in Islamic Religious Education is self-learning. AI-based learning systems enable students to learn independently, with guidance tailored to their individual needs and abilities. These systems can adjust learning materials, difficulty levels, and presentation methods based on students' learning profiles. For instance, AI-based Qur'an learning applications use voice recognition to assess tajwid accuracy, provide immediate corrections, and guide students in proper Qur'anic recitation. Such applications support both reading and memorization processes in a more structured and interactive manner.

Another prominent application of AI is the use of virtual assistants and chatbots equipped with Natural Language Processing (NLP). These technologies enable students to ask questions related to Qur'anic interpretation, hadith, fiqh, and Islamic history at any time and from any location. Educational chatbots provide contextual and relevant responses, making the learning experience more interactive and responsive, even outside formal classroom settings.

In addition, adaptive and personalized learning systems powered by AI allow learning content and methods to be adjusted according to students' pace and cognitive development. AI-based interactive technologies such as Voice Assistants, Augmented Reality (AR), and Virtual Reality (VR) further enhance learning experiences. AR and VR technologies, for example, enable students to explore Islamic historical sites or experience reconstructions of significant events. These immersive experiences support both cognitive understanding and spiritual engagement, making Islamic Religious Education more meaningful and contextual for learners.

4.3. Effectiveness and Implications of AI in Islamic Education Learning

Several empirical studies indicate that the application of Artificial Intelligence (AI) in Islamic Religious Education significantly and positively impacts the quality and effectiveness of learning. Research conducted by Ayatillah et al. (2025) and Strielkowski et al. (2025) demonstrates that AI improves learning efficiency by providing adaptive learning tools, including digital modules, teaching materials, and

interactive media specifically designed to meet students' learning needs. These AI-based tools enable the learning process to become more flexible and responsive, as instructional content can be adjusted based on students' abilities, learning pace, and individual characteristics. As a result, learning becomes more relevant, targeted, and effective, particularly in addressing diverse student needs within Islamic Religious Education classrooms.

Similarly, a study by Sapura and Basri (2024) reveals that the implementation of AI in Al-Islam learning fosters a more active, innovative, and creative learning environment. The integration of AI-supported technology enables learning materials to be presented in more interactive, visually engaging formats, helping students grasp abstract religious concepts more easily. This approach aligns well with the characteristics of digital-native learners, who tend to respond positively to multimedia-based and technology-enhanced instruction. However, despite these advantages, the study also identifies several limitations in AI implementation. These include variations in teachers' readiness and competence in utilizing AI technology, as well as unequal access to technological infrastructure across educational institutions. Such challenges highlight the need for systematic teacher training and equitable infrastructure development to ensure effective AI integration.

Further findings from Mundofi's (2025) research on AI-based adaptive learning in Islamic Religious Education indicate notable improvements in several key aspects of the learning process. The study reports increased student motivation, greater accessibility to learning resources, and enhanced flexibility for teachers in designing problem-based and student-centered learning activities. The use of AI tools, such as Canva AI, supports visual learning and enables the presentation of Islamic Religious Education materials in more attractive and comprehensible formats. This approach is particularly effective for students belonging to the digital generation, who are accustomed to visual and interactive learning environments.

5. Discussion

The discussion on the implementation of Artificial Intelligence (AI) in Islamic Religious Education (IRE) indicates that this technology holds significant potential to transform the learning process into a more adaptive, inclusive, and efficient model. These findings are consistent with the perspective of Muis et al. (2025), who emphasize that AI enables personalized learning based on students' abilities, needs, and individual characteristics. Compared with conventional instructional approaches that tend to use uniform learning strategies, AI offers greater flexibility by enabling adjustments to learning materials, methods, and media, thereby enhancing the overall effectiveness of instruction in Islamic religious education.

Critically, the findings on AI-based adaptive learning reinforce previous studies highlighting the importance of student-centered learning in Islamic education. AI functions not merely as a technical support tool but as a pedagogical system capable of analyzing students' learning patterns and providing relevant instructional recommendations. Unlike general digital learning platforms, AI demonstrates a strategic advantage through its analytical capacity and responsiveness, making it particularly effective in supporting differentiated instruction within Islamic religious education classrooms (Urazaliyevna, 2025; Ndjama, 2025).

In terms of efficiency and accessibility, this discussion builds on earlier findings by highlighting AI's role in reducing teachers' administrative workload and expanding access to diverse, interactive Islamic learning resources. Compared to traditional Islamic education practices that rely heavily on face-to-face instruction and printed materials, AI enables wider dissemination of religious knowledge through digital platforms (Urazaliyevna, 2025; Ndjama, 2025). Nevertheless, this study also confirms the persistence of a digital divide due to limited technological infrastructure and unequal access, especially in remote areas. This condition

underscores the importance of educational policies that ensure equitable access to technology so that AI integration does not exacerbate disparities in the quality of Islamic education.

From an inclusive learning perspective, the application of AI to support students with special needs aligns closely with Islamic principles of justice and equality. These findings extend previous discussions by positioning AI as an empathetic tool that can respond to individual learning needs. However, concerns about the potential decline in the quality of teacher–student relationships, as noted by Fauzi et al. (2025), underscore the need to maintain a humanistic approach in Islamic religious education. Moral and spiritual values cannot be fully transmitted through technology alone, making the teacher's role as a spiritual guide indispensable.

The practical implications of this discussion require Islamic religious education teachers to enhance their technological competencies while preserving their pedagogical and moral responsibilities. At the policy level, these findings suggest the need for sustained teacher training programs, strengthened technological infrastructure, and clear ethical guidelines for the use of AI in Islamic education. As emphasized by Muis et al. (2025), AI should be positioned as a strategic partner rather than a replacement for teachers. Ultimately, the successful integration of AI in Islamic Religious Education depends on balancing technological innovation with the spiritual essence of Islamic values, ensuring that education remains humane, just, and contextually relevant

6. Conclusion

The research indicates that integrating Artificial Intelligence (AI) into Islamic religious education can significantly enhance the quality, effectiveness, and attractiveness of the learning process. The main findings show that AI supports more adaptive and personalized learning in accordance with students' needs, while also assisting teachers through rapid access to references and greater flexibility in designing teaching materials and innovative instructional methods. Thus, the research objective of analyzing the role and benefits of artificial intelligence in Islamic religious education learning has been addressed, confirming that AI can serve as a strategic instrument to bridge the needs of teachers and students in the digital era.

Nevertheless, this study also identifies several challenges that warrant careful consideration, including limitations in technological infrastructure, the potential decline in humanistic interaction between teachers and students, and the risk of overdependence on technology. Therefore, the use of AI in IRE learning must be implemented wisely, ensuring that teachers remain central to guiding learning and fostering students' moral and spiritual development. Based on these findings, future research is recommended to explore further balanced AI implementation strategies that integrate technological innovation with the strengthening of Islamic values. In addition, subsequent studies should examine policy models, teacher readiness, and infrastructure preparedness to support equitable and sustainable AI integration in Islamic Religious Education.

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Data Disclosure Statement
The data that support the findings of this study are available from the corresponding author upon reasonable request.