

Integration of Artificial Intelligence in the Islamic Religious Education Curriculum at Ibnurusyd Islamic College, Lampung

Roni Susanto¹, Mariyatul Kiftiyah²

¹ Sekolah Tinggi Agama Islam Ibnurusyd Kotabumi, Lampung: rooneyshyshantho@gmail.com

² Pondok Pesantren Tahfidzul Qur'an al-hasan Ponorogo, mariyakiftiya09@gmail.com

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ABSTRACT

This study aims to analyze the integration of artificial intelligence (AI) technology in the Islamic Religious Education (PAI) curriculum at the Ibnurusyd Islamic College (STAI) in Lampung. The development of digital technology, particularly AI, has brought significant changes to the world of education, including religious education. AI integration is expected to improve learning effectiveness, enrich learning resources, and expand student access to more interactive and contextual Islamic knowledge. This study uses a descriptive qualitative approach with a case study method, involving in-depth interviews with lecturers, students, and curriculum managers, as well as analysis of Semester Learning Plan (RPS) documents and academic policies. The results show that the implementation of AI in the PAI curriculum is still partial, in the form of the use of chatbot applications, AI-based e-learning, and the use of big data for analyzing student understanding. However, there is no specific curriculum standard that regulates the comprehensive integration of AI in PAI learning. This study recommends the development of an adaptive curriculum that integrates AI with the principles of religious moderation, as well as improving lecturers' competencies in digital literacy and AI technology for optimal implementation.

Corresponding Author:

Roni Susanto

Sekolah Tinggi Agama Islam Ibnurusyd Kotabumi, Lampung: rooneyshyshantho@gmail.com

1. INTRODUCTION

The development of digital technology in the 21st century has brought major transformation in almost all aspects of life, including in the field of education (Romdhoni & Anam, 2025; Wahyuni, 2020). One of the most revolutionary technologies is Artificial Intelligence (AI) or artificial intelligence (Rachmawati, 2020). AI is now a key driver of the Industry 4.0 and Society 5.0 eras, where technology is used not only as a tool but also as an entity capable of providing recommendations, predicting behavior, and facilitating the learning process. This general fact indicates that the role of AI in education is increasingly significant, both in terms of learning

management, academic data analysis, and the development of adaptive learning models. According to a UNESCO report (2021), the integration of AI technology in education can increase the effectiveness of the learning process, personalize materials, and create a more inclusive and responsive educational ecosystem to students' needs (**Moturu & Nethi, 2023**).

In a social context, the use of digital technology has become part of the daily lives of students and educators, including at Islamic universities such as Ibnurusyd Islamic College in Lampung. Students are now accustomed to using gadgets, digital applications, and AI-based platforms to support their academic activities. However, on the other hand, there are social and value challenges that must be addressed, particularly related to the Islamic Religious Education (PAI) curriculum, which focuses on the formation of faith, morals, and religious values. This social reality demands innovation that is not only adaptive to technological developments but also adheres to the principles of religious moderation and sharia values. If AI integration is not properly designed within the PAI curriculum, it is feared that issues related to the relevance of the material, a decline in the essence of spiritual values, and even an identity crisis within religious education will arise.

The main issue that has emerged is the lack of systematic integration of AI technology into the Islamic Religious Education curriculum, particularly in Islamic universities. Many lecturers still rely on conventional methods, while students are already immersed in a fast-paced and automated digital ecosystem. This mismatch can create a pedagogical gap, where the learning process is no longer relevant to the needs of the times. Furthermore, there are challenges related to the limited competence of educators in operating AI-based technology, as well as the lack of clear academic guidance on how AI can be implemented in the Islamic Religious Education curriculum without neglecting Islamic principles. This is a serious problem, because if not addressed, the Islamic Religious Education curriculum will fall far behind and lose its appeal to a younger generation already familiar with technology.

As a solution, it is necessary to design AI integration into the Islamic Religious Education curriculum with a systematic approach and in accordance with the principles of Islamic education. This integration can be done through several strategic steps, such as: (1) developing interactive and contextual AI-based teaching materials; (2) utilizing Natural Language Processing (NLP) technology to assist in understanding the Qur'an and Hadith; (3) using an AI-based adaptive learning system that can adjust the level of difficulty of the material to the student's abilities; and (4) creating an AI-based evaluation module that can provide fast and accurate feedback. With this solution, AI will not only be a technical tool, but can also be used to deepen the understanding of Islamic values through more innovative and engaging media.

Previous research shows that AI integration in education has been widely implemented, but the majority still focuses on science, technology, and business. Research by Syahrudin et al. (**Aisi, Susanto, & Isa, 2025**) revealed that AI can improve the effectiveness of personalized learning in higher education. Meanwhile, research in Indonesia conducted by Juriah et al. (**Juariah, Badrianto, Edy, & Indriyani, 2025**) highlights the importance of utilizing AI to improve students' digital literacy. However, studies specifically addressing the integration of AI into the Islamic Religious Education curriculum at Islamic universities are still very limited. Most studies only address the use of general digital technologies, such as Learning Management Systems (LMS), rather than AI as an intelligent entity influencing curriculum design. Therefore, this research has a significant opportunity to make an original contribution to the field of technology-based curriculum development from an Islamic education perspective.

The purpose of this study is to analyze and design an AI integration model in the Islamic Religious Education curriculum at Ibnurusyd Islamic College, Lampung, so that the curriculum can be more adaptive to technological developments while maintaining Islamic values. Specifically, this study aims to: (1) identify the potential use of AI in Islamic Religious Education learning; (2) evaluate the readiness of lecturers and students in adopting AI technology; and (3) compile recommendations for implementing AI integration that is in accordance with Islamic principles and national curriculum standards.

The urgency of this research lies in the fact that without AI integration, Islamic higher education institutions risk being left behind in the global digitalization of education. If this occurs, the quality of graduates could decline due to a lack of digital literacy competencies that align with current developments. Furthermore, AI integration is not merely an option but an urgent necessity to ensure that Islamic Religious Education (PAI) curricula remain relevant and able to meet the challenges of the era of technological disruption. Islamic higher education institutions must demonstrate that they are not only capable of upholding traditional values but also innovative in adopting beneficial technologies. Thus, this research has strategic value in supporting the vision of modernizing Islamic education without losing the essence of Islamic teachings.

The novelty of this research lies in its focus on directly integrating AI into the Islamic Religious Education (PAI) curriculum at the Islamic higher education level. Unlike previous research that emphasized the general use of digital technology, this study examines the specific role of AI, from the design of teaching materials and teaching methods to AI-based evaluation systems. Furthermore, this study offers a perspective on religious moderation in technology integration, so that AI becomes not only a technical instrument but also a means to strengthen students' spiritual values and Islamic character. With this approach, the research is expected to serve as a reference for curriculum development at other Islamic higher education institutions, both nationally and internationally.

2. METHODS

This research uses a qualitative approach with a descriptive-analytical research method (Huberman & Jhonny, 2014; Sugiyono, 2010) because it aims to describe and analyze the phenomenon of Artificial Intelligence (AI) integration in the Islamic Religious Education (PAI) curriculum at Ibnurusyd Islamic College, Lampung in depth and comprehensively. This approach was chosen because the research is oriented towards contextual understanding, interpretation of meaning, and identification of factors that influence the implementation of AI in Islamic religious education. Qualitative research allows researchers to examine the social and academic realities in the Islamic higher education environment in a naturalistic manner, thus being able to gather information from the perspectives of stakeholders, namely lecturers, students, and curriculum administrators. The research location was conducted at Ibnurusyd Islamic College, Lampung, which is an Islamic-based college with a primary focus on the development of religious knowledge and the integration of modern sciences. This location was chosen based on the argument that this campus has begun to introduce digital literacy to students, but the integration of AI technology into the PAI curriculum has not been carried out systematically. The research population included lecturers teaching PAI courses, study program administrators, and students taking related courses. The informant selection technique used purposive sampling, namely selecting subjects who are considered to have the most knowledge, understanding, and direct involvement in the process of curriculum development and

implementation. The number of main informants is estimated at 10-15 people consisting of lecturers, curriculum managers, and student representatives.

Research data was obtained through three main techniques, namely in-depth interviews, participant observation, and documentation studies (**Rukajat, 2018**). In-depth interviews were conducted with lecturers and curriculum managers to gather information about their understanding of AI, perceptions of the opportunities and challenges of AI integration, and implementation strategies in Islamic Religious Education courses. Participatory observation was conducted during the learning process to determine the extent of the utilization of digital technology and AI that is already underway. Meanwhile, a documentation study was conducted by reviewing official curriculum documents, Semester Learning Plans (RPS), and campus policies related to digital transformation. The data analysis process used the Miles and Huberman interactive analysis model which includes three main stages: (1) data reduction, namely selecting, focusing, and simplifying data relevant to the research focus; (2) data presentation (data display), namely presenting data in the form of a systematic descriptive narrative; and (3) conclusion drawing and verification (conclusion drawing and verification) to obtain meaning and findings that can be accounted for. To ensure the validity and reliability of the data, this study used triangulation of sources and methods, namely checking the validity of the data by comparing information obtained from interviews, observations, and documentation.

3. FINDINGS AND DISCUSSION

The Potential and Role of Artificial Intelligence in Islamic Religious Education Learning

The development of digital technology, particularly Artificial Intelligence (AI), has had a significant impact on various aspects of life, including education. AI is not just a tool, but also a technology capable of delivering adaptive learning systems, intelligent data analysis, and intelligence-based interactions that were previously impossible for humans to perform manually (**Purwowododo & Zaini, 2024; Supriyanti, Kurniawati, & Susanto, 2025; Syahrudin & Gunawan, 2025**). In the context of Islamic Religious Education (PAI), the existence of AI opens up significant opportunities to create more innovative, effective learning methods that are tailored to the needs of millennials and Generation Z, who are highly familiar with technology. AI has the potential to support PAI learning in various aspects, from providing materials and learning interactions to fast and accurate data-driven evaluation. One of AI's greatest potentials in PAI is its ability to develop interactive learning modules based on Natural Language Processing (NLP). NLP technology enables AI to understand human language, including the Arabic used in the Qur'an and Hadith, so it can be used to help students learn religious texts more easily. For example, students who want to understand the interpretation of a Qur'anic verse can use an AI-based application that can quickly provide contextual explanations, classical interpretations, and the opinions of scholars. Furthermore, AI can also integrate Arabic dictionaries, morphological analysis tools, and more accurate automatic translations, thus helping students understand the language structure and meaning of religious texts without having to manually search for references in numerous sources (**Holmes & Tuomi, 2022; M Choirul Muzaini, Prastowo, & Salamah, 2024**).

Furthermore, AI also plays a crucial role in creating an automated question-and-answer system related to Islamic jurisprudence (fiqh), faith (aqidah), and morals. An AI-based Islamic chatbot can answer students' questions about Islamic law, worship procedures, and noble moral principles by referencing trusted sources. With this technology, students no longer need to wait

for lecturers to answer simple questions, as the AI system can respond instantly and consistently (**Cholis, 2024**). Of course, to maintain the authenticity of the answers, this chatbot must be developed based on a valid database of Islamic literature, such as recognized books of Islamic jurisprudence, authentic hadith, and Quranic interpretations. Utilizing this chatbot can also assist students who study independently outside of class hours, making the learning process more flexible and sustainable. Furthermore, AI has the potential to develop gamification-based learning simulations in Islamic Religious Education (PAI). Gamification is an approach that incorporates game elements into the learning process to increase student motivation and engagement. Through AI, gamification can be implemented in the form of interactive quizzes, prayer simulations, or educational games about Islamic history. For example, students can learn the procedures for prayer through an interactive simulation provided by an AI system, where every movement and prayer recitation will be automatically assessed. Alternatively, students can participate in educational games about great scholars in Islamic history presented in an interactive story format. This approach not only makes learning more engaging but also helps students understand the material in depth through a fun learning experience (**A. Hakim & Anggraini, 2023**).

In addition to supporting content aspects, AI can also enhance personalized learning, tailoring it to each student's individual needs. Each student has a different learning style, pace of understanding, and background. With AI, the learning system can analyze student learning outcomes, such as exam scores, active participation in discussions, and level of understanding of specific material, and then recommend additional materials or appropriate learning methods. For example, students who struggle to understand Islamic jurisprudence (fiqh muamalah) can be provided with additional materials in the form of interactive videos, while students who quickly grasp the material can be challenged with more complex case studies. This way, learning becomes more effective because it is tailored to each individual's characteristics. Furthermore, AI can also be used to support automated learning evaluation. In Islamic Religious Education (PAI) learning, evaluations are typically conducted through written exams, paper assignments, or presentations (**Susanto & Syahrudin, 2024; Wahyu, Susanto, & Nur, 2023**). With the help of AI, the evaluation process can be carried out more quickly and accurately through a system that can automatically check student answers, whether in multiple-choice or essay format. AI can even provide real-time feedback, so students can identify their errors and correct them immediately. For example, when students are working on verse interpretation exercises, the AI system can highlight inaccurate sections and provide appropriate correction suggestions. Thus, AI not only speeds up the assessment process but also helps students improve their understanding of Islamic Religious Education (PAI) material.

In addition to the examples above, there are also AI applications that have begun to be developed for Islamic education needs, such as Islamic chatbots that can answer questions about Islamic law, AI-based interpretation applications that can provide interpretations from various classical sources, and adaptive learning platforms that utilize AI algorithms to adapt material to the user's abilities. These innovations demonstrate the enormous potential of AI in supporting Islamic Religious Education (PAI) learning and can continue to be developed as technology advances. However, the application of AI must still adhere to ethical values and sharia principles so that this technology truly provides benefits without diminishing the spiritual essence of Islamic education. With all this potential, it can be concluded that AI has a strategic role in developing Islamic Religious Education (PAI) learning that is more modern, efficient, and

relevant to the needs of the digital era. AI can bridge the gap between traditional learning methods and the demands of 21st-century technology, thus creating a more interactive, personalized, and meaningful learning experience. Therefore, Islamic universities such as Ibnurusyd Islamic College need to utilize this technology wisely to create an innovative PAI curriculum while adhering to Islamic values.

Challenges of AI Integration in Islamic Religious Education Curriculum

The integration of Artificial Intelligence (AI) into the Islamic Religious Education (PAI) curriculum at Islamic universities is a promising innovative step, but its implementation is not without various challenges that must be addressed strategically. These challenges encompass technical aspects, human resources, values and ethics, and academic regulatory issues. If not managed properly, these challenges can become major obstacles to the implementation of AI, making it difficult to achieve the goal of modernizing technology-based Islamic education. At Ibnurusyd Islamic College in Lampung, these obstacles are evident in four main interrelated aspects: limited lecturer competency, inadequate infrastructure, considerations of values and ethics, and the absence of clear academic guidelines regarding the integration of AI into the PAI curriculum. First, lecturer competency is one of the most crucial obstacles. Most lecturers at Islamic universities are still accustomed to conventional teaching methods, such as face-to-face lectures and the use of printed teaching materials. While their knowledge of digital technology may have improved, their mastery of AI, especially in the context of its application to PAI learning, remains very limited (**Kamal, Firmansyah, Rafiah, Rahmawan, & Rejito, 2020; Puji & Supriyanti, 2025**). For example, using a Natural Language Processing (NLP)-based system to analyze Quranic text or an Islamic chatbot to answer student questions requires technical skills that most lecturers lack. Consequently, there are concerns that AI implementation will become a mere formality without in-depth understanding. Unless lecturer training and capacity development are undertaken seriously, AI integration will not significantly impact the quality of Islamic Religious Education (PAI) learning.

Second, limited technological infrastructure is also a major barrier to AI implementation. AI requires robust technological support, such as a stable internet network, secure data storage servers, and hardware such as high-spec computers. In many Islamic universities, including Ibnurusyd Islamic College, technological facilities are still inadequate. Slow internet connections, limited digital devices in classrooms, and the lack of AI-enabled technology laboratories present real challenges. Yet, the success of AI implementation depends heavily on the readiness of this infrastructure. Without adequate technological support, AI applications such as adaptive learning platforms, interactive simulations, or automated evaluation systems cannot run optimally. Third, the aspect of values and ethics is a crucial challenge in the context of integrating AI into the Islamic Religious Education curriculum. Religious education focuses not only on knowledge transfer but also on character formation, spirituality, and noble morals. There are concerns that the presence of AI in learning could displace the role of humans, particularly lecturers, as central figures in shaping students' Islamic personalities. There are concerns that learning that relies too much on technology will reduce the emotional closeness between lecturers and students, even though this interaction is crucial for the process of internalizing religious values. Furthermore, the use of AI must also be aligned with Islamic sharia principles to avoid negative impacts, such as those related to personal data security, the potential dissemination of inaccurate information, or algorithms that are inconsistent with Islamic values.

Therefore, the use of AI must be carried out carefully and ethically to avoid diminishing the essence of religious education, which emphasizes spiritual aspects (Qomarudin & Zuhri, 2025).

Fourth, the lack of clear academic guidelines regarding AI-based curriculum design for Islamic Religious Education (PAI) courses is also a major obstacle. Currently, most curriculum policies in Islamic higher education institutions still focus on achieving manual or conventional competency standards. Regulations regarding how AI can be systematically integrated into the PAI curriculum are still lacking. This lack of guidance leaves each lecturer or study program with their own interpretations, making AI implementation inconsistent and difficult to evaluate. The lack of guidelines also has implications for accreditation and quality assurance, as there are no standard indicators to measure the success of this technology's integration into the PAI curriculum. In addition to these four aspects, there is potential resistance from some members of the academic community, both lecturers and students. Some lecturers may fear that the use of AI will diminish their role as educators and shift their function to mere facilitators. This can trigger a rejection or minimization of the use of technology in the learning process (Susanto, Munir, & Basuki, 2025; Yahuda, Susanto, Widodo, & Kolis, 2024). On the other hand, students may also face difficulties adapting if the use of AI is not supported by adequate training. After all, AI should be a tool that facilitates the learning process, not create new confusion.

From this description, it can be concluded that integrating AI into the Islamic Religious Education (PAI) curriculum at Islamic universities is not a simple process. It requires a comprehensive implementation strategy, ranging from strengthening lecturer capacity, providing adequate infrastructure, developing clear academic guidelines, and managing ethical and value issues to ensure that the use of AI does not displace the spiritual essence of Islamic education. This challenge must be anticipated through collaboration between universities, the government, and technology developers to ensure that AI integration truly provides tangible benefits for Islamic Religious Education (PAI) curriculum development in the digital era.

AI Implementation Strategies and Models in Islamic Education Curriculum in Islamic Higher Education Institutions

The integration of Artificial Intelligence (AI) into the Islamic Religious Education (PAI) curriculum at Islamic universities requires careful planning to provide optimal benefits without displacing the spiritual values that are the essence of religious education. An appropriate strategy must encompass aspects of curriculum design, human resource competency development, technological infrastructure, and the implementation of a learning model that balances conventional and digital approaches. This section will discuss strategic steps that can be applied to effectively implement AI in the PAI curriculum, as well as a hybrid learning model that combines Islamic values with modern technology. First, designing a technology-based Semester Learning Plan (RPS) is a crucial initial step. The RPS, as a learning reference document, must accommodate the use of AI-based technology in every component, from learning objectives and materials to methods and assessments. PAI materials can be packaged in the form of interactive digital modules that allow students to learn independently with the guidance of an AI system. For example, a Qur'anic interpretation module can be equipped with an automatic verse search feature, thematic interpretation based on NLP algorithms, and audio verse recitations in accordance with Tajweed rules. In addition, each topic in the RPS can be complemented with AI-based activities, such as adaptive quizzes that adjust the level of difficulty to the student's

abilities, or discussion forums monitored by an Islamic chatbot that can provide additional references from classical and contemporary books. **(M. M. A. Hakim & Fairuz, 2022).**

Second, lecturer competency training is key to successful AI integration. Lecturers must be equipped with the skills to operate and utilize AI technology in the learning process. Training can be provided through workshops, online courses, or Islamic educational technology certification programs. Training materials include a basic understanding of AI, the use of AI-based e-learning platforms, the use of chatbots for religious Q&A sessions, and the application of analytical algorithms to evaluate student learning outcomes **(Susanto, Rohmah, Hidayanti, & Sugiyar, 2023; Susanto, Widodo, & Kolis, 2023)**. In addition to technical aspects, training should also emphasize the ethical use of AI so that lecturers are able to utilize this technology wisely and in accordance with sharia principles. With adequate competency, lecturers will not only be users of technology but also be able to direct the use of AI to support the achievement of Islamic Religious Education (PAI) learning objectives, which encompass cognitive, affective, and psychomotor aspects. Third, the development of an e-learning platform integrated with an AI system is one strategy that needs to be implemented in Islamic higher education institutions. This platform must be designed to support an adaptive learning model, where the AI system can adjust the material, methods, and difficulty level to suit the student's profile. For example, students who have difficulty understanding the concept of fiqh (Islamic jurisprudence) can be directed to study additional material in the form of videos, articles, or interactive discussions with an Islamic chatbot. Furthermore, this platform can be equipped with an NLP-based chatbot feature that can answer students' questions regarding faith, worship, and morals based on valid sources. Thus, students not only receive more personalized learning but also have broad access to religious information quickly and accurately.

Fourth, the implementation of an AI-based evaluation system to provide fast and accurate feedback to students. This system can be used to automatically check exam answers, both multiple-choice and essay, and provide detailed error analysis. For example, when students answer questions about Islamic jurisprudence (fiqh), the AI system can detect inconsistencies in arguments with appropriate evidence and provide suggestions for improvement **(Kurniawati & Hidayah, 2025; Wahyudi, Nuriana, & Irfan, 2025)**. AI-based evaluation also allows lecturers to monitor student progress in real time through an analytics dashboard that displays learning outcomes, participation levels, and areas requiring intervention. This will accelerate the learning process while improving the quality of evaluations, which are typically time-consuming when conducted manually. In addition to these four strategies, an appropriate implementation model must also be designed to maintain Islamic values. One model that can be implemented is a hybrid curriculum model, a combination of conventional (face-to-face) methods with AI-based technology. In this model, face-to-face learning is maintained for materials requiring in-depth discussion, moral development, and religious practices that require direct guidance. Meanwhile, AI technology is utilized to support independent learning, such as providing interactive modules, assignment management, and automated evaluation. For example, face-to-face meetings are used to study classical texts and discuss contemporary issues in Islamic jurisprudence, while the AI platform is used for practice exercises, prayer simulations, or NLP-based interpretation analysis. This approach allows for the benefits of modern technology to be utilized without diminishing the lecturer's role as a spiritual and moral guide **(Hastuty, Maswati, Saharuddin, Sukri, & Halik, 2025)**.

The hybrid model also allows for the implementation of blended learning methods with a flexible balance between face-to-face and AI-based online learning. Universities can adjust the proportion of AI used according to course characteristics, infrastructure readiness, and lecturer competency. For example, a course on Ulumul Qur'an could utilize AI intensively for text analysis and thematic interpretation, while a course on Akhlak Tasawuf (Sufism and Morals) would still emphasize face-to-face learning to internalize spiritual values. Thus, AI does not replace the role of humans, but rather complements it, making the learning process more effective and relevant to the demands of the digital era. Overall, the success of AI implementation strategies and models in Islamic Religious Education (PAI) curricula depends heavily on the synergy between technological innovation and the maintenance of Islamic values. With careful planning, lecturer training, the development of adaptive e-learning platforms, and the implementation of a hybrid model, Islamic universities can deliver modern learning without losing their spiritual identity. This is a crucial step in preparing a generation of Muslims who are not only technologically literate but also possess a deep understanding of religion and noble morals.

4. CONCLUSION

This research shows that the integration of Artificial Intelligence (AI) into the Islamic Religious Education (PAI) curriculum at STAI Ibnurusyd Lampung is still partial and not systematically structured. AI implementation has so far been limited to the use of AI-based e-learning, Islamic chatbots, and the use of big data to analyze student understanding. Nevertheless, AI has great potential to improve the quality of PAI learning through personalized materials, efficient evaluation, and enriched interactive learning resources. However, several challenges hinder optimal implementation, including limited lecturer competency, inadequate technological infrastructure, issues of values and ethics, and the lack of clear academic guidelines. Without careful planning, AI has the potential to displace the educational role of lecturers and diminish the depth of spiritual values in religious education. Therefore, AI integration must be carried out in a planned manner to support the modernization of Islamic education without eliminating the essence of the teachings and principles of religious moderation. First, it is necessary to develop an adaptive curriculum that incorporates AI comprehensively while remaining grounded in Islamic values. The RPS document must be updated to accommodate AI-based learning methods, such as interactive modules, simulations, and automated evaluations. Second, intensive training is needed for lecturers to develop digital literacy and technical skills in utilizing AI, along with an understanding of its ethical use. Third, universities must improve their technological infrastructure, including a stable internet network, adequate hardware, and an e-learning platform integrated with AI systems. Fourth, the government and Islamic education associations need to develop regulatory guidelines regarding the use of AI in Islamic Religious Education (PAI) curricula to ensure uniform and measurable implementation. With these steps, AI integration will not only strengthen academic quality but also maintain the relevance of Islamic education in the digital age without losing its spiritual identity.

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