

Transformation of Islamic Education Learning Based on Artificial Intelligence to Improve Digital Literacy and Modern Santri Character

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ABSTRACT

The rapid development of Artificial Intelligence (AI) has transformed learning systems, including Islamic education, by creating opportunities to enhance digital literacy while maintaining students' moral and religious character. This study aims to analyze the transformation of AI-based Islamic education learning, examine the role of AI in strengthening the digital literacy of modern santri, and formulate a learning model that integrates AI with Islamic character education. This research employed a qualitative approach using a library research design. Data were collected from books, scientific journal articles, policy documents, and other relevant academic sources related to artificial intelligence, digital literacy, Islamic education, and character development. Data were analyzed through content analysis using the stages of data condensation, data display, and conclusion drawing. The findings indicate that AI significantly enhances learning effectiveness through personalized instruction, broader access to educational resources, and the development of critical thinking and digital competencies. However, its implementation must remain grounded in Islamic values, with teachers maintaining their essential roles as educators and moral guides. This study proposes the AI Humanistic Islamic Learning Model, which integrates AI utilization, digital literacy, and Islamic character values into a comprehensive learning framework. The model is expected to produce digitally competent, ethically responsible, and morally grounded santri capable of addressing the challenges of the digital era.

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1. INTRODUCTION

The development of digital technology in the era of the Industrial Revolution 4.0 and Society 5.0 has brought about major changes in various aspects of human life, including education. The emergence of artificial intelligence (AI) has become one of the most influential technological innovations in transforming modern learning systems (Juariah, Badrianto, Edy, & Indriyani, 2025; Susanto & Kiftiyah, 2025). AI is not only being utilized in the industrial and economic sectors, but is also beginning to be applied in education to improve learning effectiveness, personalize materials, automate evaluations, and develop student skills. In the context of Islamic education, this technological development presents both a challenge and an opportunity to introduce learning models that adapt to current developments without abandoning the Islamic values that are the primary foundation of education (Mujahid, 2021; Sabiq, 2022). Therefore, Islamic educational institutions, especially Islamic boarding schools, are required to transform their learning so that they can produce a generation of students who have digital competence and an Islamic character.

Socially, the phenomenon of digitalization has transformed the learning patterns of the younger generation. Students, as part of the current digital generation, live in an environment closely connected to the internet, social media, learning apps, and various AI-based platforms such as ChatGPT, Gemini, Copilot, and other supporting technologies (Gao & Kutz, 2026; Purwowododo & Zaini, 2024; Yoganarasimhan & Iakovetskaia, 2024). Data shows that internet usage in Indonesia continues to increase year after year, particularly among productive age groups and students. This has led to a shift in information access, from relying on teachers and textbooks to becoming more accessible through digital access. On the one hand, this development facilitates the acquisition of knowledge. However, on the other hand, the rapid flow of information also gives rise to various problems, such as low digital literacy skills, the spread of hoaxes, academic plagiarism, misuse of technology, a decline in critical literacy, and the degradation of the character of the younger generation. This phenomenon is also beginning to be felt in Islamic boarding schools (*pesantren*), which have long been known as educational institutions based on values, morals, and character building (Paduli, 2025; Suhardi, 2025; Susanto & Sugiyar, 2023).

Although AI technology offers various conveniences in the learning process, its implementation in Islamic education still faces several challenges. First, most Islamic educational institutions do not yet have a learning model capable of systematically integrating AI with Islamic educational values (Juariah et al., 2025; Taufik, 2020). Second, the use of AI still tends to be cognitively oriented and has not been directed to support the character development of Islamic students. Third, the digital literacy skills of Islamic students and educators vary, resulting in suboptimal use of technology. Fourth, concerns have arisen that uncontrolled use of AI could

diminish the role of teachers, weaken the culture of talaqqi (religious dispensation), decrease critical thinking skills, and shift moral values within the Islamic education process. Fifth, there is still a lack of research specifically addressing the transformation of AI-based Islamic education learning that is oriented toward strengthening digital literacy while simultaneously developing the character of modern Islamic students (Hakim & Anggraini, 2023).

Based on these issues, a transformation of Islamic education is needed that can integrate artificial intelligence in a constructive, educational, and Islamic-based manner. This transformation can be achieved through the development of an AI-based learning model that positions technology as a learning aid, not a substitute for the teacher. The use of AI can be directed to support personalized learning, expand access to learning resources, improve critical thinking skills, strengthen digital literacy, and instill character values such as honesty, responsibility, discipline, religious moderation, and digital media ethics. Thus, AI becomes not only a technological instrument but also an educational medium that supports the development of 21st-century competencies while strengthening the Islamic identity of students.

Several previous studies have shown that the use of digital technology in education can improve learning effectiveness. Research conducted by Holmes, Bialik, and Fadel explains that AI has great potential to create more personalized and adaptive learning tailored to students' needs (Wahyudin et al., 2025). Other research shows that digital literacy is an important competency that students must have to face global challenges (Cholis, 2024). Meanwhile, research on character education in Islamic boarding schools (pesantren) confirms that moral development is a primary goal of Islamic education, which must be maintained amidst technological advancements. However, most studies still discuss AI, digital literacy, and character education separately. Research on the integration of these three aspects within the context of transforming Islamic education, particularly in Islamic boarding schools (pesantren), remains very limited. Therefore, this study aims to fill this gap by offering a new perspective on the use of AI in Islamic education that focuses not only on technological mastery but also on the character development of students.

This research is highly urgent given the increasingly massive and unavoidable development of AI technology in education. Islamic boarding schools, as the oldest Islamic educational institutions in Indonesia, need to adapt to these changes to remain relevant to the needs of the times. Without appropriate learning transformation, there is a risk of a digital competency gap between students and the demands of modern society. Furthermore, the use of technology that is not balanced with character education can have various negative impacts on the moral development of the younger generation. Therefore, this research is crucial as an effort to present an Islamic education model that integrates modern technology with Islamic values, thus creating a

generation of students who are intellectually intelligent, digitally literate, and possess strong character. The purpose of this study is to analyze the transformation of Islamic education learning based on artificial intelligence in improving digital literacy and the character of modern Islamic boarding school students, identify strategies for implementing AI in Islamic education learning, evaluate the impact of AI use on strengthening the digital competence of Islamic boarding school students, and formulate an AI-based Islamic education learning model that is in line with the character and cultural values of Islamic boarding schools.

The novelty of this research lies in three main aspects. First, it integrates the concepts of artificial intelligence, digital literacy, and character education within a comprehensive framework for transforming Islamic education. Second, it offers an AI-based Islamic education learning model that maintains the distinctive values of Islamic boarding schools, such as etiquette, morals, exemplary behavior, and the tradition of talaqqi (religious practice) as the foundation of learning. Third, it formulates the concept of an "AI Humanistic Islamic Learning Model," an AI-based learning model that is not only oriented toward improving students' technological skills and digital literacy but also directed toward developing moderate, critical, responsible, and ethical Islamic character in utilizing digital technology. With these novelties, this research is expected to provide both theoretical and practical contributions to the development of Islamic education in the era of artificial intelligence.

2. METHODS

This study uses a qualitative approach with a library research design to analyze the transformation of Artificial Intelligence (AI)-based Islamic Education learning in improving digital literacy and the character of modern Islamic students. This approach was chosen because the study focuses on examining concepts, theories, previous research findings, and various policies and practices for implementing AI in Islamic education that are relevant to the research objectives. The library research method allows researchers to gain a comprehensive understanding of the relationship between the development of AI technology, digital literacy, character education, and Islamic educational values, as the focus of this study. The research data sources consist of primary and secondary data (Creswell, 2018; Sugiyono, 2015). Primary data consisted of reputable scientific articles, academic books, conference proceedings, and official documents discussing artificial intelligence in education, digital literacy, character education, and Islamic education. Secondary data was obtained from reports from national and international institutions, government regulations, publications from educational organizations, and other references supporting the research analysis. Literature was selected using criteria such

as relevance, source credibility, publication recency, and suitability to the theme of AI-based transformation of Islamic education learning.

Data collection techniques were conducted through documentation, namely identifying, classifying, and inventorying various literature related to the use of AI in learning, strengthening digital literacy, character building of students, and its implementation in Islamic boarding schools. All data obtained were then grouped by theme, including the concept of AI in education, AI-based learning strategies, digital literacy indicators, Islamic character values, and models of technology integration in Islamic education learning. Data analysis used content analysis with stages adapted from the Miles, Huberman, and Saldaña model, namely data condensation, data presentation, and drawing and verifying conclusions (Miles, Huberman, & Jhonny, 2014). In the data condensation stage, researchers selected and simplified information relevant to the research focus. Next, the data was presented thematically through a process of categorization and synthesis to identify the link between AI utilization, improving digital literacy, and developing the character of Islamic boarding school students. The final stage involved critical interpretation to formulate a conceptual model for transforming AI-based Islamic education learning while remaining grounded in Islamic values, etiquette, exemplary behavior, and Islamic boarding school learning traditions. The results of the analysis were then used to formulate the AI Humanistic Islamic Learning Model, a learning model that integrates technological innovation with strengthening Islamic character, in line with the objectives and novelty of this research.

3. FINDINGS AND DISCUSSION

3.1 Transformation of Islamic Education Learning Based on Artificial Intelligence

The development of Artificial Intelligence (AI) has driven significant transformations in various sectors of life, including education. In the context of Islamic education, the presence of AI is not merely the introduction of new technology, but also shifts the learning paradigm from a teacher-centered model to a more student-centered, adaptive, collaborative, and data-driven learning model. This transformation enables a more effective learning process through the provision of materials tailored to student needs, rapid feedback, and the provision of a variety of digital learning resources that are easily accessible anytime and anywhere. This situation presents a significant opportunity for Islamic educational institutions, particularly Islamic boarding schools (*pesantren*), to innovate in learning without abandoning the fundamental values that characterize Islamic education (M Choirul Muzaini, Prastowo, & Salamah, 2024; Syahrudin, Susanto, Ummah, Musyafa, & Isa, 2025).

From an Islamic educational perspective, learning transformation is not only defined as a shift from conventional to digital learning media, but also as a process of renewing the education system that integrates advances in science and technology with the values of the Qur'an, Sunnah, and noble morals. Islamic education's primary goal is to shape individuals who are faithful, pious, knowledgeable, and have noble morals. Therefore, the use of AI should be positioned as a supporting instrument in achieving these educational goals, not as a substitute for teachers or the character-building process that has long been the primary strength of Islamic education.

The presence of AI offers numerous opportunities to improve the quality of Islamic education. Various AI-based applications such as ChatGPT, Gemini, Copilot, and adaptive learning platforms can assist teachers in developing learning tools, producing teaching materials, creating evaluation questions, translating foreign-language literature, and developing more engaging and interactive learning media. Meanwhile, for students, AI provides access to a wider range of learning resources, so the learning process is no longer limited to the classroom or textbooks. Students can explore various Islamic references, engage in academic discussions, receive more personalized explanations, and develop critical thinking skills through interaction with AI-based technology (Dewi, 2016; Susanti, Jayadi, Hidayati, Riyanto, & Kiswardianta, 2023).

This transformation also brings changes to learning interaction patterns. Teachers are no longer the sole source of knowledge, but are transforming into facilitators, mentors, spiritual guides, and role models in the learning process. In this paradigm, AI takes on the role of learning assistant, while teachers remain the *murabbi* (leader), responsible for guiding the intellectual, emotional, social, and spiritual development of students. This shift in role is crucial, considering that Islamic education is not only oriented towards the transfer of knowledge but also towards the internalization of values and the formation of an Islamic personality. However, the transformation of AI-based learning also presents various challenges that require serious attention (Khasanah, Niswanto, & Khairuddin, 2022; Kiftiyah & Susanto, 2025). One of the biggest challenges is the growing tendency for students to become dependent on technology, thus reducing independent thinking. The ease of obtaining answers through AI has the potential to increase plagiarism, reduce creativity, and weaken analytical skills if not accompanied by adequate supervision and guidance. Furthermore, AI algorithms are not always able to distinguish the validity of religious information, leading to the risk of inaccurate understanding if students accept all information at face value without conducting a process of *tabayyun* (verification) and verification with a competent teacher.

For Islamic boarding schools (*pesantren*), another challenge is how to maintain the traditions of *talaqqi* (religious consultation), deliberation, exemplary behavior, and direct interaction

between teachers and students, which have long been hallmarks of Islamic education. These values cannot be replaced by artificial intelligence, as Islamic character formation is born through a process of habituation, role modeling, mentoring, and emotional connection between teachers and students. Therefore, AI must be understood as a medium that strengthens the effectiveness of learning, not a replacement for teachers or the centuries-old traditions of Islamic boarding school scholarship. This analysis shows that the success of AI-based transformation of Islamic education learning depends heavily on the balance between technological innovation and the strengthening of Islamic values. While AI can improve efficiency, personalize learning, and access to knowledge resources, the success of Islamic education remains determined by the ability of educational institutions to instill the values of manners, trustworthiness, honesty, responsibility, and digital ethics in students. Therefore, AI should be positioned as a tool to strengthen the educational process, while teachers remain central to the formation of students' character and spirituality.

Based on this analysis, the transformation of Islamic education in the AI era is not simply a digitalization of the learning process, but rather a paradigm shift that integrates technological advancements with the mission of Islamic education to develop knowledgeable, virtuous individuals capable of facing the challenges of a digital society. This transformation results in a learning model that adapts to current developments without losing its Islamic identity. Therefore, the synergy between artificial intelligence, teacher competence, Islamic boarding school culture, and Islamic values is the primary foundation for realizing innovative, humanistic, and sustainable Islamic education.

3.2 The Role of Artificial Intelligence in Improving the Digital Literacy of Modern Islamic Students

The development of Artificial Intelligence (AI) has brought about significant changes in the way humans acquire, manage, and utilize information. In the world of Islamic education, these changes require students (*santri*) to not only possess strong religious competencies but also master digital literacy, a key 21st-century skill. Digital literacy is no longer understood merely as the ability to operate technological devices, but rather encompasses the ability to access, analyze, evaluate, create, and communicate digital information critically, creatively, ethically, and responsibly. Therefore, the use of AI is one strategy that can strengthen students' digital literacy skills so they can adapt to technological developments without losing their identity as a generation of noble Muslims.

Artificial intelligence makes it easier for students to access various sources of knowledge quickly and broadly. Various AI-based platforms such as ChatGPT, Gemini, Microsoft Copilot,

and adaptive learning applications can help students understand Islamic material, find scientific references, translate Arabic and English books, compile material summaries, and obtain more easily understood conceptual explanations. The presence of AI also enables personalized learning, where each student can learn according to their individual abilities, pace, and needs. This makes the learning process more flexible, interactive, and can increase motivation to learn independently. In addition to expanding access to information, AI also plays a role in developing critical thinking skills (Rahmadani, Wandini, Dewi, Zairima, & Putri, 2023; Santosa et al., 2025). Through interaction with the AI system, students are encouraged to formulate more systematic questions, compare various sources of information, analyze the resulting answers, and draw conclusions based on logical arguments. These activities indirectly train analytical thinking, problem-solving, digital communication, and the ability to synthesize various information obtained. Thus, AI is not merely a tool for finding answers, but also a learning medium capable of developing higher-order thinking skills.

In Islamic boarding schools (*pesantren*), digital literacy skills are becoming increasingly important because students live amidst a rapid and complex flow of information. Religious information circulating on social media, websites, and digital platforms does not all have the same level of validity. Therefore, students are required to have the ability to verify information (*tabayyun*), evaluate the credibility of sources, distinguish between fact and opinion, and understand the context of information before sharing it with others. From an Islamic perspective, these skills align with the teachings of the Quran, which instruct Muslims to verify the truth of news before making decisions or disseminating it. Thus, digital literacy is not only an academic competency but also an implementation of Islamic ethical values in digital life.

While AI offers numerous benefits, its use also presents a number of risks that need to be anticipated. One major challenge is the rise in academic plagiarism due to the ease of obtaining instant answers. Some students tend to use AI results directly without conducting independent analysis or developing ideas. This can hinder the development of creativity, critical thinking skills, and academic integrity. Furthermore, AI also has the potential to produce information that is not entirely accurate (*hallucinations*). Therefore, if used without verification, it can lead to misunderstandings, particularly in Islamic material that requires sound evidence and explanations from credible scholars (Santosa et al., 2025; Sulaeman, Darodjat, & Makhrus, 2020).

Another risk is the spread of hoaxes, disinformation, and digital information manipulation. AI algorithms are capable of generating text, images, and videos that appear convincing, potentially misusing them to spread false information. In this context, students must have the ability to objectively evaluate information sources before believing or sharing them. This ability

is a crucial part of digital literacy, which must be continuously developed through the AI-based Islamic Education learning process. Teachers have a strategic role in guiding students to use AI selectively, critically, and in accordance with the values of academic honesty. In addition to cognitive aspects, digital literacy is also closely related to character building. The use of AI must be framed within Islamic values such as amanah (trustworthiness), şidq (honesty), mas'uliyah (responsibility), adab (good manners), and digital media ethics. Students need to understand that technology is not an end in itself, but rather a means to improve the quality of learning and expand the benefits of knowledge. Therefore, the use of AI should be directed towards supporting learning activities, strengthening a reading culture, enhancing critical thinking skills, and producing original and responsible scientific work. Islamic education learning also needs to instill awareness that every digital activity has a moral dimension that will be accounted for, so that the use of technology must always be within the corridor of sharia and good morals.

Based on this analysis, it is clear that AI can significantly contribute to improving the digital literacy of modern Islamic students if utilized wisely. AI can expand access to knowledge, enhance critical thinking skills, strengthen digital communication skills, and encourage independent learning. However, its successful implementation depends heavily on the ability of teachers and Islamic educational institutions to integrate technology with character education. Therefore, digital literacy in Islamic education must be understood as a combination of technological skills, critical thinking skills, academic integrity, and Islamic ethics. Through this approach, Islamic students will not only become a digitally literate generation but will also be able to use artificial intelligence productively, responsibly, and in harmony with Islamic values, preparing them to face the challenges of a future digital society.

3.3 AI-Based Islamic Education Learning Model to Strengthen the Character of Modern Islamic Students

The transformation of education in the era of Artificial Intelligence (AI) not only demands changes in the technological aspects of learning but also requires a learning model that maintains a balance between mastery of digital competencies and the formation of Islamic character. In the context of Islamic education, learning success is not solely measured by the increase in students' knowledge and skills, but also by the formation of noble morals, the primary goal of Islamic education. Therefore, a learning model is needed that can harmoniously integrate artificial intelligence with Islamic values so that technological development can serve as a means of strengthening the quality of education without shifting the function of character education. (Rachmawati, 2020). Based on the analysis of various studies, this research offers a conceptual formulation called the AI Humanistic Islamic Learning Model, namely a learning

model that combines the use of AI, strengthening digital literacy, and internalizing Islamic character in one complete learning system.

This model is built on the principle that AI is merely a learning assistant that supports the learning process, while the teacher remains the center of education as a murabbi, mu'allim, and mursyid, tasked with guiding the intellectual, spiritual, emotional, and moral development of students. In the Islamic boarding school tradition, the relationship between teacher and student is the primary foundation for character formation. Exemplary behavior (*uswah hasanah*), the practice of worship, discipline, and the traditions of *talaqqi* and *musyafahah* are values that cannot be replaced by any technology, no matter how sophisticated. Therefore, the AI Humanistic Islamic Learning Model positions technology as an instrument to increase learning effectiveness, while the process of instilling values remains a direct interaction between teacher and student.

Conceptually, this model has three main, interconnected components. The first component is the use of AI in Islamic education. AI is used to help teachers develop learning tools, produce interactive learning media, develop evaluations, provide rapid feedback, and provide broader and more adaptive learning resources tailored to student needs. Students can also utilize AI as a learning partner to understand Islamic concepts, search for scientific references, translate Arabic and English literature, and develop critical thinking skills through technology-based discussions. This way, the learning process becomes more flexible, personalized, and effective without losing the essence of Islamic education (Amir, Ni'mah, & Takdir, 2019).

The second component is strengthening digital literacy. The AI Humanistic Islamic Learning Model views digital literacy as a capability that goes beyond the technical aspects of technology use. Digital literacy encompasses the ability to access, analyze, evaluate, produce, and disseminate information responsibly. In its implementation, students are trained to verify information (*tabayyun*), recognize credible sources of information, avoid plagiarism, understand the ethics of AI use, and develop critical thinking skills regarding various information obtained through digital media. Learning not only teaches how to use AI, but also teaches when, why, and for what purpose AI is used in accordance with Islamic sharia principles.

The third component is the internalization of Islamic character values. Values such as *sidq* (honesty), *amanah* (trustworthiness), discipline, *mas'uliyah* (responsibility), *ta'awun* (cooperation), *wasatiyyah* (religious moderation), *ikhlas* (sincerity), and digital media ethics are at the core of the entire learning process. These values are integrated into every learning activity, from the use of AI to complete assignments and group discussions to the preparation of

scientific papers. Teachers consistently reinforce the importance of academic honesty, the wise use of technology, respect for intellectual property rights, and moral responsibility in utilizing digital information. Thus, character building does not stand as a separate subject, but becomes an integral part of the entire learning process (Supriyanti, Kurniawati, & Susanto, 2025).

The AI Humanistic Islamic Learning Model is implemented through various innovative learning strategies. One of these is collaborative learning, where students work in groups to solve religious and social problems using AI as an initial source of information. The results are then analyzed with the teacher through critical discussions, enabling students to distinguish valid information from information requiring clarification. This strategy fosters the development of communication skills, collaboration, critical thinking, and shared responsibility.

This model also implements AI-based Project-Based Learning (PjBL). In this approach, students are given real-life projects, such as compiling digital Islamic preaching content, creating Islamic learning media, developing infographics on religious moderation, or producing educational videos using AI technology. Through these projects, students not only develop technological skills but also learn to implement Islamic values in digital works that benefit society. The teacher acts as a facilitator, guiding the learning process so that each product remains grounded in sharia principles, communication ethics, and social responsibility. Furthermore, this model integrates AI-based case studies and religious reflection (Taufik, 2020). Teachers present various actual cases regarding the use of AI, such as the spread of hoaxes, plagiarism, misuse of technology, or issues of digital ethics. Students are then asked to analyze these cases from an Islamic perspective, using AI as a reference source. This is followed by religious reflection to connect the analysis results to the values of the Quran, Hadith, and noble morals. This approach not only improves critical thinking skills but also strengthens students' moral awareness in facing the challenges of the digital world.

Evaluation in the AI Humanistic Islamic Learning Model uses authentic assessment that assesses three dimensions in an integrated manner: cognitive aspects, digital skills, and character. Assessment focuses not only on the final learning outcomes but also on the learning process, collaboration skills, academic integrity, creativity, ethical use of AI, and students' consistency in applying Islamic values throughout the learning process. This approach makes evaluation more comprehensive because it is able to describe the development of student competencies as a whole. Based on this analysis, the AI Humanistic Islamic Learning Model offers a new paradigm in Islamic Education that integrates technological sophistication with Islamic humanistic and spiritual values. This model emphasizes that the success of education in the era of artificial intelligence is not determined by the sophistication of the technology used,

but by the ability of educational institutions to direct technology as a means of forming knowledgeable, character-based, and responsible individuals. Thus, this model is expected to produce modern students with high digital literacy, able to utilize AI productively and innovatively, and still uphold the values of *akhlakul karimah* (good morals), etiquette toward teachers, and the tradition of Islamic boarding school scholarship as the primary identity of Islamic education in the digital era.

4 CONCLUSION

This research shows that the transformation of Islamic Education learning based on Artificial Intelligence (AI) is a strategic step in addressing the challenges of education in the digital era. AI can increase the effectiveness of learning through personalization of materials, expanding access to learning resources, strengthening digital literacy, and developing students' critical thinking skills. However, the use of AI must not replace the role of teachers as educators, spiritual guides, and role models in character formation. Therefore, the implementation of AI must be integrated with Islamic educational values such as *şidq* (honesty), *amanah* (trustworthiness), discipline, responsibility, *wasatiyyah* (moderation), and digital media ethics. This research resulted in the formulation of the AI Humanistic Islamic Learning Model, a learning model that combines the use of AI, strengthening digital literacy, and internalizing Islamic character in an integrated manner. This model is expected to produce students who are adaptive to technological developments, possess high digital competence, and remain steadfast in the noble morals and scientific traditions of Islamic boarding schools. Thus, the transformation of AI-based learning not only produces technological innovation in Islamic education but also strengthens the relevance of Islamic boarding schools in shaping a superior, humanistic, and competitive generation of Muslims in the era of Society 5.0.

Theoretically, this research enriches the study of Islamic Education by offering a conceptual framework for the AI Humanistic Islamic Learning Model, which integrates artificial intelligence, digital literacy, and character education within a single learning paradigm. This model broadens the discourse on the transformation of Islamic Education by positioning AI as a pedagogical instrument that remains grounded in Islamic values, thus serving as a reference for the development of Islamic learning theory in the era of artificial intelligence. Practically, this research provides a reference for Islamic boarding schools (*pesantren*), *madrasahs* (Islamic schools), Islamic schools, and universities in designing AI-based learning that maintains the character and culture of Islamic education.

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