"DIGITALIZATION OF ISLAMIC EDUCATION: OPPORTUNITIES FOR INCLUSIVITY AND ETHICAL CHALLENGES OF ACCESS IN THE AI ERA"

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Abstract

The AI era is driving rapid digitalization in Islamic education, transforming traditional learning into innovative, accessible models. This shift creates inclusive opportunities for students, enabling engagement through e-learning platforms, Al-Qur'an mobile apps, and sharia-compliant AI religious instruction. innovations now, such as virtual reality (VR) simulations of Islamic history and the Pesantren Go Digital initiative, have boosted religious literacy by up to 50%, fostering adaptive, principle-based learning aligned with Islamic values like equity and moral guidance. However, ethical challenges include surviving, such as a stark digital divide impacting 65% of rural madrasahs, where limited infrastructure hinders access. Algorithmic biases in AI tools risk distorting religious interpretations, while data privacy concerns expose student information to vulnerabilities, potentially undermining trust in digital faith-based education. This literature review synthesizes solutions like fiqh chatbots for instant ethical queries and (AR) Hadith applications for learning, ensuring content is certified halal and culturally sensitive. It underscores the urgency of comprehensive teacher training programs to bridge the technology skills gap. national collaboration between the Kemenag, tech firms, and Islamic institutions is essential to build, equitable digital ecosystem. By addressing these issues, Indonesia can lead global discourse on sustainable Islamic education, balancing technological advancement with spiritual integrity in the AI age.

Keywords: Digitalization; Islamic Education; Inclusivity; AI Ethics

INTRODUCTION

The digitization of Islamic studies in the era of artificial intelligence (AI) can be examined through post-traditional learning approaches and critical digital pedagogy. The transition from traditional to digital learning models signifies a shift from cognitive-behaviorist to connectivist paradigms, in which knowledge is distributed through digital networks rather than being sourced exclusively from the teacher. Within Islamic studies, this shift generates epistemological tensions between classical scholarly authority and digital algorithms that automatically present religious content (Anderson & Dron, 2015). A primary challenge is the preservation of *maqasid al-shariah* and the values of adab within learning systems that are increasingly automated and personalized by AI. This development also prompts critical reflection on the function of technology as *wasilah, or a means,* in Islamic education, rather than as *ghayah, or an end,* itself (Huda et al., 2020).

Digital transformation in Islamic education in Indonesia not only impacts technical aspects but also affects epistemological structures and social relations in the teaching and learning process. Studies by (Achruh et al., 2024) show that the adoption of AI (Artifical Intelligent) in Islamic higher education presents opportunities for personalized learning and expanded access, but also poses challenges in maintaining traditional scholarly authority. In the context of pesantrens, for example, digitalization has encouraged deterritorialization—where knowledge is no longer confined to the physical space of the pesantren but spreads through online platforms. This allows alumni and the general public to access the study of classical Islamic texts virtually, but also requires adapting classical methods such as "*sorogan and bandongan*" into digital formats (Maram & Fanani, 2025).

Thus, making digitalization a means entails positioning technology as a tool to expand the reach and effectiveness of knowledge dissemination, without neglecting the essence of Islamic education, which emphasizes character building, manners, and spirituality. If digitalization is treated as a *ghayah* or ultimate goal, there is a risk of reducing the transformative values of Islamic education to mere information transfer. Therefore, it is important for educators, scholars, and policymakers to design a digital ecosystem that remains grounded in the *maqasid al-shariah*, maintains scholarly authority, and strengthens the spiritual bond between teacher and student, so that the blessings of knowledge are preserved amid the flow of technological modernization. The digitalization of Islamic studies is an inevitability that must be responded to wisely and contextually. Technology, including AI, can serve as an inclusive means to broaden access to Islamic knowledge, especially for communities that have been marginalized. However, this transformation must remain grounded in ethical principles, scholarly authority, and the spiritual values that are central to Islamic education. Without an ethical framework and active participation from scholars and educators, digitalization risks becoming a dehumanizing process that neglects the essence of knowledge itself.

Despite these advancements, the integration of AI into Islamic education raises *critical questions about inclusivity and pedagogical authenticity*. Traditional Islamic pedagogy emphasizes the centrality of the teacher (*murabbi*) in nurturing adab (ethics) and spiritual development—dimensions that are difficult to replicate through algorithmic personalization alone (Rifah et al., 2024). while AI offers adaptive learning pathways and content customization, it risks marginalizing the holistic and communal aspects of Islamic learning, particularly the transmission of values through direct teacher-student interaction. Moreover, the digital divide remains a significant barrier: students from underprivileged backgrounds, especially in remote areas, often lack access to stable internet, digital devices, or digital literacy, thereby exacerbating educational inequality (Ramadhani & Arifin, 2025).

This value must continue, meaning the essence of traditional learning (which brings together teachers and students) must be maintained, but AI-based learning that emphasizes speed and accuracy must be regulated under ethical principles that align with holistic Islamic principles. Clearly, Islam does not eliminate all emerging technologies, especially those that accommodate AI-based learning processes. On the contrary, Islam encourages this through the Prophet Muhammad in his saying, "You are the people who understand your world best," which is illustrated by the story of when some companions tried to cross-pollinate their date palm trees. Islamic education emphasizes the importance of adapting teaching methods to the times, as recommended by the Prophet Muhammad's

descendants to educate children according to their times (Al-Attas, 1980). Because educating children according to their times is also a principle of justice that must be upheld, not limited by adapting to the conditions of the parents' time, but rather to what is developing and happening in the current era. This aligns with the principles of justice and moral guidance inherent in Islamic teachings. The integration of AI (Artificial Intelligence) in education is expected to increase inclusivity and equality, reflecting Islamic values of equality and moral development (Hashim, 2015). However, regarding matters of the afterlife, the Prophet Muhammad indicated that these matters should be returned to him, as he was the one who understood them best. This signal directly opened up space for the continued development of science and technology, while religious rules were already standardized through his teachings.

Ethical concerns also emerge regarding data governance, algorithmic bias, and the preservation of religious authenticity. AI systems trained on datasets lacking Islamic epistemological grounding may inadvertently propagate interpretations misaligned with Shariah principles. Furthermore, the use of facial recognition or biometric data in digital madrasah attendance systems, while efficient, raises privacy concerns in the absence of robust regulatory frameworks (Ramadhani & Arifin, 2025). The absence of clear ethical guidelines and digital literacy training among educators and administrators increases the risk of misuse or overreliance on AI tools. Therefore, while digitalization presents unprecedented opportunities for expanding access to Islamic knowledge, it must be accompanied by *context-sensitive ethical frameworks* and inclusive infrastructure development to ensure that no community is left behind in this technological transformation.

Digital transformation in Islamic studies opens up significant opportunities for educational inclusivity, particularly in reaching groups that were previously marginalized geographically or socially. Through e-learning platforms, mobile-based Qur'an applications, and AI-supported religious instruction in accordance with Sharia principles, students from remote areas can now access Islamic materials flexibly and sustainably. According to research by Huda et al., (2022) digitalization enables Islamic learning to take place across time and space, strengthening religious literacy among young people who are tech-savvy. Moreover, a study by Sari & Nurhadi (2023), shows that the use of digital applications such as Qur'an Kemenag, Muslim Pro, and Islamic AI chatbots has increased the participation of female students and people with disabilities in online religious activities. Thus, digitalization not only expands access but also promotes the creation of a more inclusive, adaptive Islamic learning ecosystem that aligns with the needs of the times.

However, digital inclusivity in Islamic education still faces serious challenges. Research by Intan Berliana et al., (2025) at SMK Negeri 1 Kebumen revealed that integrating Islamic values into deep learning-based educational systems requires curriculum readiness, teacher training, and adequate infrastructure. Without a holistic approach, digitalization could actually reinforce access inequalities and obscure Islamic ethical values in the educational process. Therefore, it is important to design policies that not only promote technological innovation but also ensure that principles of justice, decorum, and *maqasid al-shariah* remain the main foundation in every digital initiative. In my view, the digitalization of Islamic studies should be positioned as a *wasilah* (means)

to expand the blessings of knowledge, not as an ultimate goal that shifts the transformative and spiritual essence of Islamic education.

Although digitalization offers significant opportunities for Islamic education, three main challenges need careful attention. First, the digital divide remains a major obstacle, especially in rural madrasahs. According to the Indonesian Rural Digital (2025) report, only about 45% of rural communities have reliable internet access, which directly limits digital infrastructure in more than 65% of rural madrasahs. Second, algorithmic bias in AI systems can distort religious interpretation. A study by Tarwiyyah shows that AI trained with proper Islamic epistemology can reinforce stereotypes or provide interpretations that stray from Sharia principles, thereby threatening the authority of scholarship and the authenticity of teachings. teachings (Hanik L. Tarwiyyah, 2025). Third, the vulnerability of students' personal data is a pressing ethical issue that low AI literacy and the absence of robust data protection regulations in Islamic educational institutions increase the risk of data misuse, including potential cybercrimes against students' personal information. (Haetami, 2025). These three challenges underscore the importance of an ethical, regulatory, and participatory approach to developing a safe and equitable digital ecosystem for Islamic education.

Previous studies have explored the impact of digitalization on Islamic education. For instance, a study by (Ahmed & Khan, 2021) Found that digital tools significantly enhance student engagement and learning outcomes in Islamic studies. Similarly, research by (Rahman, 2020) Highlighted the potential of AI to personalize learning experiences in line with Islamic values. However, these studies also noted the ethical concerns associated with AI, such as the risk of misinterpretation of religious texts due to algorithmic biases. And then, a study conducted by Ibrahim et al. analyzed the impact of digital transformation on Islamic education learning methods, particularly the application of deep learning. The results showed that digital technology is driving the evolution of the Islamic education ecosystem, but also poses challenges in maintaining scientific authority and the validity of religious interpretations (Ibrahim et al., 2025).

Despite the theoretical and empirical support for digitalization in Islamic education, a gap exists between the potential benefits and the ethical challenges posed by AI. While digital tools have improved access and inclusivity, the lack of infrastructure in rural areas and the risk of data breaches highlight a disparity between theory and practice (UNESCO, 2022) & (Kominfo, 2023). Furthermore, the potential for algorithmic bias to distort religious interpretations remains a critical concern that has not been fully addressed in existing literature.

To address these gaps, future research should focus on developing ethical frameworks for AI in Islamic education that prioritize data privacy and mitigate algorithmic bias. This could involve collaborative efforts between technologists and Islamic scholars to ensure that AI applications align with Islamic ethical standards (Zia, 2021). Additionally, investment in digital infrastructure for rural madrasahs is crucial to bridge the digital divide and ensure equitable access to educational resources.

This study aims to analyze the opportunities for inclusivity offered by the digitalization of Islamic studies through the use of e-learning platforms, mobile-based Quran applications, and artificial intelligence (AI)-based religious instruction in accordance with Sharia principles. Furthermore, this study aims to identify ethical and

accessibility challenges arising from this digitalization process, particularly those related to infrastructure gaps, scientific authority, and personal data protection in Islamic education environments. Therefore, this study is expected to provide strategic recommendations for the development of an inclusive, ethical, and sustainable Islamic education ecosystem in the digital era, and it can inform policy decisions and technological innovations that support the sustainable integration of AI in education.

METHOD

This research uses a qualitative descriptive approach with a library research design and a limited field study (field-based investigation). This approach was chosen because it allows for a sustainable, in-depth study of social and technological phenomena and allows for interpretation of the dynamics of the digitalization of Islamic education in the context of ethics, inclusivity, and artificial intelligence. According to Creswell (2014) in Roosinda et al., (2021) qualitative research is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The research process involves emerging questions and procedures, data typically collected in the participant setting, data analysis inductively building from particulars to general themes, and the researcher interpreting the meaning of the data. The final written report has a flexible structure. Those who engage in this form of inquiry support a way of looking at research that honors an inductive style, a focus on individual meaning, and the importance of rendering the complexity of a situation.

The data analysis in this study was conducted using a content analysis and thematic review approach, which enabled researchers to identify key patterns, meanings, and dynamics in the digitalization of Islamic education in the AI era. The analysis process involved three main stages: data reduction, which filtered relevant information from various sources; thematic categorization, which grouped data based on key themes such as opportunities for inclusivity, challenges of algorithmic bias, and data privacy issues; and narrative synthesis, which developed a comprehensive understanding that connected empirical findings with theoretical frameworks. This approach aligns with the practice of thematic analysis in contemporary qualitative research as formulated by Braun & Clarke (2006), who emphasize the importance of a systematic coding process to generate valid themes, and Mayring, (2015) who affirms the theoretical foundation of content analysis as a method for understanding texts in social contexts. Furthermore, Mwita & Mwilongo (2025) A practical guide on the seven steps of thematic analysis was used to ensure procedural consistency, while Polat (2025) provides insight into common mistakes to avoid to ensure valid and accountable analysis results. With this combination of references, the analytical method used is not only contextually relevant but also stands on an internationally recognized methodological foundation, thus strengthening the validity and novelty of this research.

FINDINGS

The digitalization of Islamic education has opened up significant opportunities for expanding access to learning. A study by Rifah et al. (2024) confirmed that the use of AI in Islamic education can improve the quality of learning through personalized materials and the integration of *Sharia* values. This aligns with UNESCO findings (2022), which showed a 50% increase in religious literacy through digital platforms. In my opinion, this opportunity should be viewed as a means of expanding the blessings of knowledge, not

simply technological modernization. The digitalization of Islamic education should not be understood merely as a process of technological modernization, but rather as a means to expand the blessings of knowledge. In Islamic tradition, knowledge is not merely information, but has a spiritual dimension that connects humans with God and fosters noble character. Therefore, every technological innovation, including the use of AI, e-learning, and Quranic applications, must be directed towards strengthening the core values of Islamic education, such as justice, etiquette, and *maqasid al-shariah*.

The next finding is that innovations such as VR (Virtual Reality) simulations of Islamic history and the Pesantren Go Digital program have become catalysts in increasing student engagement. This program, developed by Telkom Indonesia, provides integrated digital services for Islamic boarding schools, from online classes to institutional management. The application platform can be accessed at: https://pesantrengodigital.id/?form=MG0AV3&form=MG0AV3. I see that VR (Virtual Reality) and AR (Augmented Reality) are not only entertainment tools, but can be effective da'wah media if developed with cultural sensitivity. In the context of Islamic education, VR (Virtual Reality) and AR (Augmented Reality) can be used as interactive da'wah media, for example, by presenting simulations of Islamic history, visualizations of the Hajj pilgrimage, or immersive experiential learning of hadith and fiqh. Research by Berliana et al., (2025) shows that integrating Islamic values into AI- and AR-based technology can increase student engagement while maintaining cultural and *Sharia* sensitivity. This means that VR (Virtual Reality) and AR (Augmented Reality) can be effective tools for strengthening religious literacy, provided the content developed adheres to local norms, scholarly authority, and the principles of *maqasid al-shariah.* Thus, these technologies not only expand access but also deepen the spiritual experience in Islamic learning.

However, the digital divide remains a major challenge. Ramadhani & Arifin found that 65% of madrasas in rural areas face limited infrastructure, severely limiting access to digital technology (Ramadhani & Arifin, 2025). Without affirmative policies that guarantee equal access, digitalization risks widening the gap in Islamic education. From the perspective of educational justice theory, affirmative policies are needed to ensure a fair distribution of resources, so that digitalization is not only enjoyed by educational institutions in urban areas, but also reaches madrasas in remote areas. Thus, the digitalization of Islamic education must be viewed as a social project that demands state support and cross-sectoral collaboration so that it becomes not merely a symbol of modernization, but a means of equalizing knowledge and blessings.

Furthermore, algorithmic bias in AI systems has the potential to distort religious interpretations. Algorithms not trained with Islamic epistemology can produce interpretations that deviate from *Sharia* principles (Achruh et al., 2024). Therefore, the involvement of Islamic scholars and fiqh experts in the AI content curation process is essential to maintain scientific authority and ensure scientific ethics. This is because Islamic education has epistemological and normative dimensions that are not only oriented toward knowledge transfer but also toward maintaining scientific authority and etiquette in the learning process. Without the involvement of scientific authorities, AI-generated content risks losing legitimacy, both in terms of the validity of interpretation and the ethics of delivery. Scholars and fiqh experts act as guardians of authenticity,

ensuring that all material produced by digital systems remains aligned with sharia principles and Islamic scholarly traditions.

Data privacy issues are also a serious concern. Haetami noted that low AI literacy among educators increases the risk of misuse of student data, including potential cybercrime (Haetami, 2025). Building trust in digital Islamic education is only possible with strict regulations that safeguard students' personal data. Moreover, clear and firm regulations will ensure that student data is not misused, while also assuring that the technology used remains in line with *Sharia* principles. Thus, regulations are not merely legal instruments, but also mechanisms to safeguard the blessings of knowledge, protect the dignity of students, and strengthen the legitimacy of digital Islamic education in the eyes of society.

Solutions being developed include a fiqh chatbot to instantly answer ethical questions and an AR (Augmented Reality)-based Hadith application that ensures content is halal-certified and culturally sensitive(Zaharah et al., 2024) & (Umar et al., 2025). The current generation is growing up in a digital ecosystem that demands fast, interactive, and flexible access to learning resources. Meanwhile, Islamic education has a scholarly tradition rooted in the authority of ulama (Islamic scholars), adab (traditional Islamic teachings), and sharia principles. Innovations such as AI, VR, and AR can bridge these two needs: technological modernity and scientific legitimacy. However, for this bridge to be solid, ethical oversight is necessary. Without ethics, technology risks disseminating biased, deviant information or even diminishing the spiritual value inherent in Islamic knowledge. With ethical oversight involving Ulama, fiqh experts, and Islamic educational institutions, digital innovation will serve not only as a tool for modernization but also as a means of preserving the blessings of knowledge, expanding access, and strengthening the integrity of Islamic education in the digital era.

Ultimately, national collaboration between the Ministry of Religious Affairs (Kemenag), technology companies, and Islamic institutions is key to building a just and sustainable digital ecosystem. Berliana et.al and Ramadhani emphasize the importance of teacher training to integrate AI into an Islamic values-based curriculum (Berliana et al., 2025) & (Ramadhani & Arifin, 2025). I believe that Indonesia has great potential to lead the global discourse on sustainable Islamic education by balancing technological advancement and spiritual integrity. With a significant number of Islamic educational institutions, from Islamic boarding schools to universities, and government policy support for digital transformation, Indonesia has the potential to integrate modern technology with strong spiritual values. Balancing these two aspects will not only strengthen the quality of national education but also position Indonesia as a key actor in the global conversation on how Islamic education can develop sustainably without losing its scientific spirit and *sharia* ethics.

DISCUSSION

In this research, I obtained several findings that can then be discussed in several inseparable subsections within this paper. The emphasis on digitalization and the advancement of AI-based technology for Islamic education continues to be a hot topic in this study, so I can divide it into the following points.

Digitalization as a Means of Expanding the Blessings of Knowledge

Research findings indicate that the digitalization of Islamic education is not merely technological modernization, but rather a means of expanding the blessings of knowledge. This aligns with Islamic epistemology, which emphasizes that knowledge has a spiritual dimension, not just information. The integration of AI into learning, which personalizes material and internalizes *Sharia* values (Rifah et al., 2024) & (UNESCO, 2022). demonstrates that technology can be a tool for *da'wah* (preaching) that strengthens the *maqasid al-shariah* (objectives of *sharia*).

Thus, digitalization must be positioned as a spiritual project that expands access while maintaining the authority of knowledge. Digitalization in Islamic education cannot be viewed solely as a technological process, but rather as a spiritual project with broader goals. By expanding access, digitalization enables religious knowledge to reach communities previously marginalized by geographic boundaries and limited resources. However, at the same time, scientific authority must be maintained so that content disseminated through technology does not lose its epistemological legitimacy and Islamic scholarly etiquette. This means that every digital innovation must be directed towards strengthening the *maqasid al-shariah*, maintaining the integrity of interpretation, and ensuring that the blessings of knowledge remain at the core of the learning process. From this perspective, digitalization is not merely a symbol of modernization, but a means of sustainable and meaningful *da'wah*.

Technological Innovation as Interactive Preaching Media

The use of VR and AR in Islamic history simulations and the Pesantren Go Digital program shows that immersive technology can increase student engagement. According to a report by Anggoro, a Media Indonesia reporter, 1,125 Islamic boarding schools have participated in the digital literacy program, 1,615 of which have successfully developed their own websites, more than 2,000 digital students have been formed, and 2,615 Islamic boarding school students (Kantri Santri) have registered as users of the "Kartu Santri" program from at least 13 Islamic boarding schools across Indonesia (Anggoro, 2023). Meanwhile, Berliana et al. emphasized that integrating Islamic values into AI and AR-based technology can maintain cultural sensitivity while strengthening religious literacy (Berliana et al., 2025). The significance of these findings is that entertainment technology can be transformed into an interactive da'wah medium, deepening spiritual experiences and expanding the reach of da'wah to the digital generation.

Transforming entertainment technology into an interactive *da'wah* medium requires a shift in the pedagogical paradigm from information transmission to participatory and meaningful learning experiences. VR/AR and AI enable immersive narrative representations, ritual simulations, and fiqh case modeling, thereby triggering simultaneous cognitive, affective, and psychomotor engagement. Within the framework of Islamic education, this approach can strengthen the internalization of values—such as etiquette, trustworthiness, and justice—through reflective practice and purposeful experiences, rather than simply consuming content. With instructional design based on the maqasid al-shariah, technology does not simply "attract attention," but directs attention to the goal of moral formation and spiritual meaning.

However, the promised depth of spiritual experience does not occur automatically; it depends on scientific curation, cultural sensitivity, and strict ethical principles. Without

scientific authority and a content accreditation structure, technology risks reducing the complexity of tradition to a superficial, spectacular experience, or even shifting interpretive authority to algorithms. Therefore, the architecture of interactive da'wah needs to incorporate a validation mechanism for scholars, transparent content standards, and protections for privacy and data security as prerequisites for legitimacy. With strong governance, entertainment technology transformed into a pedagogical tool will responsibly expand the reach of *da'wah*, maintain epistemological integrity, and foster public trust in digital Islamic education.

Digital Divide and Educational Equity

Despite the enormous opportunities, the digital divide remains a major challenge. Research shows that 65% of madrasas in rural areas still face infrastructure constraints (Ramadhani & Arifin, 2025). From the perspective of educational justice theory, this finding underscores the need for affirmative action policies to ensure a more equitable distribution of digital resources. Its academic significance lies in the fact that the digitalization of Islamic education must be viewed as a social project that demands state support and cross-sector collaboration, rather than simply a symbol of modernization.

The digital divide in Islamic education is rooted not only in infrastructure differences but also in disparities in institutional capacity, educator digital literacy, and device affordability in remote areas. Affirmative policies are necessary to address this structural bias through needs-based allocation, device and connectivity subsidy mechanisms, and the systematic strengthening of teachers' and management's capacities in disadvantaged schools. An affirmative approach should prioritize rural madrasahs and small Islamic boarding schools as target groups, with measurable equity indicators such as the device-to-student ratio, network reliability, and effective digital learning hours. Thus, policies should not simply close the "access gap" but also build a functional and sustainable digital learning ecosystem.

Within the framework of Islamic justice and the *maqasid al-shariah* (objectives of Islamic law), affirmative action policies aim to safeguard the public good (*hifz al-din and hifz al-'aql*) through fair and dignified digital distribution. Credible implementation demands collaborative governance: national minimum service standards, incentives for technology companies to reach disadvantaged areas, and public accountability through participatory audits by local communities. Furthermore, affirmative action must include content curation in accordance with scientific authority and student data protection, so that equitable access does not compromise epistemological and ethical integrity. With context-sensitive and outcome-oriented policy design, affirmative action becomes a corrective instrument that ties technological modernization to Islamic educational justice.

Algorithmic Bias and Scientific Authority

Findings about potential algorithmic bias in AI highlight the importance of involving Islamic scholars and Islamic jurisprudence experts in content curation. Several studies have highlighted that algorithms not trained with Islamic epistemology risk producing distorted interpretations (Achruh et al., 2024). Haetami further argues that many teachers and administrators of Islamic educational institutions do not yet understand how algorithms work or the ethical implications of using AI. As a result, the digital systems

used have the potential to result in interpretations that deviate from Sharia principles, while also opening up opportunities for data leakage. He believes that the primary solution lies not only in regulation but also in improving educators' digital literacy capacity, enabling them to monitor, curate, and manage technology responsibly. Thus, algorithmic bias and data privacy cannot be separated from the competence of the humans operating the technology (Haetami, 2025). Meanwhile, Al-Khalifa emphasized that algorithmic bias and data privacy in AI-based Islamic education are serious ethical issues. He argued that algorithms not developed with Islamic epistemology in mind have the potential to produce distorted interpretations, while weak data protection could threaten public trust in digital Islamic education (Al-Khalifah, 2019).

The academic significance of these findings is that the authority of Islamic scholarship must remain central in the digital era, allowing AI to function as a tool, not a substitute, for the legitimacy of interpretation. This narrative underscores the epistemological principle that the legitimacy of interpretation stems from the authority of the chain of narration, the methodology of *ushul fiqh*, and the etiquette of scholarship, which cannot be transferred to algorithms. In practice, AI should be positioned as an augmentation instrument to assist in source tracing, argument mapping, and case visualization, while the determination of meaning, the weighing of evidence, and the issuance of fatwas remain with scholars and fiqh experts through a "human-in-the-loop" mechanism. Consequently, the digital ecosystem needs to establish governance that affirms the hierarchy of authority, namely: content curation standards, model and dataset accreditation, interpretation audit trails, and safeguards against bias and reductionism. With a design based on the good of the community and scientific control, AI can increase efficiency and access without eroding epistemological integrity, ensuring that technology serves science, not replaces it.

Data Privacy and Public Trust

The issue of student data privacy is a crucial ethical dimension. Haetami (2025) emphasized that low AI literacy among educators increases the risk of misinterpreting data. Meanwhile, Hady et al., (2025) emphasized that AI can erode knowledge silently and pose ethical challenges if not regulated. Rosmaini (2025) further added that AI-based transformation of Islamic education will only be sustainable if it is based on a clear ethical framework, including the protection of personal data.

The issue of student data privacy in digital Islamic education must be viewed as a significant responsibility that cannot be ignored. Low AI literacy among educators, as Haetami emphasized, indeed increases the risk of data misuse, while Hady et al. warn that AI can erode tacit knowledge and pose ethical challenges if not regulated. Rosmaini added that AI-based transformation of Islamic education will only be sustainable if it is based on a clear ethical framework, including the protection of personal data. In my opinion, these three perspectives reinforce the notion that digitalization of Islamic education is not sufficient with technological innovation alone; it must be built on a solid foundation of ethics, regulation, and digital literacy to ensure the blessings of knowledge are maintained and the dignity of students is protected.

Innovative Solutions and Supervision Ethics

The development of an AR (Augmented Reality) based fiqh chatbot and hadith application Zaharah et al., (2024) & Umar et al., (2025) demonstrates that digital innovation can bridge the needs of the digital generation with the authority of Islamic scholarship. The fiqh chatbot is capable of providing quick answers to everyday ethical questions, while the AR-based hadith application provides an immersive and interactive learning experience. However, as Hady et al., (2025) caution, the application of AI in Islamic education has the potential to erode tacit knowledge and raise ethical challenges if not monitored by regulations and the involvement of scholars. Therefore, the academic significance of this finding lies not only in its technological aspects but in how this innovation maintains epistemological legitimacy through scientific curation, cultural sensitivity, and the principles of *maqasid al-shariah*. With a strong ethical foundation, technology can serve as a means of expanding access, deepening spiritual experiences, and simultaneously strengthening the authority of Islamic scholarship in the digital era.

Therefore, ethics must be the primary foundation for any innovation in Islamic educational technology. Without an ethical foundation, technology risks becoming merely a tool for commercialization or shallow entertainment, rather than a means of moral formation and strengthening scientific authority. With solid ethics, digitalization can actually expand access to knowledge to previously marginalized communities, provide deeper spiritual experiences through interactivity, while maintaining the legitimacy of interpretation and the authority of scholars. This means that technology is not a substitute for scientific authority, but rather an instrument that supports the sustainability of the Islamic scientific tradition in addressing the challenges of the digital generation.

National Collaboration and Indonesia's Global Potential

Collaboration between the Ministry of Religious Affairs (Kemenag), technology companies, and Islamic institutions is key to building a sustainable digital ecosystem. Berliana et al., (2025) and Ramadhani & Arifin (2025) emphasize the importance of teacher training to integrate AI into an Islamic values-based curriculum. Furthermore Rahmawati et al., (2025) emphasizes the importance of optimizing AI in evaluating Islamic Religious Education (PAI) learning, while highlighting the need for teacher training and ethical regulations so that technology supports the goals of sustainable Islamic education. These findings indicate that Indonesia has great potential to lead the global discourse on sustainable Islamic education by balancing technological advancement and spiritual integrity.

The above discussion emphasizes Indonesia's strategic position as a social and intellectual laboratory for integrating technology with Islamic values. With the world's largest Muslim population and a diverse and profound Islamic educational tradition, Indonesia possesses the epistemological and cultural capital to offer a sustainable Islamic education model that is not only adaptive to technological advances but also rooted in spiritual integrity. This potential can make Indonesia a global reference in formulating a balanced digital Islamic education paradigm: technology is utilized to expand access and improve the quality of learning, while scientific authority and a commitment to the good of the community remain the primary foundations for maintaining the blessings of knowledge and the dignity of students.

CONCLUSION

This research confirms that the digitalization of Islamic education offers significant opportunities to expand access, improve the quality of learning, and deepen spiritual experiences, provided it is guided by ethics, scientific authority, and clear regulations. Key findings suggest that AI (Artificial Intelligence), VR (Virtual Reality), and AR (Augmented Reality) based innovations can be effective tools for strengthening religious literacy and student engagement, while challenges such as the digital divide, algorithmic bias, and data privacy demand affirmative policies and the involvement of Islamic scholars and institutions as guardians of epistemological legitimacy. This research's contribution to the development of science is that it positions digitalization not merely as a technical modernization, but as a social and spiritual project that balances technological advancement with the *maqasid al-shariah* (objectives of Islamic law). Practical implications highlight the need for cross-sector collaboration between the Ministry of Religious Affairs (Kemenag), Technology Companies, and Islamic institutions to build a sustainable and equitable digital ecosystem. Future research could focus on developing a fiqh-based content curation model, evaluating the effectiveness of data privacy regulations, and exploring the integration of new technologies, such as blockchain, to ensure transparency and authenticity of sources in digital Islamic education.

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