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The Future of Islamic Education in the Age of Artificial Intelligence: Pedagogical Innovation and Ethical Transformation

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Abstract:

Research Objective– This study aims to examine the transformation of Islamic education in the age of artificial intelligence (AI), focusing on emerging technological applications, pedagogical innovation, human–AI collaboration, and ethical challenges. It also proposes an integrated framework for aligning AI capabilities with Islamic educational objectives and values. **Methodology–** This study employed a Systematic Literature Review (SLR) following the PRISMA 2020 guidelines. Relevant literature published primarily between 2020 and 2026 was collected from Scopus, Web of Science, ScienceDirect, SpringerLink, IEEE Xplore, and Google Scholar. Data were analyzed through thematic synthesis to identify emerging trends, pedagogical transformations, epistemological challenges, and ethical considerations. **Findings–** The findings reveal that AI is transforming Islamic education through personalized learning, adaptive instruction, automated feedback, Qur'anic learning, Hadith education, Arabic language learning, and digital Islamic scholarship. However, its implementation raises concerns regarding religious knowledge authenticity, academic integrity, algorithmic bias, privacy, and human responsibility. The study proposes the Human–AI–Islamic Values Framework, integrating three dimensions: AI capability, human mediation, and Islamic value alignment. **Research Implications/Limitations–** The study highlights the need for AI literacy, teacher professional development, scholarly verification, ethical governance, and responsible technology integration in Islamic educational institutions. However, its findings are limited by the availability, diversity, and rapidly evolving nature of the reviewed literature. Further empirical research is needed to validate the proposed framework across different Islamic educational contexts. **Originality/Value–** This study contributes an integrated conceptual framework connecting technological innovation, pedagogical transformation, human agency, and Islamic ethical principles. It emphasizes that AI should augment rather than replace teachers and should remain guided by amanah, adab, maslahah, authenticity, justice, and human dignity.

Keywords: *Artificial Intelligence; Islamic Education; Pedagogical Innovation; Human–AI Collaboration; Islamic Ethics.*

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Introduction

Artificial intelligence (AI) is increasingly transforming the educational landscape by reshaping how knowledge is accessed, produced, personalized, assessed, and disseminated. The emergence of generative AI, intelligent tutoring systems, learning analytics, natural language processing, and AI-powered educational platforms has shifted AI from being merely a technological support tool toward becoming an increasingly influential component of teaching and learning processes. Contemporary educational developments indicate a growing movement toward personalized learning, adaptive pedagogy, student-centered instruction, and human–AI collaboration (Abubakari, 2025; Mimoudi & Mokhtari, 2025; Rianti et al., 2026). At the same time, the increasing integration of AI introduces substantial challenges related to academic integrity, privacy, algorithmic bias, accountability, epistemic authority, and the ethical boundaries of machine-mediated learning (Li & Huang, 2025; Al-Janabi & Aljanabi, 2025). These developments require education systems not only to adopt technological innovation but also to reconsider the pedagogical and ethical foundations that determine how AI should be used in educational practice.

This transformation is particularly significant for Islamic education because its objectives extend beyond the transmission and acquisition of cognitive knowledge. Islamic education encompasses intellectual development, faith formation, moral cultivation, spirituality, character development, religious identity, and responsible human conduct. Consequently, the integration of AI into Islamic education cannot be evaluated solely through technological efficiency, personalization, or measurable learning outcomes. It must also be examined in relation to Islamic epistemology, teacher authority, authenticity of religious knowledge, *adab*, moral responsibility, and the development of the learner as a morally responsible human being. Recent research emphasizes that the integration of generative AI into Islamic religious education requires meaningful human mediation and systematic verification of sources to prevent technological convenience from compromising the authenticity and reliability of religious knowledge (Mat Yusoff et al., 2026). Similarly, Yusgiantara (2026) argues that education in an algorithmic age must remain concerned with the formation of the moral self, indicating that technological intelligence cannot substitute for human moral agency.

The growing body of research demonstrates that AI is already entering diverse domains of Islamic education. In Qur'anic learning, AI has been employed to recognize and evaluate recitation, support memorization, retrieve Qur'anic passages, facilitate translation, and enhance digital approaches to Qur'anic interpretation. Alfadhli et al. (2024), for example, developed a hybrid CTC/attention-based architecture for Qur'anic recitation recognition, demonstrating the potential of AI to support automated recognition of recitation patterns. Aljabr (2025) similarly examined the application of linguistic sciences and AI in correcting Qur'anic recitation through the Al-Fatihah application for Indonesian learners. AI applications have also been explored in Qur'an memorization and review (Nasir et al., 2025; Yahya et al., 2025), Qur'anic translation (Gaanoun & Alsuhaibani, 2025), Qur'anic passage retrieval (Elhassouny et al., 2026; Salman et al., 2026), and digital verification of Qur'anic exegesis (Sahimi et al., 2025). These developments indicate that AI is increasingly capable of supporting individualized and interactive engagement with Islamic textual traditions.

The application of AI has also expanded beyond Qur'anic education into other areas of Islamic learning. Adiyono et al. (2026) demonstrate the development of an AI-based platform for *Kitab Kuning* learning, suggesting that emerging technologies can be used to support traditional Islamic scholarship through digital learning environments. Nouri (2026) provides evidence of the use of a generative AI-powered conversational bot in teaching Hadith sciences, while Tricahyo et al. (2026) examine students' experiences with generative AI in Arabic language education at Islamic universities in Indonesia. At a broader level, AI has been investigated as a means of enhancing personalized learning in Islamic education (Shehab et al., 2025), supporting cognitive, affective, and psychomotor dimensions of learning (Andri Nirwana et al., 2025), and facilitating digital transformation in Islamic religious education at the Madrasah Aliyah level (Wedi et al., 2025). More recent research also demonstrates the potential of AI combined with pedagogical competence to improve learning interest and outcomes in Islamic university contexts (Hoerudin et al., 2026). Collectively, these studies demonstrate that AI is no longer a peripheral technological innovation but an emerging force influencing curriculum, instructional design, learning resources, assessment, student engagement, and educational outcomes in Islamic educational settings.

The pedagogical potential of AI is particularly evident in the movement toward personalized and student-centered learning. Generative AI can provide individualized explanations, generate learning materials, respond to students' questions, and potentially adapt learning experiences according to individual needs (Abubakari, 2025; Shehab et al., 2025). AI-supported hybrid teaching models further indicate the potential of intelligent technologies to optimize student-centered learning by combining digital capabilities with pedagogical strategies (Rianti et al., 2026). However, personalization itself should not be equated with educational quality. In Islamic education, effective learning involves not only individualized cognitive support but also the cultivation of *adab*, ethical consciousness, spiritual awareness, critical reflection, and responsible action. Therefore, the pedagogical value of AI depends on whether it can be embedded within educational relationships and value systems rather than merely increasing the speed and efficiency of information delivery. The growing emphasis on teacher readiness, pedagogical competence, and digital literacy reinforces the importance of educators as mediators of AI-supported learning (Pahrudin et al., 2025; Swandi et al., 2026).

Alongside these pedagogical opportunities, the literature increasingly identifies significant ethical challenges. AI-mediated education raises concerns about academic integrity, plagiarism, authorship, misinformation, privacy, transparency, bias, accountability, and the changing nature of teacher and learner responsibilities (Leong & Zhang, 2025; Devadason et al., 2025; Herbert, 2026). Faculty members increasingly need to exercise professional discretion when determining how AI should be incorporated into teaching, assessment, and academic decision-making (Alsharefeen, 2025). Academic integrity policies also need to adapt to the emergence of generative AI because conventional approaches to plagiarism and assessment may no longer adequately capture the complexities of AI-assisted learning (Alsharefeen & Al Sayari, 2025). These challenges become even more consequential in Islamic education because AI-generated errors, hallucinations, inappropriate sources, or decontextualized interpretations can influence students' understanding of religious concepts and practices. Nazir et al. (2025), for instance, emphasize the importance of developing an ethical framework for AI-mediated

engagement with Qur'anic verses based on Hadith methodology. Likewise, Qaruty et al. (2025) highlight the ethical, legal, and theological dimensions that emerge when AI intersects with Islamic jurisprudence.

Recent scholarship therefore indicates a movement toward value-sensitive and Islamically grounded approaches to AI governance. Kannike and Fahm (2025) emphasize the importance of Islamic ethical perspectives in governing artificial intelligence, while Samad et al. (2026) examine the application of Shari'ah principles to AI governance. Belabes (2026) proposes the SMELT model as a systemic framework for AI ethics, while Syamsudduha et al. (2026) conceptualize Islamic AI literacy as a responsible knowledge practice in Indonesian Islamic higher education. These developments are important because they suggest that AI literacy in Islamic education should not be limited to the ability to operate technological tools. Rather, learners and educators need the capacity to evaluate AI-generated information, verify religious sources, recognize limitations and biases, exercise ethical judgment, and maintain human responsibility over educational decisions. Thus, the integration of AI requires not merely technological adaptation but also an ethical transformation of educational practices.

Despite this expanding body of research, existing scholarship remains fragmented across technological, pedagogical, and ethical dimensions. A considerable proportion of studies focus on what AI can technically accomplish, such as recognizing Qur'anic recitation, supporting memorization, retrieving religious texts, generating learning materials, or providing conversational assistance (Alfadhli et al., 2024; Nasir et al., 2025; Adiyono et al., 2026; Nouri, 2026). Although these contributions demonstrate important technological possibilities, they provide comparatively limited attention to how AI may transform fundamental pedagogical relationships, including teacher authority, learner agency, religious knowledge mediation, assessment, and character formation. Similarly, research on personalized learning tends to emphasize accessibility, efficiency, and individualized instruction (Abubakari, 2025; Shehab et al., 2025), while giving less attention to whether personalization is consistent with the normative and moral objectives of Islamic education.

A further limitation is the separation between pedagogical and ethical discussions. Research on AI ethics commonly focuses on academic integrity, privacy, governance, transparency, and algorithmic accountability (Li & Huang, 2025; Devadason et al., 2025; Herbert, 2026), whereas research on AI in Islamic education often emphasizes technological applications, learning outcomes, and digital transformation. This separation creates an important conceptual problem because pedagogical innovation without ethical direction may produce technologically sophisticated but educationally inappropriate practices, while ethical principles without pedagogical integration may remain abstract and difficult to implement. The emerging literature on Islamic AI literacy, human mediation, and source verification begins to address this issue (Syamsudduha et al., 2026; Mat Yusoff et al., 2026), but an integrated understanding of how pedagogical innovation and ethical transformation interact within the future of Islamic education remains insufficiently developed.

The existing systematic and conceptual literature provides an important foundation but also reveals this unresolved gap. Arif et al. (2026), through a PRISMA-based review, synthesize developments in AI and Islamic religious education and propose the SEI-CHAT framework. Almajdoub et al. (2026) similarly examine the pedagogical promise, practical challenges, and

ethical concerns of AI in Qur'anic education. Andri Nirwana et al. (2025) analyze the cognitive, affective, and psychomotor implications of AI integration in Islamic education. However, these contributions do not yet fully integrate AI-supported pedagogical transformation with the broader ethical and epistemological reconstruction required for Islamic education in an algorithmic environment. The field therefore needs to move beyond an application-oriented perspective toward a transformative perspective that examines how AI is changing not only educational techniques but also the roles of teachers and learners, the processes of religious knowledge construction and verification, and the ethical purposes of education.

This study addresses this gap by positioning the future of Islamic education at the intersection of pedagogical innovation and ethical transformation. Its central premise is that AI should not be understood merely as an instructional technology that increases efficiency, but as a transformative force requiring the reconsideration of pedagogical practices, teacher professionalism, learner agency, religious knowledge authority, and ethical governance. The novelty of this perspective lies in integrating technological, pedagogical, epistemological, and ethical dimensions into a single analytical framework. In this framework, AI can support personalized learning, intelligent feedback, adaptive instruction, Qur'anic learning, Hadith education, Arabic language learning, and traditional Islamic scholarship, but these functions must remain embedded within meaningful human mediation and Islamic ethical principles. AI therefore functions not as a replacement for the educator but as a technologically intelligent partner whose educational value depends on human judgment, pedagogical competence, source verification, and moral responsibility (Mat Yusoff et al., 2026; Yusgiantara, 2026).

This integrated perspective also contributes to the reconceptualization of human–AI collaboration in Islamic education. Rather than positioning AI and teachers in a binary relationship of replacement versus resistance, the future of Islamic education can be conceptualized as a collaborative ecosystem in which AI provides computational capabilities while teachers retain responsibility for interpretation, contextualization, ethical judgment, spiritual guidance, and character formation. Such an approach is particularly important because religious education involves forms of knowledge and human development that cannot be reduced to computational accuracy or predictive performance. The teacher's role therefore evolves from being primarily a transmitter of information toward becoming a pedagogical, epistemic, and ethical mediator who guides students in critically engaging with both AI-generated information and traditional sources of Islamic knowledge.

Accordingly, this study aims to systematically examine the future of Islamic education in the age of artificial intelligence by analyzing the intersection between pedagogical innovation and ethical transformation. It specifically investigates the major forms and emerging trends of AI integration in Islamic education, examines how AI transforms pedagogical practices such as personalization, student-centered learning, assessment, feedback, and teacher–student interaction, critically analyzes the ethical and epistemological challenges associated with AI-mediated religious learning, and identifies the principles required for responsible human–AI collaboration. The study is guided by five research questions: (1) What are the major forms and emerging trends of artificial intelligence integration in Islamic education? (2) How is AI transforming pedagogical practices, including personalization, student-centered learning, assessment, feedback, and teacher–student interaction in Islamic education? (3) What ethical,

epistemological, and religious challenges emerge from the integration of AI into Islamic education? (4) How should the roles of teachers, learners, and AI be reconceptualized to establish effective and ethically responsible human–AI collaboration in Islamic education? and (5) What pedagogical and ethical principles can guide the future development of AI-integrated Islamic education?

Method

This study employed a Systematic Literature Review (SLR) to examine the development of artificial intelligence (AI) in Islamic education, with particular attention to pedagogical innovation, human–AI collaboration, religious knowledge practices, and ethical transformation. A systematic literature review was selected because it enables researchers to identify, evaluate, organize, and synthesize relevant evidence from a defined body of literature while making the review process transparent and reproducible. The review was reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 statement, which provides updated guidance for reporting the identification, screening, eligibility assessment, and inclusion of studies in systematic reviews (Page et al., 2021). PRISMA 2020 emphasizes transparent reporting of search strategies, study selection, data extraction, and synthesis procedures, thereby strengthening the methodological rigor and reproducibility of evidence-based reviews.

The review was guided by five research questions concerning the major forms of AI integration in Islamic education, its pedagogical implications, the ethical and epistemological challenges associated with AI-mediated religious learning, the changing roles of teachers and learners, and the principles required for responsible human–AI collaboration. The formulation of the review questions was designed to capture both the technological and educational dimensions of AI integration rather than limiting the analysis to specific AI applications. This approach was considered appropriate because the contemporary literature encompasses diverse forms of AI implementation, including generative AI, intelligent tutoring systems, natural language processing, AI-supported Qur'anic learning, personalized learning, conversational agents, learning analytics, and AI-based educational platforms.

The literature search was conducted across major scholarly databases, including Scopus, Web of Science, ScienceDirect, SpringerLink, IEEE Xplore, and Google Scholar, to identify peer-reviewed journal articles, conference papers, and scholarly book chapters relevant to AI and Islamic education. The search strategy combined keywords and Boolean operators related to the principal concepts of the study. The primary search string included combinations of terms such as “artificial intelligence” OR “AI” OR “generative AI” OR “ChatGPT” AND “Islamic education” OR “Islamic religious education” OR “Islamic learning” OR “Quranic education” OR “Qur'an education” OR “Hadith education” OR “Arabic education” AND “pedagogy” OR “personalized learning” OR “teaching” OR “learning” OR “ethics” OR “Islamic ethics” OR “human-AI collaboration” OR “AI governance.” Search terms were subsequently adapted to the syntax and indexing characteristics of individual databases. In accordance with PRISMA 2020 recommendations, the search strategy, databases, search terms, and eligibility restrictions were documented to enhance transparency and reproducibility (Page et al., 2021).

The search was restricted primarily to publications from 2020 to 2026, reflecting the accelerated development of generative AI and AI-supported educational technologies during this period. Particular emphasis was placed on publications from 2024–2026, given the rapid emergence of generative AI applications and the increasing scholarly attention to AI in Islamic education during these years. Studies published in English were prioritized because English-language databases provide extensive international coverage of AI and educational research. However, studies addressing Islamic education in specific national or regional contexts were retained when they provided substantial conceptual, empirical, or methodological relevance to the research questions.

Studies were selected according to predefined inclusion and exclusion criteria. Studies were included when they (1) addressed artificial intelligence or AI-related technologies; (2) examined education, learning, teaching, curriculum, assessment, or educational governance; (3) focused specifically on Islamic education, Islamic religious education, Qur'anic education, Hadith education, Arabic education in Islamic institutions, or closely related Islamic learning contexts; (4) discussed pedagogical, technological, epistemological, ethical, or governance implications; and (5) provided sufficient scholarly information for analysis. Studies were excluded when they (1) focused exclusively on AI applications unrelated to education; (2) addressed Islamic finance, Islamic law, or other non-educational domains without a meaningful educational implication; (3) were duplicate records; (4) were editorials, news articles, opinion pieces, or non-scholarly web materials; or (5) did not provide sufficient information to establish their relevance to the research questions. This distinction was particularly important because the broader AI literature in Islamic contexts includes substantial research on Islamic finance, Shari'ah governance, and Islamic jurisprudence that may be conceptually relevant to AI ethics but does not directly address educational transformation.

The study-selection process consisted of four sequential stages: identification, duplicate removal, title and abstract screening, and full-text eligibility assessment. During the identification stage, all records retrieved from the selected databases were compiled into a reference-management database. Duplicate records were subsequently removed. The remaining records were screened based on titles and abstracts to determine their initial relevance to the research questions. Potentially relevant studies were then subjected to full-text assessment against the predefined eligibility criteria. Studies that satisfied all criteria were included in the final synthesis. The process was documented using a PRISMA 2020 flow diagram, allowing the number of records identified, screened, excluded, assessed for eligibility, and finally included to be reported transparently. PRISMA 2020 specifically recommends reporting the number of records at each stage and providing reasons for exclusions at the full-text stage (Page et al., 2021).

Data extraction was conducted using a structured extraction matrix developed according to the research questions. For each included study, information was extracted concerning author and publication year, geographical context, educational level, research design, type of AI technology, Islamic educational domain, pedagogical application, reported educational outcomes, ethical concerns, epistemological issues, teacher and learner roles, and recommendations for future implementation. Additional attention was given to evidence concerning personalization, student-centered learning, assessment, feedback, Qur'anic learning,

Hadith learning, Arabic language learning, *Kitab Kuning*, academic integrity, source verification, Islamic AI literacy, human mediation, and AI governance. The use of a structured extraction framework enabled comparison across studies and reduced the possibility of overlooking important conceptual dimensions.

The methodological quality and relevance of the included literature were considered during the synthesis. Rather than treating all publications as equivalent sources of evidence, attention was given to research design, methodological transparency, clarity of research objectives, appropriateness of data sources, and consistency between methods and conclusions. Conceptual and review papers were used primarily to identify theoretical frameworks and emerging debates, whereas empirical studies were examined for evidence concerning actual AI implementation, educational experiences, and reported outcomes. This distinction was important for avoiding the assumption that technological possibilities described in conceptual papers necessarily represent established educational effects.

The analysis employed a thematic synthesis rather than statistical meta-analysis. This approach was selected because the included literature was expected to be heterogeneous in terms of research design, educational context, AI technologies, Islamic educational domains, and outcome measures. PRISMA 2020 recognizes that systematic reviews may use different approaches to synthesis depending on the characteristics of the evidence, and recommends that reviewers clearly describe the processes used to organize and synthesize findings (Page et al., 2021). The thematic synthesis involved three stages. First, findings were coded according to recurrent concepts and reported applications of AI. Second, related codes were grouped into broader analytical categories. Third, these categories were interpreted comparatively to identify patterns, contradictions, emerging trends, unresolved problems, and research gaps.

The thematic analysis was organized around four principal dimensions: (1) pedagogical innovation, (2) human–AI collaboration, (3) Islamic epistemology and religious knowledge authenticity, and (4) ethical transformation and governance. The pedagogical innovation dimension examined personalization, adaptive learning, student-centered learning, AI-assisted assessment, feedback, instructional design, and hybrid learning. The human–AI collaboration dimension focused on changing teacher and learner roles and the extent to which AI functions as an assistant, conversational partner, instructional support system, or autonomous educational agent. The epistemological dimension examined source verification, authenticity of Qur'anic and Hadith knowledge, reliability of AI-generated religious content, and the role of human scholars and teachers in knowledge validation. The ethical dimension examined academic integrity, privacy, bias, accountability, transparency, moral agency, *adab*, responsible AI use, and Islamic principles of governance.

The synthesis then moved from descriptive mapping toward critical interpretive analysis. The purpose was not merely to summarize the applications of AI reported in previous studies but to examine how these developments collectively challenge conventional assumptions about Islamic pedagogy. Particular attention was given to tensions between technological efficiency and educational authenticity, personalization and moral formation, automation and teacher authority, accessibility and epistemic reliability, and innovation and ethical responsibility. This interpretive approach allowed the study to identify the conditions

under which AI can contribute positively to Islamic education while also identifying circumstances in which technological adoption may create pedagogical or ethical risks.

Finally, the findings were synthesized into an integrated conceptual interpretation of the future of Islamic education in the AI era. The synthesis connected technological capabilities with pedagogical objectives and Islamic ethical principles, leading to a framework centered on human-mediated AI integration. Within this framework, AI is conceptualized as a technological partner capable of supporting personalization, knowledge access, feedback, assessment, and learning interaction, while teachers retain responsibility for pedagogical judgment, contextualization, religious interpretation, source verification, ethical guidance, and character formation. This methodological approach enables the review to move beyond an inventory of AI applications toward a theoretically informed understanding of how AI may reshape Islamic education while maintaining its epistemological and ethical foundations.

Results and Discussion

The synthesis of the reviewed literature demonstrates that artificial intelligence (AI) is not merely extending the digitalization of Islamic education but is fundamentally altering the ways in which knowledge is accessed, mediated, personalized, assessed, and validated. Across the literature, AI applications increasingly encompass personalized learning, Qur'anic recitation and memorization, Arabic language learning, Hadith education, *Kitab Kuning* learning, automated assessment, conversational learning, learning analytics, and educational management (Abubakari, 2025; Adiyono et al., 2026; Alfadhli et al., 2024; Nouri, 2026; Shehab et al., 2025). This development indicates a shift from technology functioning primarily as a repository or communication medium toward technology functioning as an active component of the learning process. More importantly, the implications of this transition extend beyond instructional efficiency. AI simultaneously challenges established pedagogical relationships, conventional assumptions regarding epistemic authority, academic integrity, and the boundaries between technological assistance and human educational responsibility. The findings therefore suggest that the future of Islamic education in the AI era should be conceptualized as a multidimensional transformation in which technological capability is continuously mediated by human agency, epistemic responsibility, and Islamic ethical principles.

Emerging Forms and Trajectories of AI Integration

The first research question examined the major forms and emerging trends of AI integration in Islamic education. The evidence indicates a gradual transition from general-purpose digital technologies toward increasingly adaptive, generative, interactive, and domain-specific AI applications. Whereas earlier digital transformation largely emphasized access to electronic learning resources and online communication, contemporary AI systems increasingly perform functions associated with prediction, recognition, generation, personalization, and automated feedback. This transition is particularly visible in Qur'anic education, where AI-supported speech recognition can analyse recitation and provide feedback, while AI-enabled systems are increasingly being explored for memorization, retrieval, translation, and other forms of Qur'anic learning (Alfadhli et al., 2024; Aljabr, 2025; Elhassouny et al., 2026; Nasir et al., 2025).

The significance of this development lies not simply in the availability of new technological tools but in the increasing domain specificity of AI-mediated Islamic learning. AI is progressively being adapted to the linguistic, textual, and pedagogical characteristics of particular Islamic educational domains. The development of AI-supported *Kitab Kuning* platforms, for example, illustrates an attempt to connect computational technologies with traditional Islamic textual scholarship (Adiyono et al., 2026). Similarly, conversational AI has been investigated as a medium for Hadith education, suggesting a movement from static digital content toward interactive learning environments capable of responding to learner queries and generating individualized explanations (Nouri, 2026).

Generative AI further expands this trajectory by enabling teachers and learners to generate explanations, questions, examples, summaries, learning activities, and interactive dialogues. Consequently, the emerging pattern can be interpreted as a movement from digital access toward intelligent augmentation. In this emerging model, AI does not simply deliver educational content; it participates in the organization, transformation, and generation of learning resources.

Nevertheless, the literature also indicates that technological sophistication should not be equated with pedagogical appropriateness. Different AI technologies possess different educational affordances. Speech-recognition systems may be particularly appropriate for Qur'anic pronunciation and recitation, whereas generative conversational systems may be more suitable for dialogue, explanation, brainstorming, and formative learning. The implication is that AI adoption should be determined by pedagogical fitness rather than technological novelty. Such an orientation is particularly important in Islamic education because the educational value of a technological system cannot be assessed exclusively through efficiency or learning outcomes; its compatibility with the epistemological and ethical purposes of Islamic education must also be considered.

Table 1. Emerging Forms of AI Integration in Islamic Education

Domain	AI-enabled application	Emerging educational transformation
Qur'anic education	Recitation recognition, memorization, retrieval, translation	From repetitive practice toward adaptive and technology-supported learning
Islamic textual learning	*Kitab Kuning* search, analysis, annotation, explanation	From static digitization toward intelligent textual engagement
Hadith education	Conversational AI and interactive explanation	From static content toward dialogic and responsive learning
Arabic education	Conversation, translation, writing, and feedback	From limited classroom exposure toward continuous personalized practice
Personalized learning	Adaptive content and recommendations	From standardized instruction toward differentiated learning pathways
Assessment	Automated feedback and adaptive assessment	From periodic evaluation toward continuous formative assessment

Generative learning	Content, question, and activity generation	From content consumption toward human–AI co-creation
Educational management	Analytics, planning, and classroom support	From digital administration toward intelligent educational management

AI and the Transformation of Islamic Pedagogy

The second research question focused on how AI is transforming pedagogical practices, particularly personalization, student-centred learning, assessment, feedback, and teacher–student interaction. The literature consistently identifies personalization as one of the most significant pedagogical affordances of AI. By processing learner responses and behavioural patterns, AI systems can recommend resources, generate differentiated materials, and provide immediate feedback. This capability is especially relevant to Islamic education because learners may enter the same educational environment with considerable differences in Qur'anic literacy, Arabic proficiency, memorization ability, and prior religious knowledge (Abubakari, 2025; Hoerudin et al., 2026; Shehab et al., 2025).

The pedagogical significance of personalization extends beyond convenience. It reflects a shift from predominantly standardized instructional structures toward more learner-centred learning pathways. Learners can repeat Qur'anic passages, request alternative explanations, practise Arabic communication, obtain immediate feedback, and explore supplementary materials according to their individual needs. Such capabilities may strengthen learner autonomy and engagement. However, personalization should not be interpreted as a justification for reducing the social and relational dimensions of Islamic education. Islamic pedagogy traditionally emphasizes *adab*, mentorship, social interaction, modelling, and teacher–student relationships. Accordingly, AI-supported personalization should be understood as a mechanism for enhancing individualized learning within, rather than outside, a human educational relationship.

AI also changes the temporal structure of assessment and feedback. Traditional assessment tends to occur at predetermined stages through examinations, assignments, and teacher-generated tests. AI enables more continuous assessment by identifying learning difficulties, generating adaptive questions, analysing learner responses, and providing immediate feedback. Such capabilities are particularly relevant to Qur'anic recitation and language learning, where improvement depends on repeated practice and timely correction. Research on AI-supported inclusive assessment similarly indicates the potential of AI to make evaluation more adaptive and responsive to learner differences (Nayak et al., 2024).

At the same time, generative AI creates a fundamental challenge to conventional assumptions concerning assessment validity. When learners can employ AI to generate essays, summaries, answers, or other academic products, the final product may no longer provide an adequate representation of individual learning. The literature on academic integrity consequently calls for a reconsideration of authorship, plagiarism, acceptable AI assistance, and assessment design (Alsharefeen & Al Sayari, 2025; Herbert, 2026; Leong & Zhang, 2025). In Islamic education, this challenge has an additional ethical dimension because academic honesty can be situated within the broader principle of *amanah*. Assessment should therefore increasingly

evaluate reasoning processes, interpretation, reflection, source verification, oral explanation, and practical application rather than relying exclusively on polished final products.

The transformation of assessment consequently implies a broader transformation of the teacher's role. AI can perform several repetitive functions, including information retrieval, question generation, preliminary feedback, and routine assessment. This creates opportunities for teachers to devote greater attention to contextual interpretation, interpersonal engagement, ethical judgment, and spiritual mentoring. The teacher is consequently not eliminated but repositioned as a pedagogical designer, facilitator, knowledge curator, religious validator, and ethical mentor. This interpretation is consistent with research emphasizing teacher readiness, digital literacy, and pedagogical competence as essential conditions for effective AI integration (Pahrudin et al., 2025; Swandi et al., 2026; Wedi et al., 2025).

Ethical, Epistemological, and Religious Challenges

The third research question examined the ethical, epistemological, and religious challenges emerging from AI integration. Among these challenges, the issue of epistemic authority is particularly significant. Generative AI can produce highly fluent and apparently authoritative explanations, but linguistic coherence does not necessarily constitute epistemological or religious validity. AI systems may generate inaccurate interpretations, fabricated references, decontextualized explanations, or responses that inadvertently combine different jurisprudential positions. These risks are particularly consequential in Qur'anic interpretation, Hadith, *Fiqh*, and *Aqidah*, where authenticity, methodological consistency, contextual interpretation, and scholarly authority constitute essential dimensions of knowledge validation (Aljabr, 2025; Nazir et al., 2025; Sahimi et al., 2025).

The synthesis therefore establishes a fundamental distinction between AI-generated information and validated Islamic knowledge. AI can assist in locating, organizing, translating, summarizing, and comparing information, but it cannot independently determine the religious validity of the information it produces. Islamic knowledge requires verification through authoritative sources, established scholarly methodologies, and qualified human educators. Recent studies similarly emphasize human mediation and source verification as essential safeguards in the use of generative AI for Islamic religious education (Almajdoub et al., 2026; Mat Yusoff et al., 2026).

This distinction expands the conventional discourse on AI ethics. General AI ethics commonly emphasizes transparency, accountability, privacy, fairness, explainability, and safety. Islamic education requires these principles to be complemented by concepts such as *amanah*, *adab*, *maslahah*, authenticity, justice, and religious responsibility. The ethical question is therefore not simply whether an AI system is technically safe or institutionally compliant, but whether its educational use contributes to the purposes of Islamic education while preserving human dignity, intellectual responsibility, and religious authenticity.

Academic integrity represents another major challenge. Generative AI may enable learners to outsource substantial cognitive tasks and submit AI-generated work without disclosure. Such practices can weaken independent reasoning and undermine the formative purpose of assessment. Nevertheless, a purely prohibitive approach is unlikely to provide a sustainable educational response. Instead, Islamic educational institutions should establish a

distinction between responsible AI-assisted learning and AI-mediated substitution of student intellectual work. Responsible use requires transparency, source verification, appropriate acknowledgement of AI assistance, and continued human responsibility for the final academic product.

The ethical landscape is further complicated by privacy risks, algorithmic bias, unequal technological access, and excessive dependence on AI. AI systems frequently rely on substantial amounts of learner data, while their outputs may reproduce biases embedded within training datasets or system design. In Islamic education, these risks become particularly significant when AI mediates culturally or doctrinally specific religious knowledge. AI systems should therefore be subjected to contextual and pedagogical evaluation rather than adopted solely on the basis of technical performance.

Reconceptualizing Teachers, Learners, and AI

The fourth research question concerned how the roles of teachers, learners, and AI should be reconceptualized. The evidence does not support a simple substitution model in which AI replaces teachers. Instead, the literature points toward an augmentation and complementarity model. AI demonstrates considerable strength in processing large volumes of information, recognizing patterns, generating content, personalizing learning, and delivering rapid feedback. Teachers, however, retain distinctive capacities related to contextual interpretation, emotional support, ethical reasoning, religious validation, character formation, and spiritual mentoring.

This distinction is particularly important because the objectives of Islamic education extend beyond cognitive achievement. The development of *adab*, moral responsibility, spiritual awareness, social responsibility, and ethical character cannot be reduced to algorithmic optimization. Even when AI assumes an increasingly important informational and computational role, the teacher remains central to the formation of the learner as a morally and spiritually responsible person.

The learner's role must similarly evolve. Learners should no longer be understood merely as recipients of AI-generated information but as critical, reflective, and ethically responsible users of AI. This requires learners to formulate meaningful questions, evaluate AI outputs, identify potential errors, verify sources, compare interpretations, and assume responsibility for decisions made with AI assistance. The development of context-specific AI literacy is therefore essential. Syamsudduha et al. (2026), for example, conceptualize Islamic AI literacy as a responsible knowledge practice in which technological competence is accompanied by critical and ethical awareness.

AI, meanwhile, should be positioned as an educational assistant rather than an autonomous teacher or religious authority. Its primary function is to augment human capabilities rather than determine educational purposes. This conceptualization establishes a clear boundary between computational assistance and educational authority. AI can support the processes of learning, but teachers and qualified scholars remain responsible for pedagogical judgment and religious validation.

Table 2. Reconceptualization of Actors in AI-Integrated Islamic Education

Actor	Reconceptualized role	Primary responsibility

Teacher	Pedagogical designer, curator, validator, and mentor	Learning design, contextual interpretation, verification, ethical guidance
Learner	Critical, reflective, and AI-literate co-learner	Independent reasoning, source verification, and responsible AI use
AI	Intelligent educational assistant	Personalization, generation, retrieval, feedback, and analytics
Scholar	Epistemic and religious validator	Authenticity, methodological consistency, and contextual validation
Institution	AI governance ecosystem	Policy, infrastructure, data protection, equity, and ethical regulation

Principles for the Future of AI-Integrated Islamic Education

The fifth research question addressed the pedagogical and ethical principles that should guide the future development of AI-integrated Islamic education. The synthesis identifies ten interrelated principles: human agency, religious authenticity, source verification, pedagogical intentionality, ethical accountability, transparency, inclusivity, data responsibility, critical AI literacy, and holistic human development.

Human agency should remain the foundational principle. AI should assist rather than determine educational objectives and decisions. Religious authenticity requires AI-mediated Islamic learning to remain grounded in authoritative sources and established scholarly traditions. Source verification requires teachers and learners to critically examine AI-generated outputs rather than treating them as inherently reliable. Pedagogical intentionality requires institutions to adopt AI only when its use serves clearly defined educational objectives.

Ethical accountability requires human actors to remain responsible for AI-assisted educational outcomes. Transparency requires appropriate disclosure of AI use, particularly in academic work. Inclusivity requires educational institutions to address disparities in access to devices, connectivity, digital competencies, and high-quality AI systems. Data responsibility requires appropriate protection of learner information. Critical AI literacy enables learners and teachers to understand both the capabilities and limitations of AI. Finally, holistic development requires AI to support not only intellectual and academic achievement but also moral, spiritual, emotional, and social development.

Table 3. Principles for Future AI-Integrated Islamic Education

Principle	Core meaning	Educational implication
Human agency	Humans retain final judgment	AI remains subordinate to human educational decisions
Religious authenticity	Islamic knowledge requires authoritative grounding	AI-generated religious content must be verified
Source verification	Generated information requires critical examination	Use primary and authoritative scholarly sources
Pedagogical intentionality	Technology serves educational objectives	Avoid technology-driven adoption
Ethical accountability	Human users remain responsible	Establish clear responsibilities for AI use

Transparency	AI assistance is appropriately disclosed	Develop explicit AI-use policies
Inclusivity	AI benefits should be broadly accessible	Address digital and technological inequality
Data responsibility	Learner data must be protected	Strengthen privacy and data governance
Critical AI literacy	Users understand AI capabilities and limitations	Integrate AI literacy into the curriculum
Holistic development	Education develops the whole person	Preserve moral, spiritual, and social formation

The Human–AI–Islamic Values Framework

The convergence of the five research questions produces the central conceptual contribution of this systematic review: the Human–AI–Islamic Values Framework. Existing research has addressed AI personalization, generative learning, Qur'anic applications, academic integrity, and AI ethics, but these dimensions have often been examined as relatively separate concerns. The present synthesis indicates that such separation is inadequate because pedagogical effectiveness, epistemological validity, and ethical responsibility are mutually dependent in Islamic education.

The proposed framework consists of three interconnected layers. The first layer is AI capability, encompassing personalization, content generation, automated feedback, retrieval, recognition, and learning analytics. The second is human mediation, encompassing teacher judgment, learner criticality, scholarly verification, and institutional governance. The third is Islamic value alignment, encompassing *amanah*, *adab*, *maslahah*, justice, authenticity, accountability, and human dignity. These three dimensions interact to establish responsible human–AI collaboration, which ultimately supports transformative Islamic education.

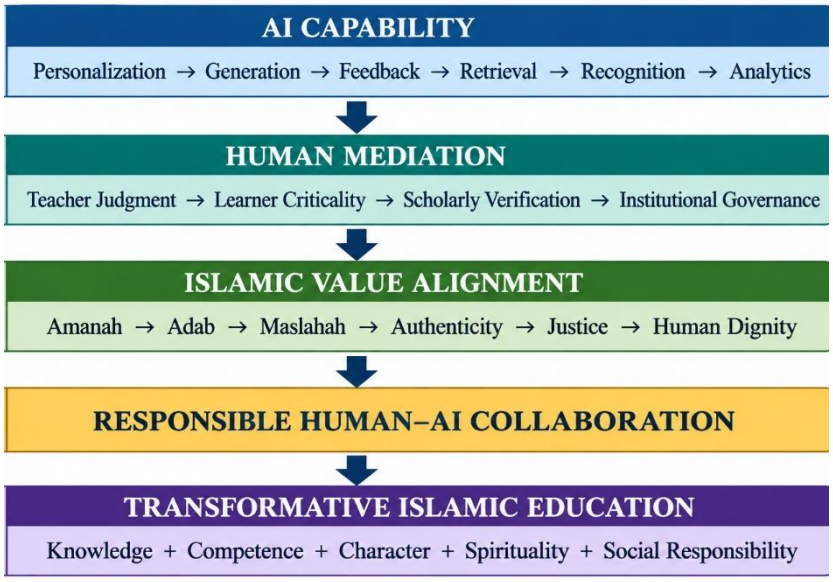


Figure 1. Human–AI–Islamic Values Framework for the Future of Islamic Education

The framework provides an integrated response to all five research questions. First, AI integration is expanding from conventional digital tools toward personalized, generative, conversational, and domain-specific systems. Second, these technologies are transforming personalization, student-centred learning, assessment, feedback, and teacher–student interaction. Third, the transformation generates significant ethical, epistemological, and religious challenges, particularly concerning authority, authenticity, integrity, privacy, bias, and dependency. Fourth, these challenges require teachers, learners, scholars, institutions, and AI systems to operate according to complementary rather than substitutive roles. Fifth, sustainable AI integration requires pedagogical and ethical principles that preserve human agency, religious authenticity, accountability, and holistic educational development.

Table 4. Integrated Findings in Relation to the Research Questions

Research question	Principal finding	Conceptual implication
RQ1. Forms and emerging trends	AI is moving from general digital tools toward personalized, generative, conversational, and domain-specific systems	AI is becoming an emerging educational infrastructure
RQ2. Pedagogical transformation	AI strengthens personalization, learner autonomy, adaptive assessment, feedback, and new forms of interaction	Pedagogy is moving toward human–AI collaboration
RQ3. Ethical, epistemological, and religious challenges	Key challenges involve authenticity, epistemic authority, hallucination, integrity, privacy, bias, and dependency	AI requires epistemic and ethical governance
RQ4. Reconceptualized roles	Teachers become mentors and validators; learners become critical AI users; AI functions as an assistant	Complementarity is more appropriate than substitution
RQ5. Future principles	Human agency, authenticity, verification, accountability, inclusivity, transparency, and holistic development are essential	AI integration should be value-regulated rather than technology-driven

Taken together, these findings suggest that the future of Islamic education cannot be adequately framed through the binary question of whether AI should be accepted or rejected. The more consequential question concerns the pedagogical, epistemological, and ethical conditions under which AI can legitimately contribute to the purposes of Islamic education. The evidence demonstrates substantial potential for AI to expand learning access, personalize instruction, strengthen feedback, facilitate Qur'anic and Islamic textual learning, and support educational management. Yet these benefits are neither automatic nor technologically determined. Their educational value depends on the quality of human mediation and the normative framework within which AI is deployed.

The central implication is therefore that AI should augment rather than replace Islamic education. AI contributes computational capability; teachers contribute pedagogical and

relational judgment; scholars contribute epistemic and religious validation; learners contribute critical engagement; and Islamic values provide normative direction. This distribution of responsibilities offers a more sustainable model of technological integration than either technological determinism or technological rejection.

Accordingly, the future of Islamic education in the AI era should be guided by a dynamic balance between innovation and authenticity, personalization and human connection, automation and accountability, and technological capability and moral formation. The objective should not be to maximize the presence of AI within Islamic education, but to maximize its educational contribution while protecting human agency, religious authenticity, ethical responsibility, and holistic learner development. The future of Islamic education is therefore best conceptualized not as a transition toward *AI replacing the teacher*, but as the emergence of AI-enabled human–AI collaboration governed by Islamic pedagogical, epistemological, and ethical principles.

Conclusion

This study concludes that artificial intelligence (AI) offers significant opportunities to transform Islamic education through personalized learning, adaptive instruction, automated feedback, generative learning resources, and digital Islamic knowledge platforms. These developments can enhance learning accessibility, student engagement, and pedagogical effectiveness. However, AI integration should not be limited to technological efficiency but must remain aligned with the epistemological foundations and ethical objectives of Islamic education.

The findings emphasize that teachers, learners, and AI should operate through complementary roles. Teachers remain essential as pedagogical facilitators, knowledge validators, ethical guides, and mentors, while learners must develop critical thinking, digital literacy, and responsibility in evaluating AI-generated information. AI should function as an educational assistant rather than a replacement for human judgment, religious authority, and moral guidance.

This study proposes the Human–AI–Islamic Values Framework, consisting of three interconnected dimensions: AI capability, human mediation, and Islamic value alignment. The framework integrates technological functions such as personalization, generation, feedback, retrieval, recognition, and analytics with human judgment, scholarly verification, and institutional governance, guided by Islamic values of amanah, adab, maslahah, authenticity, justice, and human dignity.

Practically, Islamic educational institutions need to strengthen teacher competencies, AI literacy, curriculum innovation, academic integrity, and institutional governance to ensure responsible AI implementation. Future research should empirically examine the proposed framework across Islamic schools, madrasahs, pesantren, and higher education institutions.

Ultimately, the future of Islamic education depends not on how extensively AI is adopted, but on how effectively technological innovation is integrated with human agency, religious authenticity, and Islamic ethical values. AI should make Islamic education more innovative without diminishing its human, moral, and spiritual foundations.

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Declaration of use of artificial intelligence

The authors declare that artificial intelligence (AI) tools were used to support the preparation of this manuscript, particularly for language refinement, academic writing assistance, and the organization of ideas. AI-generated suggestions were critically reviewed, verified, and revised by the authors to ensure academic accuracy, originality, and consistency with the research objectives. All interpretations, analyses, arguments, and conclusions remain the responsibility of the authors. The authors take full responsibility for the content and integrity of this manuscript.

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