Artificial Intelligence in Islamic Education Pedagogy: A Systematic Review of Learning Strategies

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Abstract

The rapid development of artificial intelligence (AI) is transforming educational practices by enabling new forms of instructional support, personalized learning, content generation, assessment, and feedback. However, evidence concerning how AI is integrated into pedagogical strategies within Islamic education remains fragmented across applications, educational contexts, and research approaches. This systematic review aims to examine how AI is used in Islamic education pedagogy, with particular attention to learning strategies, learning activities, teacher and student roles, assessment, feedback, and the conditions required for responsible implementation. The study employed a systematic literature review design guided by the PRISMA 2020 and PRISMA-S reporting frameworks and informed by the JBI Manual for Evidence Synthesis. Relevant literature was searched in Scopus and Web of Science Core Collection, with Google Scholar used as a supplementary source, covering studies published from January 2021 to September 2026. The findings indicate that AI is primarily used to support instructional planning, learning material development, personalized and adaptive learning, interactive and independent learning, question and task generation, assessment, and feedback. AI also contributes to changing teacher and student roles, while human mediation, source verification, ethical awareness, and critical evaluation remain essential, particularly for ensuring the accuracy and appropriateness of Islamic educational content. Overall, the review demonstrates that the pedagogical value of AI depends not merely on technological adoption but on its alignment with learning objectives, pedagogical strategies, classroom activities, assessment processes, and responsible human oversight.

***Keywords**:* artificial intelligence, islamic education, pedagogy, learning strategies, systematic review

Introduction

The rapid development of artificial intelligence (AI), particularly generative artificial intelligence (GenAI), is reshaping how teaching and learning are conceptualised, designed, implemented, and evaluated. Beyond technological availability, current research increasingly examines how AI functions are integrated with pedagogical strategies, learning activities, assessment, and teacher guidance. Liu and Zhong (2025), in a systematic review of 71 empirical studies, found that GenAI-supported learning is influenced by instructional design, pedagogical strategies, research methods, and the extent of pedagogical scaffolding. Similarly, Qian (2025) showed that research on GenAI in higher education is increasingly concerned with its pedagogical applications rather than adoption alone. These findings indicate that the educational value of AI cannot be adequately understood by identifying what an AI system can do; it must also be examined in relation to how teachers organise learning and how students interact with AI-supported activities.

This issue is particularly important in Islamic education because learning extends beyond cognitive achievement to religious understanding, ethical reasoning, moral conduct, and spiritual development. AI can support the generation of instructional materials, explanation of religious concepts, personalised learning, learning activities, and assessment. However, its integration also raises questions concerning the accuracy and contextual appropriateness of AI-generated religious information, source reliability, teacher mediation, learner dependence, and the relationship between AI-generated content and established sources of Islamic knowledge. Ahmad et al. (2025) identify applications including adaptive learning, automated educational tasks, gamified Qur'anic applications, and intelligent tutoring systems, while Zain et al. (2025) highlight the potential of AI-based learning media to support adaptive, interactive, personalised, and feedback-oriented learning. These applications demonstrate technological potential, but their pedagogical significance depends on how they are embedded within an instructional process.

Research specifically addressing AI in Islamic education has expanded, but its analytical emphases remain diverse. Salim and Aditya (2025) examine trends, methods, and challenges of AI integration, whereas Amilusholihah and Ramadhan (2025) provide a systematic review of AI implementation in Islamic education, identifying 18 studies from 379 records and reporting potential benefits alongside ethical, privacy, and teacher-role concerns. Nasikhin et al. (2025) further show that students use AI for learning and pedagogical development but must critically evaluate AI-generated religious responses because of limitations in cultural, historical, linguistic, and religious contextualisation. Majeed and Ahmad (2025) similarly examine ChatGPT and GenAI in relation to teacher effectiveness in Islamic secondary education. Together, these studies establish an emerging evidence base while addressing different components of AI-supported Islamic education.

Nevertheless, an important research gap remains. Previous reviews have generally focused on AI implementation, opportunities, challenges, technological applications, or particular teacher and student dimensions rather than systematically establishing learning strategy as the central analytical unit. Consequently, evidence remains fragmented concerning how a specific AI function is translated into a pedagogical strategy, learning activity, teacher and student roles, assessment, and feedback. This distinction is essential because the presence

of AI in learning does not necessarily constitute an AI-supported learning strategy. A strategy becomes pedagogically meaningful when AI is deliberately positioned within an instructional sequence and connected to learning objectives, learner activity, human mediation, and evaluation.

This review therefore proposes a process-oriented synthesis linking AI function, pedagogical strategy, learning activity, teacher and student roles, and learning and assessment processes. In the context of Islamic education, this framework additionally considers source verification and human mediation as integral pedagogical and epistemic conditions. This orientation is consistent with Mat Yusoff et al. (2026), whose systematic review identifies GenAI primarily as a pedagogical assistant rather than a replacement for teachers or religious authorities and emphasises human mediation and source verification in Islamic Religious Education. Accordingly, this systematic review examines how AI is applied in Islamic education, which learning strategies and pedagogical practices are reported, how teacher and student roles and learning activities are configured, how AI supports learning materials, assessment and feedback, and what pedagogical, ethical, epistemic, and contextual challenges condition its integration.

Methods

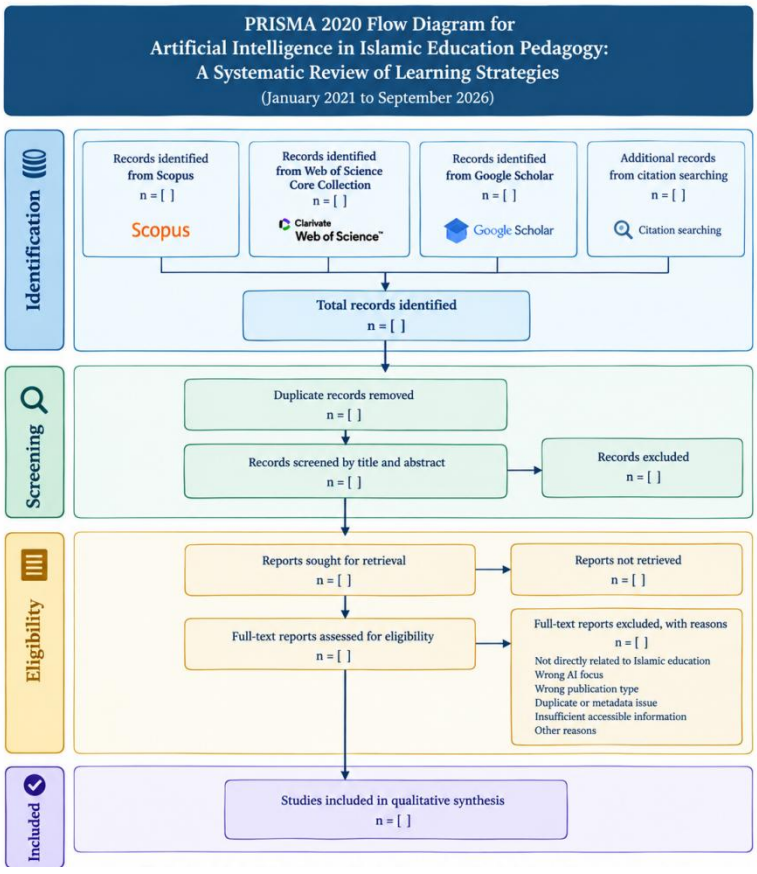


Fig 1. PRISMA 2020 Flow Diagram for Artificial Intelligence in Islamic Education Pedagogy: A Systematic Review of Learning Strategies, January 2021 to September 2026

This study employed a systematic literature review to examine how artificial intelligence is integrated into Islamic education pedagogy, particularly in relation to learning strategies, learning activities, assessment, feedback, and teacher and student roles. The review followed the PRISMA 2020 statement to ensure transparent reporting of the identification, screening, eligibility, and inclusion processes (Page et al., 2021). PRISMA-S was applied to strengthen the transparency and reproducibility of the literature-search procedures, while the JBI Manual for Evidence Synthesis informed the methodological appraisal and synthesis of the included evidence (Aromataris et al., 2024; Rethlefsen et al., 2021).

The literature search covered publications from January 2021 to September 2026. Scopus and Web of Science Core Collection were used as the principal databases, while Google Scholar was used as a supplementary source. Citation searching of relevant publications was also conducted to identify potentially eligible studies not retrieved through the principal databases. The search strategy was structured around artificial intelligence, Islamic education, and pedagogical or learning-strategy concepts. The principal Scopus strategy used TITLE-ABS-KEY with combinations of artificial intelligence, generative artificial intelligence, generative AI, AI-assisted, AI-based, Islamic education, Islamic religious education, Islamic pedagogy, Islamic teaching, Islamic learning, and Islamic studies. Additional pedagogical terms included learning strategy, teaching strategy, pedagogical strategy, pedagogical practice, instructional strategy, learning activity, teaching method, and instructional design. Equivalent concepts were adapted to the search interfaces of Web of Science and Google Scholar.

Studies were eligible when they were peer-reviewed journal articles or substantive peer-reviewed conference proceedings published between January 2021 and September 2026 and directly addressed AI within Islamic education. Eligible studies examined teaching, learning, pedagogy, learning strategies, instructional practices, learning activities, assessment, feedback, teacher practices, student experiences, or educational implementation. Studies were excluded when they focused solely on technical AI development, general digital transformation without substantive AI content, general education without sufficient relevance to Islamic education, non-peer-reviewed publications, duplicate records, or publications lacking sufficient information for eligibility assessment.

The selection process followed the PRISMA 2020 sequence of identification, screening, eligibility, and inclusion. Records retrieved from all sources were consolidated and duplicates were removed using bibliographic information such as DOI, title, authors, and publication year. Titles and abstracts were screened against the predefined criteria, followed by full-text assessment of potentially relevant reports. Full-text exclusions were recorded according to specific reasons. The numerical values reported in the PRISMA flow diagram were derived from the actual search, deduplication, screening, and eligibility records and were not estimated in advance.

Data were extracted using a structured evidence matrix covering publication characteristics, educational context, research design, AI application, learning strategy, pedagogical practice, learning activity, teacher and student roles, assessment, feedback, ethical considerations, and principal findings. Methodological quality was assessed according to research design and informed by JBI guidance. Because the included studies were heterogeneous in design, context, AI application, and outcome measures, the evidence was synthesised thematically rather than through statistical meta-analysis. The synthesis examined

the relationship between AI function, pedagogical strategy, learning activity, human roles, and learning and assessment processes, with particular attention to human mediation, source verification, academic integrity, and responsible use of AI in Islamic education.

Results

AI Applications in Islamic Education Learning

The first theme indicates that artificial intelligence is increasingly integrated across multiple stages of Islamic education, including instructional planning, learning-material development, curriculum development, content generation, personalized and adaptive learning, assessment, feedback, information retrieval, student learning support, and selected administrative activities. The evidence is therefore broader than direct student interaction with AI and encompasses both teacher-oriented and student-oriented functions. However, the depth of implementation differs substantially according to educational context, AI application, research design, and the extent of teacher mediation.

The evidence can be organized into several interconnected application categories. First, AI is used for instructional preparation, including lesson planning, curriculum development, and teaching-material preparation. Salim and Aditya (2025) describe AI integration within broader changes in Islamic educational methods and services, while Ali et al. (2025) extend AI application to curriculum objectives, content, instructional methods, and assessment. Mat Yusoff et al. (2026), based on a systematic review of 13 studies, similarly identifies lesson planning, teaching-material development, assessment, personalization, administrative activities, and Qur'anic learning as important GenAI applications in Islamic Religious Education.

Second, AI supports learning materials and media. Zain et al. (2025) examine AI-based learning media in Islamic Religious Education and associate its use with adaptive and learner-centred learning. Faizudin et al. (2025) similarly connect AI with creativity and innovation in Islamic education. Third, personalization and adaptive learning recur across the evidence. Zarkani et al. (2024) discuss AI in relation to personalized Islamic learning, while Ahmad et al. (2025) identify adaptive learning and intelligent tutoring applications. These findings indicate that personalization is an important proposed function of AI, although the evidence varies between conceptual descriptions and direct classroom implementation.

Fourth, AI is increasingly used for assessment and feedback. The reviewed studies describe question generation, assessment support, feedback, and evaluation as emerging applications. Nevertheless, these functions should not be interpreted as uniformly implemented practices because some studies report actual use, whereas others describe potential or proposed applications. Fifth, AI functions as a student learning-support resource for information seeking, explanation, discussion, task completion, and independent learning. Nasikhin et al. (2025) specifically identify the need to evaluate the validity and contextualization of AI-generated religious responses. Choirotullaili et al. (2026) provide case-based evidence from a Madrasah Aliyah in which AI was used for information seeking, analytical discussion, task completion, and creativity under institutional supervision.

The evidence also reveals an important distinction between reported application and demonstrated educational effect. Literature-based studies primarily establish possible functions and opportunities, whereas qualitative and empirical studies provide evidence of how AI is used in particular settings. This distinction prevents conceptual claims about personalization,

engagement, creativity, or efficiency from being treated as equivalent to experimentally demonstrated learning effects.

A further cross-study pattern is human mediation. Majeed and Ahmad (2025) examine AI in relation to teacher effectiveness, while Yusuf et al. (2026) emphasize teacher strategies for mediating AI use in vocational Islamic Religious Education. Choirotullaili et al. (2026) similarly report planning, classroom implementation, and supervision. Mat Yusoff et al. (2026) provides the clearest systematic synthesis, positioning GenAI primarily as a pedagogical assistant rather than a replacement for teachers or religious authorities.

Taken together, Theme A. identifies an application continuum: instructional preparation → learning-material development → personalization and adaptive support → student learning assistance → assessment and feedback → selected administrative functions. The novelty of the present review lies in connecting this continuum to pedagogical processes rather than treating AI applications as isolated technological functions. The resulting analytical pattern is AI function → educational purpose → pedagogical use → learning activity → human mediation. This framework provides the basis for interpreting the subsequent themes and distinguishes technological application from actual pedagogical implementation.

AI-Supported Learning Strategies and Pedagogical Practices

The second theme demonstrates that AI functions are incorporated into personalized and adaptive learning, independent and self-directed learning, interactive and dialogic learning, inquiry-oriented and problem-solving activities, collaborative learning, and teacher-guided learning. The evidence indicates that AI availability does not itself constitute a learning strategy. Pedagogical meaning emerges when AI is embedded in a defined instructional objective and learning activity.

Salim and Habibi (2025) provide direct empirical evidence through a mixed-methods quasi-experimental study involving 32 Islamic Religious Education undergraduates. Their ChatGPT-based learning model was associated with higher post-test performance in critical thinking and moral reasoning in the experimental group. This finding provides stronger evidence than studies that merely report perceptions or proposed applications. However, the small sample and specific higher-education context limit broader generalization.

Across the literature, the more informative unit of analysis is therefore the relationship between AI function and learning activity. Students may question AI, evaluate generated responses, compare information with Islamic sources, discuss alternatives, solve problems, revise learning products, and use feedback. This distinction allows the review to move from asking what AI can do toward examining how AI is pedagogically organized.

AI-Supported Learning Materials, Assessment, and Feedback

AI is increasingly associated with the production of instructional content, examples, exercises, questions, summaries, learning media, assessment tasks, and feedback. These functions connect different stages of the learning process: material preparation, student activity, assessment, feedback, and instructional follow-up. However, the evidence does not support treating automated assessment or feedback as independent substitutes for teacher judgement,

particularly where Islamic education involves interpretation, values, moral reasoning, and religious knowledge.

Transformation of Teacher and Student Roles

The findings indicate redistribution rather than replacement of pedagogical roles. Teachers increasingly act as instructional designers, facilitators, supervisors, evaluators, validators, and contextualizers of AI-generated information. Students increasingly engage in information seeking, inquiry, content development, independent learning, and evaluation of AI outputs. Thus, AI becomes an additional component within the teacher–student relationship rather than an autonomous pedagogical actor.

Human Mediation, Source Verification, and Pedagogical-Ethical Challenges

Accuracy, hallucination, unreliable sources, academic integrity, privacy, AI dependence, bias, insufficient AI literacy, and contextual appropriateness recur across the evidence. Source verification is particularly important in Islamic education because AI-generated religious information may require comparison with recognized Islamic and scholarly sources. Mat Yusoff et al. (2026) explicitly identifies source authenticity, teacher mediation, and religious and epistemic authority as conditions for responsible GenAI integration. Almajdoub et al. (2026) similarly report that AI can provide flexible support for Qur'anic education while requiring teacher verification of religious content.

Evidence Gaps

The evidence base remains heterogeneous and fragmented. A considerable proportion of the literature is descriptive, conceptual, exploratory, or literature-based, while fewer studies provide sustained classroom implementation, comparative designs, controlled interventions, or longitudinal evidence. The principal gap is therefore not merely the limited number of studies but the limited specification of how particular AI functions are translated into pedagogical strategies, observable learning activities, teacher mediation, student engagement, assessment, and measurable learning outcomes.

Overall Findings Synthesis

The overall synthesis identifies a process-oriented structure: AI function → pedagogical strategy → learning activity → teacher and student roles → learning and assessment processes, with human mediation, source verification, and ethical-contextual conditions operating across the sequence. This represents the principal novelty of the review. Rather than treating AI integration as technology adoption, the review maps how technological functions are operationalized within Islamic education pedagogy. Its contribution is therefore an evidence-based framework for connecting AI applications with learning strategies, observable activities, human roles, assessment, and the distinctive epistemic requirements of Islamic education. The framework also identifies a clear direction for future empirical research, namely testing specific

AI-supported pedagogical configurations rather than treating AI-supported Islamic education as a single uniform intervention.

Discussion

The findings indicate that the pedagogical significance of artificial intelligence in Islamic education lies less in the technology itself than in how its functions are embedded within instructional strategies, learning activities, assessment, and teacher–student interaction. This interpretation is consistent with broader evidence showing that generative AI can serve different pedagogical purposes depending on instructional design. Qian (2025) identified diverse pedagogical applications of generative AI in higher education, including support for creativity, critical thinking, learning autonomy, and prompt literacy, while Liu and Zhong (2025) emphasised that pedagogical scaffolding and alignment among technology, curriculum, pedagogy, and learner needs remain important conditions for meaningful integration. Thus, the same AI function, such as content generation or automated feedback, may support substantially different learning processes depending on whether it is used for direct instruction, independent inquiry, collaborative discussion, revision, or formative assessment.

From a theoretical perspective, the findings extend a technology-centred interpretation of AI integration by positioning learning strategy as the mediating pedagogical layer between technological function and observable learning activity. This perspective is compatible with TPACK but adds an important disciplinary dimension for Islamic education. In Islamic educational contexts, content knowledge cannot be separated entirely from questions of source authenticity, religious interpretation, and epistemic responsibility. Consequently, AI-supported pedagogy can be conceptualised as an interaction among technological affordances, pedagogical design, Islamic content knowledge, and contextual verification. The contribution is therefore not a new causal theory of AI effectiveness, but an evidence-mapping framework that clarifies how technological functions are translated into pedagogical practice.

The evidence concerning learning outcomes requires particular caution. One quasi-experimental mixed-methods study involving 32 Islamic Religious Education undergraduates reported higher post-test scores for critical thinking and moral reasoning in the ChatGPT-supported group (Salim & Habibi, 2025). This provides direct empirical evidence that a particular AI-supported instructional model can be associated with measured learning outcomes under a specified intervention. However, such evidence should not be generalised to AI-supported Islamic education as a whole because the study involved a small sample, a specific educational context, and a particular instructional model. This distinction is consistent with Liu and Zhong (2025), whose broader review identified potential learning benefits while also noting short intervention durations, small samples, and incomplete pedagogical scaffolding across the literature. The present synthesis therefore supports the existence of promising implementation evidence, but not a universal causal claim regarding AI effectiveness.

The relationship between teachers and students also appears to be transformed rather than replaced. Teachers increasingly assume responsibilities for designing AI-supported activities, monitoring use, contextualising content, verifying information, and redesigning assessment, while students are expected to question, evaluate, compare, and apply AI-generated information. Evidence from Qur'anic education reinforces this interpretation. Almajdoub et al. (2026), based on focus groups with 20 Islamic Education teachers and analysis of Tarteel and ChatGPT, found that AI could support recitation, memorisation, explanation, and self-paced

learning, but also identified concerns about accuracy, authenticity, dependence, and the preservation of the relational and spiritual dimensions of Qur'anic learning. The study consequently emphasises teacher verification rather than technological substitution.

Human mediation is particularly important because Islamic education involves knowledge for which source authenticity and recognised authority may be pedagogically significant. Mat Yusoff et al. (2026) similarly found that responsible GenAI integration in Islamic Religious Education requires teacher supervision, source verification, AI literacy, academic-integrity guidance, and alignment with Islamic educational values. These findings suggest that source verification should not be treated merely as an external ethical restriction. It can itself become a learning activity through which students compare AI outputs with authoritative sources, identify inaccuracies, justify corrections, and develop critical AI literacy.

The practical implication is that teachers should begin with learning objectives and pedagogical strategies before selecting an AI function. Students should be taught not only how to operate AI tools but also how to evaluate outputs, verify religious claims, disclose AI use, and maintain academic integrity. Technology developers should provide mechanisms that support transparency, traceability, and verification, while institutions should address privacy, responsible use, and teacher professional development. For researchers, the principal methodological implication is the need to specify the relationship among AI function, pedagogical strategy, learning activity, teacher mediation, student participation, assessment, duration, and outcome measures. Such specification would improve cross-study comparison and eventually enable stronger comparative or meta-analytic synthesis. Overall, the review supports a human-mediated model in which AI functions as a pedagogical resource within, rather than as a substitute for, the professional and epistemic responsibilities of Islamic educators.

Conclusion

This systematic literature review concludes that the pedagogical role of artificial intelligence in Islamic education is determined not by the adoption of AI technologies alone, but by how their functions are integrated into purposeful learning strategies, learning activities, assessment, feedback, and teacher–student interaction. The review answers the research questions by showing that AI is used to support learning-material development, personalised and interactive learning, independent learning, inquiry-oriented activities, assessment, feedback, and instructional assistance. However, the evidence remains heterogeneous across educational contexts, AI applications, pedagogical strategies, research designs, and outcome measures. Therefore, the reviewed literature supports the pedagogical potential and emerging implementation of AI, but does not justify a general causal claim that AI improves learning outcomes across Islamic education.

Scientifically, this review contributes a process-oriented framework linking AI function, pedagogical strategy, learning activity, teacher and student roles, and learning and assessment processes, while positioning human mediation, source verification, and ethical-contextual considerations as cross-cutting conditions. Practically, the findings indicate that teachers should integrate AI according to learning objectives and pedagogical needs, while students require critical evaluation and responsible AI-use practices. The review is limited by heterogeneous evidence, the predominance of descriptive, exploratory, and perception-based studies, and the relatively limited number of sustained classroom-based investigations. Future research should

therefore employ more clearly specified comparative, experimental, and longitudinal designs that examine particular AI-supported learning strategies, teacher mediation, student participation, assessment, and learning outcomes within diverse Islamic education contexts.

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Conflict of interests

The authors declare that they have no conflict of interest.

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