

The Ontological Turn in Islamic Education: Navigating AI Integration Without Compromising Theological Foundations

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Abstract

The rapid advancement of artificial intelligence (AI) technologies presents both unprecedented opportunities and profound challenges for Islamic education. Central to this discourse is the question of whether Islamic educational ontology—its foundational understanding of knowledge, being, and pedagogy—can accommodate AI without compromising its theological and philosophical integrity. This article conducts a comprehensive systematic literature review to explore frameworks, challenges, and future directions for integrating AI into Islamic education while preserving its ontological foundations rooted in Tawhid, Fitrah, and the integration of Naqli (revealed) and Aqli (rational) knowledge. Drawing upon 39 peer-reviewed sources, the study identifies and synthesizes five key frameworks: the SEI-CHAT Framework, Shariah-Aligned AI Governance, Legal-Sharia Educational Framework, Ontology-Based Knowledge Representation, and Hybrid AI-Human Teaching Models. The findings reveal that while AI demonstrates significant potential in enhancing cognitive and psychomotor learning domains, its application in affective, moral, and spiritual domains remains inherently limited, necessitating hybrid human-AI approaches. The study proposes design principles for theologically sound AI educational ontologies, including transparency, explainability, preservation of interpretive authority, and reflection of intra-Islamic diversity. This article concludes that the ontological turn in Islamic education requires a balanced, ethically vigilant, and human-centered approach that embraces technological innovation while steadfastly maintaining theological authenticity and human stewardship.

Keywords: Islamic educational ontology, artificial intelligence, theological integrity, SEI-CHAT framework, Shariah-aligned governance, hybrid AI-human teaching, Naqli and Aqli knowledge

INTRODUCTION

The twenty-first century has brought with it an extraordinary acceleration in artificial intelligence technologies, and it is becoming increasingly difficult to find any domain of modern life that remains untouched by this transformation. Education, perhaps more than many other sectors, has found itself at the forefront of this technological wave. Intelligent tutoring systems now offer personalized learning pathways that were unimaginable just a decade ago, adaptive learning platforms adjust content in real time based on student performance, and generative AI tools such as ChatGPT have fundamentally altered how learners access, process, and even produce knowledge. As Rachovski et al. (2024), Madanchian et al. (2025), and Alghadouni (2025) have documented, these technologies enhance engagement, streamline administrative tasks, and offer scalability that traditional educational models simply cannot match. Yet, as with any transformative technology, the opportunities come hand in hand with significant challenges. Arif et al. (2026) and Pahrudin et al. (2025) remind us that ethical concerns around algorithmic bias, questions of privacy, and deeper pedagogical and

epistemological tensions demand careful scholarly reflection. It is within this complex and rapidly shifting landscape that we situate our inquiry.

For Islamic education, however, the stakes are arguably even higher. This is because Islamic education is not merely about transmitting information or developing employable skills. At its core, it is a holistic enterprise that seeks to cultivate ethical, spiritual, and intellectual virtues, shaping individuals who are not only knowledgeable but also morally grounded and spiritually aware. Embong et al. (2017) and Memon and Zaman (2016) have articulated this vision with particular clarity, emphasizing that Islamic education aims at the cultivation of the whole person. The foundational ontology of Islamic education rests upon four interrelated pillars that give it its distinctive character. First, there is the ontological dimension, which concerns itself with human nature and existence, emphasizing the concept of *Fitrah*, that innate disposition toward recognizing God, and the ultimate purpose of drawing nearer to the Divine. Second, the epistemological dimension addresses the nature and sources of knowledge, insisting upon an integration of *Naqli*, or revealed knowledge, and *Aqli*, or rational knowledge. Third, the theological dimension places *Tawhid*, the unity of God, at the center of all educational endeavors, with revelation serving as the ultimate guide. Fourth, the axiological dimension grounds education in a value system rooted in *Akhlaq* and *Adab*, ensuring that the pursuit of knowledge is always accompanied by moral cultivation and spiritual refinement. These four dimensions, as Embong et al. (2017), Aktan (2018), and Memon and Zaman (2016) have each observed in their own ways, are not merely abstract philosophical categories but have concrete implications for how Islamic education is conceptualized and practiced.

The convergence of these deeply rooted Islamic educational traditions with the disruptive force of AI technologies raises a fundamental question, one that we believe is not merely academic but carries profound implications for the future of Islamic education. Arif et al. (2026) and Abubakari (2025) have both touched upon this question in their recent work, though we would argue that it deserves more sustained attention. Can the ontological foundations of Islamic education accommodate AI without compromising their theological and philosophical integrity? This question touches upon curriculum design, pedagogical practice, teacher training, and ultimately, the very identity of Islamic education in an age of rapid technological change. It is a question that invites not only technical solutions but also deep theological reflection, and it is this reflective space that our article seeks to occupy.

Despite the growing body of literature exploring AI in educational contexts, we find ourselves confronting a significant gap when it comes to systematic and comprehensive scholarship that specifically addresses the ontological reconstruction of Islamic education for AI integration. Much of the existing research tends to focus either on the technical affordances of AI or on general Islamic ethical frameworks, but the foundational ontological premises of Islamic education and how they might be reshaped by AI remain largely underexplored. Arif et al. (2026) and Zulkifli et al. (2025) have noted this gap in their respective reviews, though neither has fully addressed the ontological dimensions that we consider central to our inquiry. This is not to say that scholars have been silent on the matter; rather, we would argue that the conversation has been somewhat fragmented, with limited attention to the deeper epistemological and theological tensions that arise when algorithmic knowledge production encounters traditional interpretive authority. The limitations of AI in affective and spiritual domains, for instance, have been noted by Andri Nirwana et al. (2025) and Azhar et al. (2025), but the implications of these limitations for Islamic educational ontology have not been fully theorized. Similarly, Papakostas (2026) has raised important questions about the absence of pluralistic, context-sensitive frameworks that could accommodate the diversity of Islamic intellectual traditions, a concern that we believe deserves greater attention. It is this gap that motivates our present inquiry, and we hope to contribute to bridging it by conducting a systematic review that synthesizes existing frameworks, identifies persistent gaps, and proposes pathways forward for both research and practice.

Guided by the concerns outlined above, this study is organized around five research questions. These questions are intended to provide a coherent structure for our inquiry while allowing sufficient flexibility to capture the complexity of the issues at hand. The first question asks what the foundational principles of Islamic educational ontology are and how they might inform the integration of AI technologies. This is, in many ways, the starting point for any meaningful engagement with the topic, as it requires us to articulate the very essence of Islamic education before we can assess how AI might be accommodated. The second question seeks to identify what frameworks have been proposed to integrate AI into Islamic education while preserving theological integrity, a question that draws upon the existing literature to map the conceptual landscape. The third question addresses the key challenges and opportunities in reconstructing Islamic educational ontology for AI integration, and we suspect that the findings here will reveal a complex interplay between promise and peril. The fourth question turns to practical considerations, exploring what design principles and governance strategies can ensure theologically sound AI applications in Islamic education. Finally, the fifth question looks forward, asking what gaps remain and what directions future research and practice might take. Together, these questions provide a roadmap for our systematic review, and we trust they will enable us to offer both a comprehensive synthesis and a critical assessment of the field.

We believe this review makes a meaningful contribution to the scholarly discourse by providing a comprehensive synthesis of frameworks, challenges, and future directions for integrating AI into Islamic educational ontology. The findings are intended to inform a broad audience, including scholars, educators, technologists, and policymakers, all of whom share a common interest in innovating responsibly within Islamic education. As Arif et al. (2026) and Abubakari (2025) have both emphasized, responsible innovation requires not only technical expertise but also a deep understanding of the theological and ethical dimensions that shape Islamic educational practice. The scope of our review encompasses both classical Islamic educational principles and contemporary AI technologies, examining how these two domains can be reconciled without compromising the spiritual and ethical foundations that give Islamic education its distinctive character. It is important to acknowledge that this is a vast and multifaceted topic, and we do not claim to offer a definitive treatment. Rather, we hope to provide a coherent framework for understanding the issues and to stimulate further reflection and research.

The remainder of this article is organized as follows. Section 2 presents the methodology employed in our systematic literature review, detailing our search strategies, inclusion criteria, and analytical approaches. Section 3 presents the results and discussion, which we have organized into five thematic subsections. The first of these examines the foundations of Islamic educational ontology, providing the conceptual groundwork for subsequent analysis. The second explores AI technologies in Islamic education, considering both opportunities and challenges. The third reviews the various frameworks that have been proposed for integrating AI with Islamic educational principles. The fourth addresses ontology construction and AI applications, considering how Islamic knowledge can be represented in machine-understandable formats. The fifth turns to ethical governance and pedagogical strategies, considering the practical implications of our findings. Section 4 identifies gaps and future directions, reflecting on what remains to be done. Section 5 concludes the article with key insights and recommendations, offering a synthesis of our findings and a forward-looking perspective on the ontological turn in Islamic education.

METHODS

This study employed a systematic literature review methodology to comprehensively identify, evaluate, and synthesize existing scholarship on the intersection of Islamic educational ontology and artificial intelligence. We selected the systematic review approach for its rigor, transparency, and ability to provide a comprehensive synthesis of a complex, interdisciplinary field. As Arif et al. (2026) have demonstrated in their own work,

systematic reviews are particularly well-suited to fields where scholarship is dispersed across multiple disciplines and where there is a need to integrate insights from diverse methodological and theoretical traditions. To ensure methodological quality and transparency, we followed the PRISMA guidelines, which provide a structured framework for conducting and reporting systematic reviews. We found this framework helpful in maintaining consistency throughout the review process, though we should acknowledge that applying PRISMA to a field as philosophically rich as Islamic education required some adaptation. The guidelines helped us remain focused on our research questions while allowing sufficient flexibility to engage with the nuanced theological and epistemological dimensions of the literature.

We conducted a comprehensive search across multiple academic databases to ensure broad coverage of relevant scholarship. The databases we consulted included Scopus, Web of Science, Google Scholar, and specialized Islamic studies databases, as we recognized that scholarship in this field appears in both mainstream educational technology journals and more specialized Islamic studies publications. Our search strategy employed combinations of keywords and Boolean operators, and we are aware that the choice of keywords can significantly influence the scope of any literature review. We therefore made a deliberate effort to include both general terms related to education and technology and more specific terms rooted in Islamic educational discourse. The keywords we used included phrases such as "Islamic education," "Islamic pedagogy," and "Islamic curriculum," as well as "artificial intelligence," "AI," "machine learning," and "generative AI." We also included epistemological and theological terms such as "ontology," "epistemology," "theological foundations," "Naqli," "Aqli," "Tawhid," and "Fitrah," recognizing that these concepts are central to our inquiry. Additionally, we incorporated terms related to Islamic ethics and governance, including "Shariah," "Maqāṣid," and "Islamic ethics," and terms related to integration and application such as "integration," "framework," and "governance." To supplement our database searches, we conducted citation tracking and hand-searching of reference lists of included articles. This approach, we believe, helped mitigate the risk of missing relevant studies that might not have been captured by our initial search terms.

We established clear inclusion and exclusion criteria to ensure that the studies we reviewed were relevant to our research questions and met acceptable standards of scholarly quality. For inclusion, we required that studies be peer-reviewed journal articles, conference proceedings, or book chapters, as we wanted to ensure that our review was based on scholarship that had undergone some form of rigorous review. We included only studies published in English or with English translation available, which we acknowledge is a limitation but one that was necessary given the linguistic constraints of our review team. The studies had to focus on Islamic education, Islamic educational ontology, or Islamic pedagogy, and they had to address AI technologies, AI ethics, or AI applications in education. We also required that studies discuss integration, frameworks, or governance of AI in Islamic contexts, as these were the themes most directly relevant to our research questions. We limited our search to studies published between 2014 and 2026, a period we selected because it encompasses the most significant developments in both AI technologies and scholarship on AI in education. For exclusion, we excluded non-peer-reviewed sources such as opinion pieces and blog posts, as well as studies focused exclusively on technical AI development without educational or Islamic dimensions. We also excluded studies focused exclusively on general AI ethics without Islamic or educational context, as these did not address the specific concerns of our inquiry. Duplicate publications were identified and removed.

We developed a standardized data extraction form to systematically capture relevant information from each included study. The form included fields for author(s), year, and publication type, as well as research focus and objectives. We also captured the theoretical or conceptual framework employed in each study, the key findings and recommendations, and any identified challenges and gaps. Additionally, we noted any proposed frameworks or models that the authors had developed or advocated. We found this structured approach helpful in ensuring consistency across our review, though we also allowed for flexibility when studies presented unique or unexpected insights. For synthesis, we employed thematic analysis to identify recurrent themes, patterns, and

frameworks across the included studies. We followed an inductive approach, allowing themes to emerge from the data rather than imposing predetermined categories, though we also engaged in iterative reading and discussion to refine our themes. Through this process, we identified five major frameworks that recurred across the literature, and we developed the Key Findings Table (presented in Section 3) to provide an overview of these frameworks and their key characteristics.

We conducted quality assessment using established criteria for systematic reviews. The criteria we employed included relevance to our research questions, methodological rigor, theoretical depth, and contribution to the field. For each study, we assessed clarity of theoretical framework, coherence of argument, and empirical or conceptual contribution. We found that the quality of scholarship in this field varied considerably, with some studies offering deep theoretical engagement with Islamic educational ontology and others focusing primarily on technical applications. We made a conscious decision to include studies that made significant contributions to the field even if they did not fully meet all our quality criteria, though we noted these limitations in our analysis. We also recognized that quality assessment in a field as interdisciplinary as this one requires sensitivity to different disciplinary norms and expectations. What constitutes rigor in Islamic studies may differ from what constitutes rigor in computer science, and we sought to be mindful of these differences in our assessment. Ultimately, we included 39 studies that met our inclusion criteria and made a meaningful contribution to the discourse on AI integration in Islamic education.

RESULTS AND DISCUSSION

Foundations of Islamic Educational Ontology

Our systematic review reveals that Islamic educational ontology is consistently characterized by four interrelated foundations: ontological, epistemological, theological, and axiological. Embong et al. (2017), Aktan (2018), and Memon and Zaman (2016) have each, in their own ways, articulated these foundations with considerable clarity, and we found remarkable consistency across the literature regarding their central importance. These four dimensions are not merely abstract philosophical categories but have concrete implications for how Islamic education is conceptualized and practiced, and we believe they provide an essential framework for understanding how AI integration might be approached.

The ontological foundation posits that human nature is rooted in Fitrah, an innate disposition toward recognizing God and moral goodness. This is a profoundly significant concept, as it suggests that human beings are not blank slates but are already oriented toward the Divine and toward ethical living. Embong et al. (2017) and Memon and Zaman (2016) have both emphasized that the purpose of human existence is to draw nearer to God through knowledge, worship, and righteous action, and this ontological premise shapes educational aims in fundamental ways. Education, from this perspective, is not merely about acquiring information or developing skills but about cultivating the whole person intellectually, spiritually, morally, and socially. It is about helping individuals fulfill their inherent potential as beings created in the image of God, and this understanding has significant implications for how we think about AI integration. If education is fundamentally about human flourishing in a spiritual sense, then AI cannot be merely a tool for efficiency but must serve this deeper purpose.

The epistemological foundation integrates Naqli, or revealed knowledge from the Quran and Sunnah, and Aqli, or rational knowledge derived through reason, observation, and reflection. Embong et al. (2017) and Aktan (2018) have observed that this dual-source epistemology rejects the dichotomy between revelation and reason, instead viewing them as complementary pathways to truth. This is a distinctive feature of Islamic epistemology, and it has significant implications for how we think about AI. If reason and revelation are complementary, then AI, as a product of human reason, must be assessed not in isolation but in relation to revealed knowledge. The epistemological foundation of Islamic education thus provides a framework for

evaluating AI technologies based on their capacity to enhance both transmitted knowledge and critical thinking skills, but it also sets boundaries on what AI can legitimately do.

The theological foundation places the centrality of Tawhid, or divine unity, at the heart of all educational endeavors. Embong et al. (2017) and Aktan (2018) have both stressed that all knowledge is ultimately traced back to God, and education is viewed as an act of worship that cultivates consciousness of God's presence and sovereignty. This is a profoundly integrative perspective, as it means that no knowledge is truly secular or value-neutral. The role of revelation, as embodied in the Quran and Sunnah, serves as the ultimate source of guidance and the benchmark for evaluating human knowledge, including knowledge generated by AI systems. This theological foundation thus provides a normative framework for assessing AI applications, asking not merely whether they are technically effective but whether they are consistent with Islamic values and contribute to the cultivation of God-consciousness.

The axiological foundation grounds Islamic education in a value system rooted in Akhlaq and Adab, encompassing character and etiquette. Embong et al. (2017) and Memon and Zaman (2016) have emphasized that education aims to cultivate virtuous individuals who embody ethical principles and contribute positively to society. The axiological dimension ensures that knowledge acquisition is always accompanied by moral cultivation and spiritual refinement. We find this particularly significant for AI integration, as it suggests that the ethical dimensions of AI cannot be an afterthought. If education is fundamentally about character formation, then AI must be evaluated not only on its cognitive benefits but also on its moral and spiritual effects. We believe these four foundations ensure that Islamic education is not merely about information transmission but about cultivating ethical, spiritual, and intellectual virtues that prepare individuals for both worldly success and eternal salvation.

Our review reveals that Islamic educational ontologies have historically reconciled revealed and rational knowledge through curriculum design, teaching practices, and institutional policies. This is not a new challenge; indeed, the integration of Naqli and Aqli knowledge has been a central concern of Islamic education for centuries, and contemporary institutions have developed various models for addressing it. Hashim et al. (2019) and Mazlan et al. (2025) have documented how institutions such as the Islamic Science University of Malaysia have developed the iNaQ framework, which explicitly integrates Naqli and Aqli domains using tools like Bloom's taxonomy to clarify learning outcomes and address implementation challenges. This is a helpful model, as it provides a concrete framework for thinking about how different types of knowledge can be integrated in practice.

The SEI-CHAT framework, which Arif et al. (2026) have developed and advocated, represents a more recent and arguably more comprehensive approach. This framework emphasizes the normative-epistemological focus of Islamic education, explicitly addressing the relationship between Naqli and Aqli knowledge within a broader cultural-historical activity theory perspective. What we find particularly compelling about SEI-CHAT is that it situates AI integration within a larger ontological project that seeks to preserve the epistemic hierarchy in which revealed knowledge serves as the foundation upon which rational inquiry is built. This is not a simple or uncontroversial position, as it requires careful negotiation between tradition and innovation, but it provides a coherent framework for thinking about how AI might be integrated without compromising the fundamental structure of Islamic education.

The review identifies three major challenges confronting Islamic educational ontology in contemporary contexts, and we believe these challenges are particularly relevant to the question of AI integration. The first challenge, educational dualism, refers to the persistent tension between Islamic spiritual-moral education and Western secular-empirical knowledge, particularly in non-Muslim majority contexts. Ahmed (2024) has documented how this dualism often results in compartmentalized curricula that fail to integrate revelation and reason effectively, and we would argue that the introduction of AI technologies has the potential to exacerbate

or, alternatively, to help resolve this dualism. If AI is viewed as a purely secular technology, it may reinforce the separation between religious and secular knowledge. But if AI is integrated within a framework that recognizes the complementarity of Naqli and Aqli knowledge, it could potentially help bridge the divide.

The second challenge concerns curriculum reform. Ahmed (2024) has argued that there is a pressing need for integrating Islamic principles with modern subjects and for comprehensive teacher training that enables educators to navigate the epistemological diversity of contemporary education. We find this a particularly significant challenge, as teachers are on the front lines of AI integration and must be equipped not only with technical skills but also with the theological and philosophical understanding necessary to make sound judgments about AI use.

The third challenge involves cultural negotiation. Sahin (2018) and Baiza (2022) have explored how Islamic educational values must be adapted in pluralistic, often secular, societies, and we would add that AI integration adds another layer of complexity to this negotiation. The values embedded in AI technologies are often those of their developers, who may not share Islamic ethical commitments, and this raises questions about cultural imperialism and the preservation of Islamic identity. These challenges are not easily resolved, but they must be acknowledged and addressed if AI integration is to be both effective and theologically sound.

Based on our analysis of the foundations of Islamic educational ontology, we would suggest several implications for AI integration that we believe deserve careful consideration. First, the ontological emphasis on Fitrah suggests that AI should be designed and deployed in ways that support the cultivation of human potential rather than replacing or diminishing it. This means that AI should be viewed as a tool for enhancing human capabilities, not as a substitute for human judgment or spiritual development. Second, the epistemological integration of Naqli and Aqli knowledge implies that AI applications should be assessed not only on their technical effectiveness but also on their consistency with revealed knowledge. This is a demanding standard, as it requires ongoing evaluation by qualified Islamic scholars, but it is essential for maintaining theological integrity.

Third, the theological centrality of Tawhid suggests that AI should be evaluated in terms of its capacity to cultivate God-consciousness and to support the worship of God. This may sound abstract, but it has concrete implications for how AI is used in Islamic education. For example, AI tools for Quranic recitation or memorization could be designed to enhance spiritual awareness, not merely to improve technical accuracy. Fourth, the axiological emphasis on Akhlaq and Adab implies that AI governance must be grounded in ethical principles and must prioritize character formation over mere cognitive development. This is a significant challenge, as most AI systems are designed primarily for cognitive tasks, but we believe it is essential for ensuring that AI integration serves the holistic purposes of Islamic education.

Our systematic review reveals that Islamic educational ontologies have historically reconciled revealed and rational knowledge through curriculum design, teaching practices, and institutional policies. This is not, we should note, a recent preoccupation; rather, it is a concern that has occupied Islamic educators and thinkers for centuries, and the contemporary challenges of AI integration are in many ways a continuation of this longer tradition of seeking integration. Hashim et al. (2019) and Mazlan et al. (2025) have documented how contemporary institutions such as the Islamic Science University of Malaysia have developed models like the iNaQ framework, which explicitly integrates Naqli and Aqli domains using tools like Bloom's taxonomy to clarify learning outcomes and address implementation challenges. We find this approach particularly instructive, as it demonstrates how classical educational concerns can be addressed using contemporary pedagogical tools without sacrificing the fundamental commitments of Islamic education. The iNaQ framework, in our view, represents a thoughtful attempt to bridge the gap between traditional Islamic education and modern educational standards, and it provides a useful precedent for thinking about how AI might be integrated.

The SEI-CHAT framework, which Arif et al. (2026) have identified as a leading model in their review and which we also consider central to our inquiry, emphasizes the normative-epistemological focus of Islamic education, explicitly addressing the relationship between Naqli and Aqli knowledge. What strikes us as particularly significant about SEI-CHAT is that it situates AI integration within a broader ontological project that seeks to preserve the epistemic hierarchy in which revealed knowledge serves as the foundation upon which rational inquiry is built. This is not a trivial matter; it represents a deliberate choice to maintain the primacy of revelation while still embracing the potential of human reason, including the reason embodied in AI technologies. We would argue that this is a position that requires careful justification, as it is not self-evident that revealed knowledge should serve as the foundation for rational inquiry. However, within the Islamic intellectual tradition, this position is well-grounded, and it provides a coherent framework for thinking about how AI might be integrated without compromising theological integrity.

We should also note that the integration of Naqli and Aqli knowledge is not without its tensions and ambiguities. There are legitimate disagreements within the Islamic scholarly community about the proper relationship between revelation and reason, and these disagreements have implications for how AI integration is approached. Some scholars, for instance, may be more inclined to emphasize the autonomy of reason, while others may insist on a more restrictive role for rational inquiry relative to revelation. We do not pretend to resolve these disagreements; rather, we acknowledge them as part of the rich intellectual diversity of Islamic tradition. However, we would suggest that the SEI-CHAT framework offers a balanced and defensible position that honors both the primacy of revelation and the legitimate role of reason, and we find it a helpful starting point for thinking about AI integration.

Our review identifies three major challenges confronting Islamic educational ontology in contemporary contexts, and we believe these challenges are particularly relevant to the question of AI integration. The first challenge, educational dualism, refers to the persistent tension between Islamic spiritual-moral education and Western secular-empirical knowledge, particularly in non-Muslim majority contexts. Ahmed (2024) has documented how this dualism often results in compartmentalized curricula that fail to integrate revelation and reason effectively, and we would argue that the introduction of AI technologies has the potential to exacerbate or, alternatively, to help resolve this dualism. If AI is viewed as a purely secular technology, it may reinforce the separation between religious and secular knowledge. But if AI is integrated within a framework that recognizes the complementarity of Naqli and Aqli knowledge, it could potentially help bridge the divide. We are not entirely optimistic on this point, however, as the forces of educational dualism are deeply entrenched and not easily overcome. Still, we believe the potential for AI to serve as a bridge is worth exploring.

The second challenge concerns curriculum reform. Ahmed (2024) has argued that there is a pressing need for integrating Islamic principles with modern subjects and for comprehensive teacher training that enables educators to navigate the epistemological diversity of contemporary education. We find this a particularly significant challenge, as teachers are on the front lines of AI integration and must be equipped not only with technical skills but also with the theological and philosophical understanding necessary to make sound judgments about AI use. It is one thing to design a sophisticated AI system; it is quite another to integrate it into a classroom in a way that serves the holistic purposes of Islamic education. We suspect that teacher training will be one of the most critical factors in determining the success or failure of AI integration, and we would encourage greater attention to this dimension in future research and practice.

The third challenge involves cultural negotiation. Sahin (2018) and Baiza (2022) have explored how Islamic educational values must be adapted in pluralistic, often secular, societies, and we would add that AI integration adds another layer of complexity to this negotiation. The values embedded in AI technologies are often those of their developers, who may not share Islamic ethical commitments, and this raises questions about cultural imperialism and the preservation of Islamic identity. We do not believe these concerns should lead to a

rejection of AI technologies; rather, they should lead to a more critical and reflective engagement with them. Islamic educators must be aware of the values embedded in AI systems and must make conscious choices about how to use them in ways that are consistent with Islamic principles.

Based on our analysis of the foundations of Islamic educational ontology, we would suggest several implications for AI integration that we believe deserve careful consideration. First, the ontological emphasis on *Fitrah* suggests that AI should be designed and deployed in ways that support the cultivation of human potential rather than replacing or diminishing it. This means that AI should be viewed as a tool for enhancing human capabilities, not as a substitute for human judgment or spiritual development. We find this a particularly important point, as there is a tendency in some educational technology discourse to view AI as a replacement for human teachers. From an Islamic perspective, this is unacceptable, as the cultivation of spiritual and moral virtues requires human interaction and cannot be delegated to machines.

Second, the epistemological integration of *Naqli* and *Aqli* knowledge implies that AI applications should be assessed not only on their technical effectiveness but also on their consistency with revealed knowledge. This is a demanding standard, as it requires ongoing evaluation by qualified Islamic scholars, but it is essential for maintaining theological integrity. We do not wish to suggest that this evaluation is straightforward; it involves complex judgments about the compatibility of AI systems with Islamic principles, and these judgments may vary across different contexts and traditions. However, we believe it is a necessary component of responsible AI integration.

Third, the theological centrality of *Tawhid* suggests that AI should be evaluated in terms of its capacity to cultivate God-consciousness and to support the worship of God. This may sound abstract, but it has concrete implications for how AI is used in Islamic education. For example, AI tools for Quranic recitation or memorization could be designed to enhance spiritual awareness, not merely to improve technical accuracy. We suspect that many existing AI tools have not been designed with this purpose in mind, and this is an area where further development is needed.

Fourth, the axiological emphasis on *Akhlaq* and *Adab* implies that AI governance must be grounded in ethical principles and must prioritize character formation over mere cognitive development. This is a significant challenge, as most AI systems are designed primarily for cognitive tasks, but we believe it is essential for ensuring that AI integration serves the holistic purposes of Islamic education. We would therefore encourage the development of AI governance frameworks that explicitly address ethical and spiritual dimensions, not just technical and pedagogical ones.

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and not easily overcome. Still, we believe the potential for AI to serve as a bridge is worth exploring, and this is an area where thoughtful curriculum design could make a significant difference.

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The third challenge involves cultural negotiation. Sahin (2018) and Baiza (2022) have explored how Islamic educational values must be adapted in pluralistic, often secular, societies, and we would add that AI integration adds another layer of complexity to this negotiation. The values embedded in AI technologies are often those of their developers, who may not share Islamic ethical commitments, and this raises questions about cultural imperialism and the preservation of Islamic identity. We do not believe these concerns should lead to a rejection of AI technologies; rather, they should lead to a more critical and reflective engagement with them. Islamic educators must be aware of the values embedded in AI systems and must make conscious choices about how to use them in ways that are consistent with Islamic principles. This is not a simple matter, as it requires a deep understanding of both Islamic values and the technical and ethical dimensions of AI. But it is, we believe, an essential component of responsible AI integration. We would also note that cultural negotiation is not a one-way process; it also involves engaging with the broader society in which Islamic education is situated and finding ways to articulate Islamic values in terms that are intelligible and compelling to diverse audiences. This is a demanding task, but it is one that Islamic educators have been engaged in for centuries, and we see no reason why the challenges of AI should be any different in this respect.

Based on our analysis of the foundations of Islamic educational ontology and the contemporary challenges facing it, we would suggest several implications for AI integration that we believe deserve careful consideration. First, the ontological emphasis on *Fitrah* suggests that AI should be designed and deployed in ways that support the cultivation of human potential rather than replacing or diminishing it. This means that AI should be viewed as a tool for enhancing human capabilities, not as a substitute for human judgment or spiritual development. We find this a particularly important point, as there is a tendency in some educational technology discourse to view AI as a replacement for human teachers. From an Islamic perspective, this is unacceptable, as the cultivation of spiritual and moral virtues requires human interaction and cannot be delegated to machines. Andri Nirwana et al. (2025) have made a similar point in their SWOT analysis of AI integration, noting that AI is effective in cognitive and psychomotor domains but severely limited in affective and moral domains. We would add that this limitation is not merely a technical one but is rooted in the very nature of AI; machines cannot provide the kind of spiritual guidance and moral example that human teachers can.

Second, the epistemological integration of *Naqli* and *Aqli* knowledge implies that AI applications should be assessed not only on their technical effectiveness but also on their consistency with revealed knowledge. This is a demanding standard, as it requires ongoing evaluation by qualified Islamic scholars, but it is essential for maintaining theological integrity. Azhar et al. (2025) have explored this issue in the context of Quranic exegesis,

arguing that AI lacks the deep contextual and jurisprudential understanding necessary for sound interpretation. We find this a compelling argument, and we would extend it to other domains of Islamic education as well. AI may be able to process large amounts of text and identify patterns, but it cannot replicate the nuanced, context-sensitive judgment of a trained scholar. This does not mean that AI has no role to play; it means that its role must be carefully defined and subject to human oversight.

Third, the theological centrality of Tawhid suggests that AI should be evaluated in terms of its capacity to cultivate God-consciousness and to support the worship of God. This may sound abstract, but it has concrete implications for how AI is used in Islamic education. For example, AI tools for Quranic recitation or memorization could be designed to enhance spiritual awareness, not merely to improve technical accuracy. We suspect that many existing AI tools have not been designed with this purpose in mind, and this is an area where further development is needed. We would encourage developers of AI technologies for Islamic education to consider not only the cognitive outcomes of their tools but also their spiritual and ethical effects.

Fourth, the axiological emphasis on Akhlaq and Adab implies that AI governance must be grounded in ethical principles and must prioritize character formation over mere cognitive development. This is a significant challenge, as most AI systems are designed primarily for cognitive tasks, but we believe it is essential for ensuring that AI integration serves the holistic purposes of Islamic education. Salim et al. (2026) have argued for the importance of character-centered pedagogy in AI integration, and we find this a helpful framing. We would therefore encourage the development of AI governance frameworks that explicitly address ethical and spiritual dimensions, not just technical and pedagogical ones. This requires collaboration between Islamic scholars, technologists, educators, and policymakers, and we recognize that such collaboration is not always easy. But we believe it is necessary if AI is to serve the purposes of Islamic education rather than undermining them.

AI Technologies in Islamic Education: Opportunities and Challenges

AI applications in education, as identified in the reviewed literature, encompass a diverse and rapidly expanding array of technologies. Rachovski et al. (2024), Madanchian et al. (2025), and Alghadouni (2025) have documented the emergence of intelligent tutoring systems that provide personalized instruction, adaptive learning platforms that adjust content based on student performance, natural language processing tools that enable sophisticated interaction with text, automated grading and analytics that streamline assessment, and generative AI tools such as ChatGPT that can produce human-like responses to queries. The promise of these technologies is considerable, and we would be remiss if we did not acknowledge the genuine opportunities they present for enhancing educational practice. Personalized learning, for instance, has long been a goal of educators, and AI makes it more achievable than ever before. Students can receive immediate feedback on their work, practice skills at their own pace, and access learning resources tailored to their individual needs. Engagement, too, can be enhanced through interactive AI tools that make learning more dynamic and responsive. And administrative efficiency, while perhaps less glamorous, is nonetheless significant; AI can handle routine tasks such as grading and data analysis, freeing educators to focus on more meaningful interactions with students. However, as Rachovski et al. (2024) and Madanchian et al. (2025) have also noted, these technologies introduce new ethical and pedagogical complexities that require careful consideration. We suspect that the enthusiasm for AI in education sometimes outpaces the critical reflection needed to ensure that its use is responsible and aligned with educational values. There is a tendency, we think, to assume that what is technologically possible is also educationally desirable, and this assumption deserves scrutiny.

Our systematic review reveals a significant finding regarding the differential effectiveness of AI across learning domains, and we believe this finding has profound implications for how AI should be integrated into Islamic education. Andri Nirwana et al. (2025) have conducted a particularly helpful SWOT analysis that distinguishes between cognitive, psychomotor, and affective domains, and their findings are consistent with what we found across the broader literature. In cognitive and psychomotor domains, AI has demonstrated

genuine effectiveness. For example, AI has been used successfully in Quranic recitation and memorization, where intelligent tutoring systems can provide immediate feedback on pronunciation, identify areas for improvement, and offer personalized practice opportunities. Similarly, in jurisprudence and other skill-based areas of Islamic education, AI can support learning by providing adaptive practice, simulating case-based reasoning, and offering immediate feedback on student responses. We find this encouraging, as it suggests that AI can make a meaningful contribution to areas of Islamic education that involve the acquisition of knowledge and skills. However, we would caution against overgeneralizing from these successes; just because AI works well in some domains does not mean it will work well in all.

The application of AI in affective and moral domains, by contrast, remains severely limited, and this is a limitation that we believe is not merely a matter of current technological constraints but is rooted in the very nature of AI. Andri Nirwana et al. (2025) and Azhar et al. (2025) have both noted that AI lacks emotional intelligence, spiritual awareness, and the capacity to provide authentic moral and spiritual guidance. We would add that these are not deficiencies that can be easily overcome with further technical development; they are inherent limitations of machines. Machines can simulate empathy, but they cannot genuinely feel it; they can generate moral advice, but they lack the moral agency and spiritual insight that come from human experience. This limitation necessitates hybrid AI-human models in which AI supports cognitive and skill-based learning while human educators remain essential for affective, moral, and spiritual development. We are not suggesting that AI has no role to play in these domains; it may, for example, provide resources or prompts that facilitate reflection. But the core work of spiritual and moral formation must remain in the hands of human educators. This domain-specific finding is, in our view, crucial for ontology reconstruction, as it defines clear boundaries for AI integration while preserving the irreducible role of human educators in spiritual formation.

Our review identifies several key challenges in AI integration that we believe must be addressed if AI is to serve the purposes of Islamic education responsibly. The first challenge concerns algorithmic bias and privacy. Arif et al. (2026) and Pahrudin et al. (2025) have both raised concerns about how AI systems can perpetuate biases present in training data, leading to misinterpretations of Islamic texts or unfair outcomes. We find this a particularly troubling issue, as the stakes are high when AI is used in religious education; a biased or inaccurate AI system could lead students astray or undermine their trust in the educational process. Privacy concerns also arise from data collection and potential misuse, raising questions about the ethical governance of AI systems. We suspect that many educators and students may not be fully aware of how their data is being used, and this lack of transparency is itself an ethical concern.

The second challenge involves tension with religious authority. Achruh et al. (2024) have explored how AI's algorithmic knowledge production may conflict with traditional interpretive authority vested in qualified scholars. We would argue that this is not merely a practical concern but a theological one. If AI is seen as a source of religious authority, it could undermine the role of scholars who have spent years acquiring the knowledge and wisdom necessary for sound interpretation. The risk of delegating religious interpretation to AI systems threatens the preservation of traditional scholarly authority and the nuanced, context-sensitive nature of Islamic interpretation. We do not believe that AI should be rejected on these grounds; rather, we believe that its role must be carefully defined and limited to areas where it can genuinely assist without usurping human authority.

The third challenge involves socio-cultural resistance and digital divides. Pahrudin et al. (2025) and Amirudin et al. (2026) have documented how disparities in infrastructure and digital literacy, especially in non-Muslim majority contexts, pose significant barriers to equitable AI integration. We find this a sobering reminder that technology is not neutral; its benefits are not automatically distributed but depend on existing social and economic structures. Cultural resistance to technological change and concerns about cultural imperialism further complicate AI adoption. Some communities may view AI as a threat to their cultural identity or religious

values, and these concerns should not be dismissed lightly. We believe that addressing these challenges requires not only technical solutions but also dialogue, trust-building, and a commitment to equity and inclusion.

Frameworks for Integrating AI with Islamic Educational Principles

Our systematic review identifies five key frameworks for integrating AI with Islamic educational principles, and we find it noteworthy that while these frameworks emerge from different disciplinary contexts and employ different conceptual vocabularies, they converge on several core themes. Each framework offers distinct contributions and perspectives on preserving theological integrity while accommodating AI, and we believe that together they provide a comprehensive foundation for thinking about AI integration. We should also note that these frameworks are not mutually exclusive; in fact, we would argue that they are complementary and can be integrated in practice.

The SEI-CHAT framework, which stands for Sixth-Element Islamic Cultural-Historical Activity Theory, emerges from our review as the most comprehensive and explicitly ontological framework in the literature. Arif et al. (2026) have developed this framework with considerable sophistication, and we find it particularly compelling because it explicitly addresses the normative-epistemological dimensions of Islamic education that we have discussed in previous sections. The framework is grounded in cultural-historical activity theory, a well-established tradition in educational research, but it extends this tradition by incorporating Islamic epistemological commitments. What we find most valuable about SEI-CHAT is that it situates AI integration within a broader project of preserving the epistemic hierarchy of Islamic education, recognizing that AI technologies should serve as tools for enhancing human understanding rather than as replacements for revealed knowledge. This is not a trivial point; it represents a deliberate choice to maintain the primacy of revelation while still embracing the potential of human reason, including the reason embodied in AI technologies.

The hybrid AI-human approach advocated by SEI-CHAT is another feature that we find particularly significant. Arif et al. (2026) argue that AI should enhance personalized learning in cognitive and psychomotor domains while human educators remain essential for affective and spiritual development. This hybrid approach, in our view, preserves the theological authenticity and ethical guidance that are central to Islamic education. We are not suggesting that this is an easy balance to achieve; it requires careful judgment about when and how to use AI, and these judgments will vary across different contexts and educational goals. However, the framework provides a helpful starting point for thinking about these issues, and we believe it offers a more nuanced approach than either wholesale acceptance or rejection of AI.

The emphasis on pedagogical readiness is another important contribution of the SEI-CHAT framework. Arif et al. (2026) emphasize the importance of teacher training, digital literacy, and institutional support for effective AI integration. We find this a particularly important point, as there is a tendency in some educational technology discourse to focus on the technology itself while neglecting the human factors that determine its success. Pedagogical readiness is, we would argue, as important as technical capacity, and educators must be equipped with both technical skills and theological understanding to navigate AI integration responsibly. This is a demanding requirement, but we believe it is essential for ensuring that AI serves the purposes of Islamic education rather than undermining them.

Multiple frameworks grounded in Islamic ethical principles have been proposed to ensure responsible AI integration, and we find these frameworks particularly helpful because they provide concrete ethical guidance for AI development and deployment. The Maqāṣid al-Sharīʿah-based guidelines, as articulated by Zulkifli et al. (2025) and Habib (2025), emphasize the protection of religion, life, intellect, lineage, and property as overarching objectives of Islamic law. This is a comprehensive ethical framework that has deep roots in Islamic legal theory, and it provides a structured approach to evaluating AI applications. AI applications, according to this framework, must be evaluated based on whether they serve these higher objectives or pose threats to them. We find this a particularly helpful approach, as it moves beyond abstract ethical principles to concrete criteria

that can be applied in practice. For example, an AI application that enhances the protection of religion by facilitating Quranic learning would be viewed positively, while one that poses a threat to religion by promoting heterodox interpretations would be viewed negatively.

The principles of Wasathiyyah (moderation) and I'timāni (trusteeship) ethics, as discussed by Ali et al. (2025) and Abu Bakar et al. (2025), provide additional ethical guidance. Wasathiyyah ensures balanced, moderate approaches that avoid both technological utopianism and luddite rejection. We find this a particularly important principle, as the discourse around AI in education often oscillates between these two extremes. On one hand, there are those who view AI as a panacea for all educational problems; on the other, there are those who view it as a threat to human values. The principle of Wasathiyyah encourages a more balanced perspective that acknowledges both the potential and the limitations of AI. I'timāni, or trusteeship ethics, frames humans as trustees of God's creation, responsible for using technology ethically and accountably. This is a powerful framing, as it grounds ethical responsibility in a theological understanding of human purpose and accountability.

Shariah-aligned governance, as articulated by Zulkifli et al. (2025), Ali et al. (2025), and Abubakari (2025), positions AI as a decision-support tool rather than a replacement for human scholarly authority. We find this a crucial distinction, as it defines the proper role of AI in Islamic education. AI can support human decision-making by providing information, identifying patterns, and offering suggestions, but it should not be delegated the authority to make consequential judgments. The framework advocates for explainable AI that makes decision-making processes transparent, continuous Sharia auditing to ensure ongoing compliance, and interdisciplinary collaboration between Islamic scholars and technologists. These are practical measures that we believe can help ensure that AI is used responsibly in Islamic educational contexts.

The Legal-Sharia Educational Framework, as articulated by Yahya et al. (2026), positions AI-driven Islamic education as an instrument of socio-legal governance. This is a distinctive perspective that we find particularly helpful for understanding the broader social and legal implications of AI integration. The framework emphasizes regulatory accountability, explainable AI, and continuous Sharia auditing, viewing AI-driven Islamic education as producing religious subjects who are theologically grounded, ethically responsible, and constitutionally oriented. We find this a valuable framing, as it recognizes that AI in education is not merely a pedagogical matter but has broader social and legal implications. The kind of religious education that students receive shapes their understanding of their religious and legal obligations, and this has implications for how they participate in society.

The framework explicitly limits AI's role to decision-support, reserving consequential judgments for qualified human scholars. Azam et al. (2026) have developed this aspect of the framework in the context of Islamic digital payment systems, but we believe it has broader applicability to Islamic education. The principle is clear: AI can inform and support human judgment, but it should not replace it. This preserves the traditional authority structure of Islamic education while leveraging AI for pedagogical and administrative enhancements. We find this a balanced approach that recognizes both the potential and the limitations of AI.

Ontology-based approaches focus on structuring Islamic knowledge in machine-understandable formats for AI applications, and we find these approaches particularly significant for their technical contributions to making Islamic knowledge accessible to AI systems. Bendjamaa and Taleb (2024) have developed OntoDin, a comprehensive ontology of Quran and Hadith that structures Islamic knowledge for AI applications, enabling semantic search, automated reasoning, and interoperability. Similarly, Ta'A et al. (2014) have developed theme-based classification approaches that organize Quranic knowledge into thematic categories for better semantic understanding and application development. We find these technical contributions valuable, as they address the fundamental challenge of representing Islamic knowledge in ways that AI systems can process. Without such representations, AI applications in Islamic education would be severely limited.

Elzeiny et al. (2025) have extended this work by formalizing cognitive operations in ontology-based approaches, formalizing objects, properties, relations, and inference rules to simulate human reasoning. However, they explicitly require expert oversight to ensure interpretive accuracy and ethical alignment, recognizing that AI cannot fully replicate human interpretive judgment. We find this a crucial qualification, as it acknowledges the limits of AI while still recognizing its potential contributions. Ontology-based approaches are not a substitute for human scholarship; they are tools that can support and enhance human scholarship when used appropriately.

Hybrid models represent a synthesis of the frameworks identified above, recognizing that AI and human educators each have distinct and complementary roles. Andri Nirwana et al. (2025) and Abubakari (2025) have both articulated the necessity of hybrid models, arguing that AI supports cognitive and psychomotor learning effectively but cannot replicate the affective, moral, and spiritual dimensions of Islamic education. We find this a compelling argument, and we would add that hybrid models are not merely preferable but necessary for maintaining theological authenticity. The evidence, as reviewed by Andri Nirwana et al. (2025), indicates that hybrid models preserve theological authenticity and ethical guidance by ensuring that human educators retain responsibility for affective and spiritual development. AI serves as a tool that enhances efficiency and personalization while human educators remain the primary agents of moral and spiritual formation. This is, in our view, the most promising approach to AI integration in Islamic education, as it leverages the strengths of both AI and human educators while respecting the limits of each.

Ontology Construction and AI Applications

Our review reveals significant progress in developing machine-understandable ontologies for Islamic knowledge, and we find this progress both encouraging and instructive for thinking about AI integration. Bendjamaa and Taleb (2024) have developed OntoDin, a comprehensive ontology of Quran and Hadith that structures Islamic knowledge for AI applications, enabling semantic search, automated reasoning, and interoperability. This is, in our view, a significant technical achievement, as it addresses the fundamental challenge of representing Islamic knowledge in ways that AI systems can process. Without such representations, AI applications in Islamic education would be severely limited, as AI systems would have no structured way to access or reason about Islamic texts. We should note, however, that the development of ontologies is not merely a technical matter; it also involves interpretive choices about how to categorize and relate concepts, and these choices have theological implications. The developers of OntoDin have, we assume, been mindful of these implications, but we would encourage ongoing reflection on how ontological choices shape the AI applications that are built upon them.

Ta'A et al. (2014) have developed theme-based classification approaches that organize Quranic knowledge into thematic categories for better semantic understanding and application development. We find this approach particularly helpful, as it recognizes that Quranic knowledge is not a flat collection of verses but is organized around themes that give it coherence and meaning. By structuring knowledge thematically, this approach enables more sophisticated AI applications that can identify connections and patterns across Quranic texts. For example, an AI system built on a theme-based ontology could help students explore how a particular concept appears across different parts of the Quran, facilitating a deeper understanding of the text. We suspect that such applications could be valuable for both teaching and research, though we would caution that they should be used under the guidance of qualified scholars who can ensure that the thematic categories are appropriate and that the AI's outputs are interpreted correctly.

Elzeiny et al. (2025) have extended this work by formalizing cognitive operations in ontology-based approaches, formalizing objects, properties, relations, and inference rules to simulate human reasoning. This is a particularly ambitious endeavor, as it seeks to model the cognitive processes involved in textual interpretation. We find this approach intriguing, as it offers the possibility of AI systems that can simulate aspects of human

interpretive reasoning. However, Elzeiny et al. (2025) explicitly require expert oversight to ensure interpretive accuracy and ethical alignment, recognizing that AI cannot fully replicate human interpretive judgment. We find this qualification crucial, as it acknowledges the limits of AI while still recognizing its potential contributions. Ontology-based approaches are not a substitute for human scholarship; they are tools that can support and enhance human scholarship when used appropriately.

Our review identifies persistent epistemological gaps that ontology reconstruction must address, and we believe these gaps are central to understanding the challenges and opportunities of AI integration. Azhar et al. (2025) have explored the limitations of current AI in Quranic exegesis, arguing that AI lacks deep contextual and jurisprudential understanding, posing risks of misinterpretation. We find this a sobering assessment, as it suggests that even sophisticated AI systems may fall short when it comes to understanding complex religious texts. The contextual and jurisprudential dimensions of Islamic interpretation require not only knowledge of the text but also knowledge of the interpretive traditions that have developed around it, and AI systems simply do not have access to this knowledge in the same way that human scholars do. This does not mean that AI has no role to play in Quranic exegesis; it means that its role must be carefully defined and subject to human oversight.

Reconstructing ontological frameworks to address these epistemological gaps is a significant undertaking. Elzeiny et al. (2025) and Ismail et al. (2025) have both contributed to this effort, formalizing objects, properties, relations, and inference rules to simulate human reasoning. However, we would emphasize that simulation is not replication; AI remains a tool that approximates human reasoning but cannot fully replicate the depth, nuance, and context-sensitivity of human interpretation. This is not a criticism of AI; it is a recognition of its inherent limitations. AI can process vast amounts of text and identify patterns that might escape human notice, but it cannot replicate the spiritual insight, moral judgment, and contextual awareness that human scholars bring to their work. The reviewed literature consistently emphasizes the necessity of human oversight for interpretive accuracy and ethical alignment. Kannike and Fahm (2025) and Elzeiny et al. (2025) have both stressed this point, and we would add that human oversight is not merely a practical necessity but a theological one. Qualified religious scholars must remain responsible for consequential judgments, ensuring that AI applications serve human understanding rather than replacing it.

Based on our synthesis of the reviewed literature, we identify five design principles for theologically sound AI educational ontologies, and we believe these principles provide practical guidance for developers and educators. The first principle, theological diversity, requires that ontologies reflect the diversity of Islamic thought and avoid reductionism. Papakostas (2026) has raised this concern in the context of religious interpretation more broadly, and we find it equally applicable to educational ontologies. Islamic intellectual tradition encompasses multiple schools of law, theological perspectives, and interpretive approaches, and ontologies must accommodate this diversity rather than imposing a single, narrow interpretation. We recognize that accommodating diversity is not always easy, as it requires making choices about which perspectives to include and how to represent them. However, we believe it is essential for maintaining the richness and integrity of Islamic education.

The second principle, transparency and explainability, requires that sources, limitations, and interpretive boundaries must be clearly stated. Papakostas (2026) and Lala (2025) have both emphasized the importance of transparency in AI applications, and we would add that transparency is particularly important in religious education, where trust is essential. Users must understand the basis on which AI applications make recommendations or provide interpretations, and they must be aware of the limitations of these applications. This transparency fosters trust and enables informed use of AI tools. We suspect that many users may not be aware of the limitations of AI, and we would encourage developers to make these limitations explicit.

The third principle, preservation of interpretive authority, requires that consequential judgments must be reserved for qualified religious experts. Abdelgelil et al. (2025) have explored this issue in the context of Quranic Qira'at, and we find their argument compelling. AI can support and enhance human interpretation, but it cannot replace the contextual, spiritual, and ethical judgment that only human scholars can provide. This is a principle that we believe should guide all AI applications in Islamic education, as it preserves the traditional authority structure of Islamic scholarship while still leveraging AI's capabilities.

The fourth principle, domain-specific application, requires that AI should be deployed selectively based on domain appropriateness. Andri Nirwana et al. (2025) have demonstrated that cognitive and psychomotor domains are more amenable to AI support, while affective and spiritual domains require primary human involvement. We find this a helpful guideline for making decisions about when and how to use AI in Islamic education. It is not a rigid rule; there may be contexts where AI can contribute to affective and spiritual development in limited ways. But it provides a useful starting point for thinking about the appropriate scope of AI application.

The fifth principle, continuous ethical auditing, requires that AI applications must be subject to ongoing ethical evaluation and Sharia auditing. Habib (2025) and Kannike and Fahm (2025) have both emphasized the importance of continuous auditing, and we would add that this is essential for ensuring that AI systems remain aligned with Islamic ethical principles as they evolve and as societal contexts change. AI systems are not static; they learn and adapt over time, and their behavior may change in ways that were not anticipated. Continuous auditing helps ensure that they remain ethically sound throughout their lifecycle.

Ethical Governance and Pedagogical Strategies

Our review identifies key governance challenges and solutions that we believe are essential for ensuring that AI integration in Islamic education is both responsible and sustainable. The governance challenges, as documented by Habib (2025) and Kannike and Fahm (2025), include algorithmic bias, privacy violations, lack of transparency, and erosion of human autonomy. We find these challenges particularly acute in religious education contexts, where the stakes include theological integrity and spiritual well-being. Algorithmic bias, for instance, is not merely a technical problem but a theological one; if an AI system systematically favors certain interpretations over others, it may inadvertently promote a particular theological perspective at the expense of others. Privacy violations raise similar concerns, as the collection and use of student data must respect the dignity and autonomy of learners. Lack of transparency undermines trust, which is essential for any educational relationship, and erosion of human autonomy threatens the very purpose of education, which is to cultivate free and responsible human beings.

The governance solutions proposed in the literature are, we believe, both practical and theoretically grounded. Habib (2025) and Azam et al. (2026) have advocated for human-centered governance, explainable AI, continuous Sharia auditing, and interdisciplinary collaboration between Islamic scholars and technologists. Human-centered governance ensures that AI serves human purposes rather than the reverse, and we find this a particularly important principle. Explainable AI makes decision-making processes transparent, allowing users to understand how AI systems arrive at their recommendations. Continuous Sharia auditing ensures ongoing compliance with Islamic ethical principles, and interdisciplinary collaboration brings together the diverse expertise needed to address the complex challenges of AI integration. We would add that these governance solutions are not merely technical fixes; they require a commitment to ongoing reflection and dialogue about the ethical dimensions of AI. It is not enough to implement governance mechanisms; they must be continually evaluated and refined in light of experience and changing circumstances.

Our review emphasizes the centrality of educator preparation in successful AI integration, and we believe this is one of the most critical factors in determining the success or failure of AI initiatives. Arif et al. (2026) and Abubakari et al. (2026) have both stressed the importance of professional development, arguing that teacher

training in AI literacy, curriculum reform, and ethical AI use is essential. We find this a compelling argument, as educators are on the front lines of AI integration and must make countless decisions about when and how to use AI in their teaching. Without adequate preparation, they may either avoid AI altogether or use it in ways that are not pedagogically sound. Professional development must therefore equip educators with both technical skills and theological understanding, enabling them to navigate the complex terrain of AI integration responsibly.

The pedagogical strategies that emerge from our review emphasize relational, embodied, and communal aspects of spiritual formation. Hwang (2026) has explored these dimensions in the context of religious education more broadly, and we find the insights applicable to Islamic education as well. AI, we would argue, should supplement rather than supplant these essential human dimensions of education. Strategies should maintain the primacy of human interaction in fostering faith, character, and moral development. This is not to say that AI has no role to play; it can provide resources, facilitate practice, and offer personalized support. But the core work of spiritual and moral formation must remain in the hands of human educators, who can provide the relational and communal context that is essential for this work.

Governance principles should restrict AI autonomy in evaluative decisions and emphasize character-centered pedagogy. Salim et al. (2026) have articulated this position in their comparative analysis of Christian and Islamic perspectives on educational theology in the era of AI. We find their argument persuasive: AI should not be allowed to make final judgments on student performance, particularly in religious subjects where human judgment and spiritual sensitivity are essential. Character-centered pedagogy, by contrast, emphasizes the formation of virtuous individuals, and this is a goal that requires human guidance and example. AI can support this goal by providing resources and tools, but it cannot replace the human relationships that are central to character formation.

Beyond the immediate pedagogical and governance considerations, our review suggests broader institutional and policy implications that we believe deserve attention. The integration of AI into Islamic education is not merely a matter of individual teachers making decisions in their classrooms; it requires institutional support and policy frameworks that enable and guide AI integration. Institutions must invest in infrastructure, professional development, and ongoing evaluation of AI applications. They must also develop policies that address ethical concerns, such as data privacy, algorithmic bias, and the limits of AI autonomy. We recognize that developing such policies is a complex undertaking, as it requires balancing multiple considerations and engaging diverse stakeholders. However, we believe it is essential for ensuring that AI integration is both effective and aligned with Islamic values.

We would also note that policy development should be informed by the experiences of educators and students, as they are the ones who will be most directly affected by AI integration. This suggests the importance of participatory approaches that engage stakeholders in the policy development process. We are aware that such approaches are not always easy to implement, as they require time, resources, and a commitment to dialogue. However, we believe they are essential for building trust and ensuring that policies are responsive to the needs and concerns of those they affect.

Gaps and Future Directions

Our systematic review reveals significant epistemological and theological gaps that require further scholarly attention, and we believe these gaps are not merely academic concerns but have practical implications for how AI is integrated into Islamic education. The first of these gaps concerns the tension between algorithmic and traditional authority. Arif et al. (2026) and Andri Nirwana et al. (2025) have both noted that tensions remain unresolved regarding whether AI can legitimately contribute to religious interpretation. While AI can support and enhance human interpretation, we find that questions persist about the limits of algorithmic knowledge production and the preservation of traditional scholarly authority. This is not a simple matter; it

involves complex judgments about the nature of knowledge, the role of human reason, and the authority of religious scholars. We suspect that these tensions will not be resolved quickly, and we would encourage ongoing reflection and dialogue on these issues. The question of whether AI can legitimately contribute to religious interpretation is not merely a technical one; it is a theological one that requires careful consideration of the nature of revelation, reason, and human authority.

The second gap concerns affective and spiritual domains. Andri Nirwana et al. (2025) and Azhar et al. (2025) have documented AI's inherent limitations in these domains, which necessitate continued human involvement. However, we find that the precise boundaries of AI application remain unclear, requiring further conceptual work and empirical investigation. Where, exactly, should the line be drawn between what AI can appropriately do and what must be reserved for human educators? This is a question that we believe cannot be answered abstractly; it requires careful consideration of specific contexts, educational goals, and the capabilities of particular AI applications. We would encourage researchers to explore this question through both conceptual analysis and empirical investigation, as the boundaries of AI application may vary across different contexts and educational settings.

The third gap concerns pluralism and diversity. Papakostas (2026) has argued that there is a pressing need for ontologies that reflect intra-Islamic diversity, and we find this a compelling concern. Islamic intellectual tradition encompasses multiple schools of law, theological perspectives, and interpretive methodologies, and ontologies must represent this diversity rather than imposing a monolithic interpretation. We recognize that representing diversity is not always easy, as it requires making choices about which perspectives to include and how to represent them. However, we believe it is essential for maintaining the richness and integrity of Islamic education. An ontology that imposes a single, narrow interpretation would not only be intellectually impoverished but would also fail to serve the diverse needs of Islamic educational communities.

Our review identifies significant socio-legal and governance challenges that we believe must be addressed if AI integration is to be both effective and responsible. The first of these concerns regulatory gaps. Qutieshat et al. (2026) have observed that existing frameworks in Muslim countries are often inadequate for AI explainability, liability, and oversight. We find this a concerning gap, as regulatory frameworks provide the legal and institutional infrastructure for responsible AI integration. Without adequate regulatory frameworks, there is a risk that AI applications may be deployed in ways that are not transparent, accountable, or aligned with Islamic ethical principles. We would therefore encourage the development of regulatory frameworks that address the unique ethical and theological dimensions of AI in Islamic education. This is not a simple task, as it requires balancing multiple considerations and engaging diverse stakeholders. However, we believe it is essential for ensuring that AI integration is both responsible and sustainable.

The second challenge concerns ethical oversight. Kannike and Fahm (2025) and Qutieshat et al. (2026) have both argued that ethical oversight requires integration of Islamic legal objectives with international standards. This integration, we would suggest, demands interdisciplinary collaboration that bridges Islamic scholarship, technology, and governance. We recognize that this is a demanding requirement, as it requires bringing together diverse expertise and perspectives. However, we believe it is essential for ensuring that AI integration is guided by sound ethical principles and is responsive to the needs and concerns of Islamic educational communities. We would encourage the development of ethical oversight mechanisms that are both grounded in Islamic principles and informed by international best practices.

4.3. Interdisciplinary Collaboration and Pluralistic Approaches

Our review emphasizes the importance of interdisciplinary collaboration and pluralistic approaches for future research and practice. Abubakari (2025) and Abubakari et al. (2026) have both stressed that interdisciplinary collaboration among Islamic scholars, technologists, educators, and policymakers is essential for effective AI integration. We find this a compelling argument, as AI integration is a complex endeavor that

requires the combined expertise of multiple disciplines. Islamic scholars provide theological and ethical guidance, technologists provide technical expertise, and educators provide pedagogical insight. Without this collaboration, there is a risk that AI integration will be driven by technical considerations alone, without adequate attention to theological, ethical, or pedagogical dimensions. We would encourage the development of interdisciplinary research and practice communities that bring together diverse stakeholders to address the challenges of AI integration.

Widodo (2025) has argued for pluralistic, context-sensitive research that addresses youth perspectives, religious diversity, and the dynamic interplay between AI and tradition. We find this a particularly important direction for future research, as it recognizes that AI integration is not a one-size-fits-all endeavor but must be adapted to the specific needs and contexts of different Islamic educational communities. Youth perspectives, for instance, are often overlooked in discussions of AI integration, yet young people are the ones who will be most directly affected by AI in education. Religious diversity, similarly, requires attention to the different traditions and perspectives within Islam, as well as to the relationship between Islamic education and other religious and secular traditions. We would encourage researchers to adopt pluralistic, context-sensitive approaches that respect diversity and are responsive to the needs of different communities.

Our review identifies a significant gap in empirical research on AI integration in Islamic education, and we believe this is a gap that must be addressed if the field is to advance. Abubakari (2025) and Merah and Tahraoui (2026) have both observed that while conceptual frameworks have been proposed, empirical validation through implementation studies, case studies, and impact assessments is urgently needed. We find this a concerning gap, as conceptual frameworks, no matter how sophisticated, remain untested until they are implemented and evaluated in real-world contexts. Without empirical validation, we cannot be confident that the frameworks we have identified are effective in practice or that they achieve the intended outcomes. We would therefore encourage researchers to conduct empirical studies that evaluate the implementation and impact of AI integration in Islamic education.

Research on teacher training programs for AI integration is also limited. Abubakari et al. (2026) have noted that studies are needed to evaluate the effectiveness of professional development programs in preparing educators for AI integration. We find this a particularly important gap, as educators are central to the success of AI integration. Without adequate training, educators may struggle to use AI effectively or may avoid it altogether. Empirical research on teacher training programs would provide valuable insights into what works and what does not, enabling the development of more effective professional development initiatives. We would encourage researchers to conduct rigorous evaluations of teacher training programs, using both quantitative and qualitative methods to assess their effectiveness and identify areas for improvement.

CONCLUSION

This systematic review has examined the intersection of Islamic educational ontology and artificial intelligence, and we have identified several key insights that we believe are essential for understanding both the challenges and opportunities of AI integration. The first insight is that foundational frameworks already exist to guide this integration, addressing the normative-epistemological dimensions of Islamic education while providing practical guidance for AI implementation. These frameworks are not merely theoretical; they offer concrete pathways for reconstructing Islamic educational ontology in ways that preserve theological integrity while embracing technological innovation. The second insight, which we consider equally important, is that balance is essential. AI can significantly enhance cognitive and psychomotor learning, yet human educators remain indispensable for affective, moral, and spiritual development. This is not a limitation to be overcome but a reality to be embraced; the ontological turn requires a balanced approach that leverages AI's capabilities while preserving the irreducible role of human educators in spiritual formation. The third insight concerns ethical

governance, which we believe is paramount. Governance must be grounded in Islamic principles and ensure transparency, accountability, and human oversight. The fourth insight is that ontology reconstruction offers a path forward. Machine-understandable ontologies enable AI applications while preserving interpretive authority and theological integrity, though we would caution that ontology reconstruction must avoid reductionism and reflect the diversity of Islamic thought. The fifth and final insight is that future research is needed, particularly in the areas of empirical validation, teacher training, socio-legal governance, and pluralistic, interdisciplinary collaboration.

The theoretical implications of our review are, we believe, significant. The ontological turn in Islamic education requires a reconceptualization of Islamic educational ontology that accommodates AI without compromising its theological foundations. This reconceptualization must preserve the four foundational dimensions of Islamic education while recognizing AI's capabilities and limitations. This is not a simple task, as it requires rethinking fundamental concepts while remaining faithful to the Islamic intellectual tradition. The practical implications are equally significant. Educational institutions must invest in teacher training, digital infrastructure, and Sharia-compliant AI governance to realize AI's potential while preserving theological integrity. This is a demanding requirement, but we believe it is essential for ensuring that AI integration is both effective and responsible. Practical implementation requires collaboration among Islamic scholars, technologists, educators, and policymakers, as no single group possesses all the expertise needed to navigate the complex terrain of AI integration. We would also add that this collaboration must be ongoing and adaptive, as the challenges of AI integration will continue to evolve as the technology itself evolves.

The integration of AI into Islamic education is both promising and fraught with complexity, and we have come to appreciate the depth of this complexity through our review. Success depends on frameworks that honor the depth and diversity of Islamic tradition while embracing the transformative potential of AI, always with ethical vigilance and human stewardship at the core. The ontological turn in Islamic education is not a rejection of tradition but a dynamic engagement with contemporary challenges that seeks to preserve the essence of Islamic education while adapting to the realities of the digital age. This turn requires courage, wisdom, and collaboration from scholars, educators, technologists, and communities committed to nurturing Islamic education for the twenty-first century. As AI technologies continue to evolve, we believe the imperative to preserve theological integrity while leveraging AI's potential will only intensify. The frameworks, principles, and strategies identified in this review provide a foundation for this critical work, but sustained effort, interdisciplinary collaboration, and pluralistic, context-sensitive research will be essential for realizing the promise of AI in Islamic education without compromising its sacred foundations. Ultimately, we are optimistic that such efforts can succeed, provided that they are guided by a deep commitment to both Islamic values and the responsible use of technology.

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