

Cognitive Efficiency vs. Spiritual Depth: Pedagogical Readiness and Digital Ethics of Prospective Islamic Education Teachers

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Abstract. *Although technology adoption in education continues to rise, previous research indicates that the integration of Artificial Intelligence (AI) in Islamic Education remains predominantly instrumental and administrative. This trend risks creating a disconnect between technical proficiency and critical thinking, while posing a threat to religious authority. This study aims to explore the pedagogical readiness and digital ethics challenges faced by prospective Islamic Education teachers in confronting AI-driven learning transformations. Employing a qualitative approach with a case study design, the research was conducted at the Faculty of Tarbiyah and Teacher Training, UIN K.H. Abdurrahman Wahid Pekalongan. Data were collected through in-depth interviews, digital classroom observations, and curriculum documentation, all validated via methodological triangulation. The findings reveal that AI can function as a digital More Knowledgeable Other (digital MKO), accelerating cognitive efficiency through adaptive personalized learning. However, this efficiency exists in tension with affective-spiritual depth, triggering risks such as plagiarism, hallucination of fictitious information, and the erosion of the tabayyun (verification) tradition. This study offers insights for re-evaluating the competency framework of Islamic Education teachers by synchronizing technology with sacred Islamic values. Practical implications urge Islamic higher education institutions to redefine educators' roles as value curators, promote digital Islamic sanad literacy, and formulate ethical standards for AI usage to cultivate future Murabbi who are digitally proficient yet spiritually grounded.*

Abstrak. Meskipun adopsi teknologi dalam pembelajaran semakin meningkat, beberapa penelitian sebelumnya mengindikasikan bahwa integrasi *Artificial Intelligence* (AI) dalam Pendidikan Islam saat ini masih cenderung bersifat instrumental-administratif, yang berisiko memicu diskoneksi antara kemahiran teknis, pendangkalan daya kritis, serta ancaman terhadap otoritas keagamaan. Penelitian ini bertujuan mengeksplorasi secara terfokus kesiapan pedagogis dan tantangan etika digital mahasiswa calon guru Pendidikan Islam dalam menghadapi transformasi pembelajaran berbasis AI.

Pendekatan penelitian menggunakan metode kualitatif dengan desain studi kasus di Fakultas Tarbiyah dan Ilmu Keguruan UIN K.H. Abdurrahman Wahid Pekalongan. Data dikumpulkan melalui wawancara mendalam, observasi kelas digital, dan dokumentasi kurikulum yang diuji lewat triangulasi metodologis. Hasil temuan penelitian mengungkap bahwa AI dapat berfungsi sebagai digital *More Knowledgeable Other* (digital MKO) yang mengakselerasi efisiensi kognitif melalui personalisasi pembelajaran adaptif. Namun, efisiensi ini berada dalam ketegangan dengan kedalaman afektif-spiritual, serta memicu risiko plagiarisme, halusinasi informasi fiktif, dan reduksi tradisi tabayyun. Studi ini menawarkan wawasan untuk meninjau kembali model kompetensi guru Pendidikan Islam melalui sinkronisasi teknologi dan nilai sakralitas Islam. Implikasi praktisnya mendesak lembaga perguruan tinggi Islam untuk meredefinisikan peran pendidik sebagai kurator nilai, memiliki literasi sanad keislaman digital, serta menyusun standarisasi etika penggunaan AI guna membentuk profil *Murabbi* masa depan yang cakap digital sekaligus kokoh secara spiritual

A. INTRODUCTION

The dynamics of Islamic education in the Industrial Revolution 4.0 era have triggered a fundamental paradigm shift from conventional analog methods toward a massive digital ecosystem (Barkati & Cahyadi, 2024). In various Islamic schools, learning models have begun utilizing e-learning, online classrooms, and online discussions through platforms such as Google Classroom, Zoom Meeting, and other technology-based learning tools (Haidir et al., 2021). In its development, Artificial Intelligence (AI) technology has emerged with Large Language Models (LLMs) like ChatGPT and Gemini, providing tailored learning experiences, optimizing content delivery, and offering real-time feedback (Bannert et al., 2023; Razafinirina et al., 2024). Additionally, Adaptive Learning Systems utilize AI to personalize the curriculum according to the specific needs of each user. This system offers convenience, speed, and efficiency in mastering various fields of knowledge through dynamic material adjustment (Holmes & Tuomi, 2022; Li et al., 2025).

On the other hand, the implementation of the *Kurikulum Merdeka* (Independent Curriculum), which emphasizes flexibility and personalized learning, makes the utilization of the Technological Pedagogical Content Knowledge (TPACK) framework an absolute necessity for educators in the digital era (Kurikulum, 2024). TPACK serves as a standard for interactive and inspiring learning processes, encompassing teachers' ability to integrate technology pedagogically (Chiu, 2024; Mishra & Koehler, 2006). AI-assisted TPACK development has proven effective in restructuring conceptual understanding and strengthening representational fluency among students in Islamic education (Ahyani et al., 2025). in enhancing technical-procedural understanding and representational fluency in specific instructional contexts, as measured by short-term cognitive test scores. However, these indicators remain limited to instrumental metrics and fail to capture holistic Islamic education goals, such as spiritual depth, moral character (*akhlak*), and affective transformation. This demand aligns with the principles of Vygotsky's Social Constructivism Theory, which posits that effective learning occurs through interaction with a More Knowledgeable Other (MKO)(Vygotsky & Cole, 1978).

Within Vygotsky's theoretical framework, the More Knowledgeable Other (MKO) fundamentally refers to a human figure possessing a higher level of understanding (Vygotsky & Cole, 1978). However, in the context of modern digital learning, Artificial

Intelligence (AI) can be conceptually adapted as a 'digital MKO' (Mazzoni et al., 2025). This conceptual adaptation entails distinct epistemological limitations and implications: while AI is capable of providing cognitive scaffolding and real-time technical feedback, it lacks the spiritual consciousness, inner experience, and humanistic moral authority that serve as essential prerequisites for the transmission of Islamic values (Fadel et al., 2019).

However, in the context of Islamic Education, integrating AI raises fundamental questions about how the educational community consumes, produces, and transforms religious knowledge (Selwyn, 2023). Thus far, the utilization of technology in Islamic Education still tends to be instrumental and dominated by administrative teaching aids. This is evident in the use of synchronous platforms such as Google Meet (Dariyanto et al., 2026), digital quiz evaluation instruments via Quizizz (Sakdiah et al., 2025) and the use of video tutorial-based media (Ilmudinulloh et al., 2020). Although these approaches are capable of increasing students' visual engagement, there is a sharp disconnection between the technical capabilities of the devices and the transmission of substantial *akhlak* (moral) values in accordance with the goals of Islamic education.

Based on recent literature mapping (Adiyono et al., 2025; Sujatha et al., 2023; Zuhriyeh et al., 2025), existing research predominantly focuses on technical efficiency, media optimization, and user satisfaction. However, no systematic study has explicitly examined the potential disintegration of spiritual values and the threat to the authority of Islamic scholarly lineage (*sanad*) resulting from AI utilization. Therefore, this study addresses this literature gap by analyzing how AI is integrated as an instrument for personalized learning in Islamic Education, focusing on prospective teachers who stand at the forefront of digital transformation.

B. RESEARCH METHOD

This study employed a qualitative approach with a case study design to explore the phenomenon of Artificial Intelligence (AI) integration in personalizing Islamic Education learning. The case study design was selected due to its capacity to synthesize various data sources to comprehend the deep experiences of participants within a virtual education context (Matthew et al., 2023). The case boundary of this study is specifically defined around the practice of AI integration within the learning process of prospective teachers and the cognitive-spiritual dialectic occurring in the Islamic Education Study Program, Faculty of Tarbiyah and Teacher Training, UIN K.H. Abdurrahman Wahid Pekalongan. Research subjects were selected using a purposive sampling technique based on specific criteria: students actively utilizing generative AI tools in Islamic academic assignments and faculty members teaching core subject-matter courses. The participants in this study comprised 43 sixth-semester students from the Islamic Education Study Program, selected because they had already completed prerequisite courses in instructional technology and Islamic pedagogical foundations, and 4 lecturers of specialized core courses, and 2 educational technology developers/administrators.

To ensure the validity and reliability of the findings, this study implemented methodological triangulation (Huberman & Miles, 2002). First, source triangulation was conducted by gathering data from students, lecturers, and technology developers. Subsequently, technical triangulation was applied through the integration of in-depth interviews, classroom observations, and curriculum documentation (Schlunegger et al., 2024). The data analysis phase was systematically conducted to ensure transparency and consistency between the raw data and the resulting theoretical constructs, progressing through the stages of data reduction, data display, and conclusion drawing/verification (Cole, 2024). Operationally, data collection was carried out both directly through interviews and via digital assistance to gather diverse field data, which were subsequently

analyzed thematically to facilitate the development of research findings

C. RESULT AND DISCUSSION

Findings

Analysis of the field data reveals an ambivalent dialectical pattern regarding the integration of AI in Islamic Education instruction. Alongside the risks and negative impacts associated with AI, this study also identified good practices and forms of positive resistance among both students and faculty members. Some students critically utilize AI merely as an initial brainstorming tool, which must subsequently be cross-verified through comparison with classical Islamic texts (*kitab turats*) and reputable journals. Concurrently, faculty members employ cross-validation methods and oral examinations (*munaqasyah*) to ensure academic integrity and substantive student understanding.

Exploration Dimension	Cognitive Acceleration	Spiritual & Ethical Risks	Implications for Prospective Islamic Education Teachers
Personalized Learning	Adaptive learning path	Loss of affective-spiritual depth, instant cognitive dependence.	The need for a shift toward deep critical reflection (<i>tadabbur</i>)
Pedagogical Readiness & TPACK	Technical proficiency in preparing instructional tools	Disconnection from substantial critique against AI.	The necessity of validation capabilities grounded in the Islamic intellectual tradition.
Authority & Integrity	Rapid access to various Islamic comparisons	Crisis of religious authority, risk of fictitious information hallucination.	The urgency of digital <i>tabayyun</i> (verification) literacy.
The Role of Educators	Efficiency in administrative tasks	Loss of role modeling (<i>uswah</i>) and emotional touch.	The necessity for teachers to become value curators (<i>Murabbi</i>).

Table I. Exploration Dimension Mapping Matrix of Field Findings

1. AI-Based Personalized Learning in Islamic Education

Based on the results of interviews with students within the context of Islamic religious education, there is a prominent tendency to utilize AI to break down complex Islamic jurisprudence (*fiqh*) concepts into more practical and simpler explanations. Field data obtained from student informants indicate that the use of AI, particularly Large Language Models (LLMs) such as ChatGPT and Gemini, makes the process of studying intricate educational theories much easier and faster. Students leverage this technology to deconstruct technical terms or difficult Islamic scholarly concepts by prompting the AI to present them in simpler, more accessible language.

Other field findings confirm that students position AI as a 24-hour discussion partner to test their comprehension through interactive questions and answers. The

presence of AI enhances students' confidence in drafting course assignments and solving contemporary *fiqh* problems due to the instant feedback provided by the system. Furthermore, students feel they possess a non-judgmental dialogue partner when encountering difficulties in understanding scriptural arguments (*dalil*) or deepening their Islamic scholarly knowledge (interviews).

However, the field data also reveal a duality of feelings among students. On the one hand, they feel highly supported from a technical standpoint; on the other hand, there is a growing awareness of the risk of cognitive dependence (interviews). This condition is reinforced by the explanations of lecturers in interviews, who clarify that this cognitive transformation leaves a significant gap in the affective dimension, which is spiritual in nature. Although AI is capable of responding to cognitive needs instantaneously, it lacks the soul required for transmitting religious values. Field data analysis demonstrates that AI personalization remains inherently mechanistic; while AI can adjust learning materials dynamically, it is fundamentally unable to touch the emotional-spiritual experiences that form the core of religious learning. Consequently, the lecturers emphasized in their interviews that the cognitive transformation offered by AI must be stringently controlled to prevent it from eroding the depth of critical-spiritual reflection (*tadabbur*) among students when studying religious sciences.

2. Teachers' Pedagogical Readiness between Digital Literacy and Religious Authority

Field findings reveal a sharp disconnect between students' technical confidence and the reality of their actual pedagogical readiness. From the lecturers' perspective, students tend to utilize AI merely to expedite the formalities of preparing academic documents without conducting any substantial critique of the content generated by the machine. Within the context of Islamic sciences, a crucial problem arises regarding the aspect of religious authority. The results of the interviews reveal that students nowadays consult AI programs far more frequently than they communicate with lecturers. Lecturer informants expressed deep concern that if prospective teacher students continue to rely on AI without valid verification, the scholarly authority grounded in the strength of *sanad* (the chain of transmission) will be threatened (interviews).

Further findings indicate variations in student behavior when verifying religious information generated by AI. Some student informants admitted that they perform checks and balances by comparing AI answers with journals, books, or by consulting directly with lecturers to ensure validity. However, from the lecturers' perspective, this phenomenon is still viewed as a serious academic literacy challenge, as students' tendency to seek shortcuts often overrides diligence in conducting *tabayyun* (verification) with authoritative sources. The lecturers emphasized that excessive dependence without intensive spiritual guidance risks fostering an instant mindset and reducing students' critical thinking capacity in filtering moderate Islamic content.

3. Academic Integrity and the Digital Gap in Religious Content

Field data indicate that students reported biased AI answers, particularly on contemporary *fiqh* (Islamic jurisprudence) issues that require deep analysis. According to descriptions from lecturers, dependence on these algorithms risks creating an erroneous and fragmented understanding of religion. The majority of students admitted that relying on AI slowly diminishes their intention to think critically and read primary reference books.

From an ethical standpoint, the use of AI triggers debates regarding the boundary between learning assistance and plagiarism. Lecturers confirmed that students' academic assignments have become technically neater, yet their originality remains questionable. Furthermore, field findings highlight the impact of AI utilization on the learning behavior patterns of prospective Islamic Education teachers, where a tendency to depend on instant generative AI answers reduces a comprehensive understanding of religious sciences. These data demonstrate a shift from a library-based research culture toward a consumption culture provided by machines. A duality was found in the quality of students' academic assignments since the massive adoption of AI: technically, they appear neater, more structured, and informative; however, on the other hand, they lose originality of thought and the author's intellectual identity because the generated content tends to be uniform.

4. Redefining the Role of the *Murabbi* in the Automation Era

Research data indicate a shift in the role of Islamic Education teachers from mere content deliverers (*informants*) to curators of values and spiritual guidance. In interviews, lecturers emphasized that in the automation era, their primary task is to draw students back to the real world to avoid excessive digital dependence through deep dialogues of wisdom (*hikmah*). This demonstrates that educators no longer position themselves to compete with AI in terms of information speed; instead, they focus on moral guidance.

Informants asserted that such technology is incapable of providing exemplary role modeling (*uswah hasanah*) and an emotional, heartfelt connection. Field findings show that essential elements such as spiritual guidance and the instillation of *adab* (etiquette/moral values) are still viewed as the absolute authority of humans. Observations of interactions within digital classrooms confirm that students still strongly require the presence of an educator figure to validate their understanding, particularly regarding aspects related to character and empathy that cannot be simulated by machines. Educators act as moderators who help students sort and filter AI-generated information so that it remains aligned with moral filters and correct Islamic principles. Ultimately, the field data depict the profile of the future *Murabbi* as an educator who is digitally capable yet remains steadfast in spiritual authority and character integrity.

Discussion

This section constructs a critical dialectic between prospective teachers' digital practices, contemporary educational theories, and the Islamic intellectual tradition. By examining cognitive shifts, the crisis of sanad-based authority, and digital ethics, this discussion bridges empirical findings with literature to propose a value-restorative counter-model.

Discussion Sub-section	Empirical Obstacles & Crises	Proposed Solutions & Novelty
Epistemological Transformation	Cognitive dependency; "The Shallows" effect	Assessment reform and critical text analysis
The Science of Sanad in Algorithms	Crisis of religious authority; prevalence of AI data hallucinations	Digital Sanad Literacy; faculty members as validation curators

Digital Ethics & Murabbi Character	Ethical plagiarism; erosion of uswah (exemplary role modeling)	Ethical standardization and Spiritual-TPACK reconstruction
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Table II. Theoretical Synthesis Matrix and Proposed Solutions

The findings of this study align with Selwyn's theory regarding the risks of educational automation in reducing the humanistic role of educators (Selwyn, 2019). However, they also contradict the perspective of technological determinism, which posits that AI will completely replace the role of teachers. The specific novelty of this study, compared to existing AI research in Islamic education, lies in the formulation of the 'Digital Sanad Literacy' concept and the Spiritual-TPACK framework, wherein the epistemological validation of Islamic scholarship is integrated into modern technology to prevent the erosion of religious authority.

1. Transforming Islamic Education Epistemology in the Generative AI Era

Field findings indicating an ambivalent dialectical pattern in students' technology utilization mark an epistemological shift in how religious knowledge is constructed. On the one hand, the finding that AI acts as a 24-hour interactive learning partner aligns with the concept of Adaptive Learning, where technology is capable of providing personalized scaffolding according to learners' needs and acting as a More Knowledgeable Other (digital MKO) (Kwon et al., 2026). This operational finding also confirms that the introduction of this technology occurs implicitly through a hidden curriculum, such as course assignments, workshops, and seminars, rather than formal courses (Syukur et al., 2024) which is capable of facilitating an adaptive learning path through real-time feedback (Mintasih et al., 2024).

However, from an epistemological perspective, this convenience triggers a sharp duality. Field findings regarding the loss of the affective spiritual dimension and the emergence of instant cognitive dependence among students are reinforced by recent literature indicating that AI, despite appearing persuasive, is often inaccurate, inconsistent, and prone to answer hallucinations (Albuquerque & Santos, 2026). This phenomenon triggers "The Shallows" effect, where overly intensive digital interaction causes a loss of focus for deep thinking, weakens contextual reasoning abilities, and reduces critical reflection (Barrot, 2023; Carr, 2020). Consequently, the integration of virtual spaces through AI gives rise to serious ethical challenges in the form of threats to the originality of work and a decline in learning responsibility (Bond et al., 2024). This digital expansion brings constant distractions that fragment the deep concentration of Islamic Education students when internalizing religious texts (Asiyah et al., 2026).

The interpretation of these findings indicates that AI alters the way students interact with religious texts, shifting from critical reading toward dependency on algorithmic summaries. As a practical implication, Islamic educational institutions need to reform learning evaluation methods; in addition to memorization skills or material comprehension, critical analysis and spiritual reflection are strictly required. The curriculum must encourage students to utilize AI merely as an initial tool or starting point, which must subsequently be validated through comprehensive text analysis tracing methods.

2. Constructing Sanad Science within Algorithms

Field findings regarding students' tendency to consult machines rather than lecturers reflect a serious crisis of religious authority within the tradition of knowledge

transmission. Theoretically, TPACK competency demands an alignment among content mastery (Content), teaching methods (Pedagogical), and technological proficiency (Technological) (Celik, 2023; Nguyen et al., 2024). However, field evidence proves a crucial disconnection: students are trapped in instrumental technical proficiency without the ability to conduct substantial critiques of AI. This gap confirms Huda's critique of the conventional TPACK framework, which focuses excessively on optimizing digital tools but fails when confronted with the ultimate goals of Islamic education (Huda, 2025). Huda's critique underscores that standard TPACK treats technology as a neutral efficiency tool while ignoring the spiritual-ethical values intrinsic to Islamic pedagogy. This study extends Huda's critique by proposing the 'Spiritual-TPACK' framework, which embeds spiritual validation and digital *sanad* awareness directly into pedagogical content knowledge.

When students delegate the verification process of religious knowledge to statistical algorithms operating on word probability patterns rather than spiritual authority or a connected (*muttashil*) scholarly *sanad* (chain of transmission), a dangerous disconnect occurs between religious information and spiritual transformation (Widodo, 2025; Khasani, 2026). Reliance on these digital algorithms risks triggering the commodification of instant spirituality (Qosim & Hamid, 2025), defined here as the reduction of deep, transformative spiritual practices into quick, consumable digital transactions without personal devotion or scholarly rigor. For instance, students prompt AI to generate instant religious reflection notes or fiqh summaries to fulfill course requirements without undergoing actual spiritual reflection (*tadabbur*) or inner moral transformation, and this gives rise to the phenomenon of AI hallucinations in the form of fabricating fictitious bibliographic references that undermine the accuracy of academic research (Salvagno et al., 2023).

Empirically, the phenomenon of the diminishing culture of *tabayyun* (verification) toward authoritative sources reinforces Selwyn's theory on the risks of educational automation, where the offloading of educators' human judgment to automated systems reduces professional sensitivity (Selwyn, 2019). Therefore, the reconstruction of authority necessitates a synthesis between technology and the authoritative Islamic intellectual tradition, achieved through structured teaching models spanning from comprehension to value internalization (Cotton et al., 2024; Ferianto et al., 2025). The authority of lecturers or teachers must be repositioned not as a sole information source, but rather as validation mentors who guarantee that technology does not break the chain of traditional Islamic knowledge transmission (Syarifuddin, 2026). The practical implication of these findings is the necessity of strengthening the role of lecturers as digital *sanad* guardians (Zahari et al., 2026). Islamic educational institutions should facilitate digital religious spaces or digital *sanad* literacy laboratories to train students in verifying religious understanding and practices, as well as in tracing fictitious references resulting from AI hallucinations against primary texts (*kitab*).

3. Digital Ethics and the Character of the Murabbi

Field data confirming that essential elements such as spiritual guidance, emotional connection, and the instillation of *adab* (etiquette) cannot be simulated by machines repositions the central role of the Islamic Education educator as a Murabbi. These empirical data confirm the validity of Al-Attas's concept of *ta'dib*, which positions the teacher not merely as an informant but as a moral figure irreplaceable by artificial intelligence (Al-Attas, 1980). Teachers possess a profound spiritual dimension required to carry out the process of *tazkiyah al-nafs* (purification of the soul) for their

students (Ibrahim et al., 2025). As a *murabbi*, the teacher plays a central role in guiding students' character and spirituality through an inner transformation that transcends the boundaries of technical instruction. In the context of digital transformation, Al-Attas warns that moral crises occur due to the loss of harmony between knowledge and adab (Yunita et al., 2025).

The integration of AI within Islamic Education must be bounded by a moral filter to prevent reducing the sacredness of knowledge to mere statistical data. The resilience of Islamic pedagogy against AI disruption lies in the educators' ability to position themselves as curators of values and moderators of digital ethics (Muharromah & Manshur, 2025). The practical implication of this is the development of a future Murabbi profile who is digitally competent yet remains steadfast in spiritual guidance (Ma'arif et al., 2025). The integration of religious sciences into digital pedagogical models must be capable of forming an Islamic scientific character contextually (Ramadhan et al., 2026).

The students' vision to integrate science, technology, and the Qur'an demonstrates an awareness of the importance of maintaining an intellectual identity amid the digital onslaught. Given this necessity, the practical implications require the formulation of an Ethical Standardization for AI Utilization within the Islamic Education curriculum. This policy must encompass prohibitions against AI use that disregards academic honesty, while promoting transparency in using AI tools for course assignments (Achruh et al., 2024). In this way, Islamic education can capitalize on the efficiency of AI without losing the essence of character education grounded in the human relationship between teacher and student (Chan & Hu, 2023).

D. CONCLUSION

This study concludes that the integration of AI in Islamic Education necessitates a redefinition of teacher competence, shifting from mere technical mastery (conventional TPACK) toward the Spiritual-TPACK framework. The theoretical contribution of this study lies in reinforcing the concept of 'Digital Sanad Literacy' as an epistemological shield against the risks of data hallucinations and the shallowing of religious meaning. Methodologically, this research demonstrates the importance of an in-depth qualitative approach in capturing affective-spiritual dynamics that remain beyond the reach of quantitative analysis. However, this study is constrained by its scope, being limited to a single state Islamic higher education institution (PTKIN) with a small-scale qualitative sample. Hence, these findings cannot be directly generalized to all Islamic educational contexts with distinct cultural characteristics. Consequently, future research is encouraged to develop and empirically test the effectiveness of Spiritual-TPACK-based learning models, explore ethical standardization for AI utilization across Islamic higher education institutions, and examine the epistemological responses of *pesantren* (traditional Islamic boarding schools) and traditional educational institutions to AI algorithms.

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