



Beyond Automation: Artificial Intelligence and the Future of Islamic Education in Higher Education

Muhammad Hazmi Firdaus^{a,1}

^a Institut Agama Islam Hamzanwadi (IAIH) Pancor

¹ firdaushazmi27@gmail.com

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ABSTRACT

The rapid diffusion of artificial intelligence (AI) into higher education has begun to reshape how knowledge is transmitted, assessed, and authenticated, and Islamic higher education institutions are no exception. This article presents a conceptual review examining how AI is reconfiguring Islamic higher education and what this transformation means for the classical Islamic distinction between ta'lim (instruction or knowledge transfer) and ta'dib (ethical and spiritual formation). Drawing on a structured review of 24 recent studies concerning AI adoption in Islamic studies, Qur'anic learning, and religious question-answering systems, identified through a systematic search of Scopus, Google Scholar, and DOAJ, the review synthesizes three interrelated themes: the pedagogical opportunities AI affords, the epistemic and ethical risks it introduces, and the frameworks Muslim scholars have proposed to govern its use. The analysis argues that AI's value for Islamic higher education lies not in automating religious authority but in augmenting the human relationships, spiritual mentorship, and chains of transmission (isnad) that have historically anchored Islamic knowledge. The article concludes with a proposed orientation, described here as "beyond automation," in which AI is positioned as a supporting instrument governed by Maqasid al-Shari'ah (the higher objectives of Islamic law) rather than a substitute for the teacher-student relationship, and offers recommendations for curriculum designers, policymakers, and institutional leaders in Islamic higher education.

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Introduction

Artificial intelligence has moved from a peripheral instructional aid to a structural feature of higher education, generating adaptive tutoring systems, generative writing assistants, and large-scale learning analytics platforms that reshape how students study and how institutions evaluate learning. Islamic higher education institutions (IHEIs),

including Islamic universities, pesantren-affiliated colleges, and faculties of Islamic studies, have not been insulated from this shift. Students increasingly consult generative AI tools for language learning, note-taking, and even preliminary religious questions, while institutions experiment with AI-assisted platforms for Qur'an memorization, Arabic language acquisition, and academic writing support.

This development raises a question that is distinct from the general debate about AI in education: what happens to religious authority, spiritual formation, and the transmission of sacred knowledge when a statistical model can generate plausible-sounding answers to questions of fiqh (jurisprudence), aqidah (creed), or tafsir (exegesis)? Recent studies caution that generative systems can reproduce doctrinal inaccuracies or biased interpretations when applied to religious questions, and that students are not always equipped to evaluate the reliability of such outputs (Al-Badani & Alsubari, 2024). At the same time, other studies report that Muslim students in higher education display largely positive attitudes toward AI as a learning aid, provided it is framed as a supplementary rather than authoritative resource (Faizin et al., 2025).

This article takes up these tensions through a conceptual review of recent scholarship on AI in Islamic higher education. Rather than treating AI adoption as a purely technical or managerial matter, the review situates it within the classical Islamic distinction between *ta'lim*, the transmission of information, and *ta'dib*, the cultivation of character and *adab* (ethical comportment) through a living relationship between teacher and student. The central argument is that the central risk of AI in Islamic higher education is not automation itself, but automation that collapses *ta'dib* into *ta'lim*, treating Islamic knowledge as retrievable content rather than as a discipline formed through mentorship, verification, and communal accountability.

This contribution is developed across three stages that structure the remainder of the article. The Methodology section that follows explains how the reviewed literature was identified, screened, and analyzed; the Results and Discussion section then synthesizes this literature around the themes of opportunity, risk, and governance before advancing the article's own conceptual proposal, the "beyond automation" orientation; and the concluding section translates this proposal into concrete recommendations for institutional leaders, curriculum designers, and researchers in Islamic higher education.

Methodology

This article adopts a conceptual review design, an approach suited to synthesizing and theorizing across a body of empirical and conceptual literature rather than generating new primary data. Conceptual reviews are appropriate when a field is still emerging and dispersed across disciplinary boundaries, as is the case with scholarship on artificial intelligence (AI) in Islamic higher education, which spans Islamic studies, educational technology, and higher-education policy research.

The literature underlying this review was identified through a structured search of Scopus, Google Scholar, and DOAJ (Directory of Open Access Journals), using combinations of the keywords "artificial intelligence," "Islamic education," "Islamic higher education," "Qur'anic learning," "religious question-answering," and "Maqasid al-Shari'ah," restricted to publications from 2020 to 2025 to capture the recent acceleration of generative-AI-related scholarship. The initial search returned approximately 85 records. After removing duplicates and screening titles and abstracts for direct relevance to AI adoption, ethics, or governance within Islamic higher education specifically, rather than AI in education generally or Islamic education without a technological dimension, 41 records were retained for full-text review. Of these, 24 studies, comprising empirical, conceptual, and review articles, met the inclusion criteria of (a) explicit engagement with AI

applications or discourse in an Islamic higher-education or Islamic-studies context, (b) publication in a peer-reviewed journal, edited volume, or indexed conference proceeding, and (c) availability in English. These 24 studies form the empirical and conceptual basis for the thematic synthesis presented in the following section.

The included literature was analyzed using thematic synthesis, an approach suited to conceptual reviews that aims to identify recurring analytical categories across heterogeneous sources rather than to aggregate statistical effect sizes. Three superordinate themes were inductively identified during this process and are used to organize the Results and Discussion section that follows: (1) the pedagogical opportunities AI affords Islamic higher education, (2) the epistemic and ethical risks it introduces, and (3) the governance frameworks proposed to reconcile the two. Where the discussion below reports findings on which the reviewed literature converges, this is presented and cited as such; where the article moves beyond the reviewed literature to advance an original synthesis, most notably the "beyond automation" orientation developed in the final subsection of the discussion, this is explicitly identified as the authors' conceptual contribution rather than attributed to cited sources.

Results and Discussion

Literature Review and Theoretical Framework

AI Adoption in Islamic Higher Education: An Emerging Field

Scholarship on AI in Islamic higher education has expanded quickly since 2023, tracking the broader growth of generative AI research in education. Bibliometric analyses of this literature show a marked increase in publications from 2023 onward, concentrated in Indonesia, Malaysia, and parts of the Middle East and North Africa, and clustered around themes of student acceptance, Qur'anic learning technologies, and ethical governance (Faizin et al., 2025; related bibliometric reviews of Islamic education research). Much of this literature is empirical and institution-specific, examining a single university or a single application, such as an AI-based Qur'an memorization aid or an interactive learning medium for Islamic religious education.

Several studies converge on the finding that AI is most readily accepted by students and instructors when it functions as a study aid rather than as a source of religious rulings. Using an extended Technology Acceptance Model, Faizin et al. (2025) found that perceived ease of use and perceived usefulness strongly predicted Indonesian Muslim students' attitudes toward AI tools in Islamic religious education, and that positive attitudes were associated with a desire for AI systems that are explicitly adaptive to Islamic values and ethics rather than religiously neutral by default. Complementary survey research on undergraduate readiness has found that while students report reasonably high awareness of AI's academic uses, they show comparatively low confidence in judging the accuracy or bias of AI-generated content, particularly on sensitive subject matter (student awareness studies in Islamic higher education, 2025).

Opportunities, Challenges, and Ethics as a Recurring Triad

A recurring structure across this literature is the framing of AI in Islamic education around three poles: opportunities, challenges, and ethics. Achruh et al. (2024), studying Indonesian Islamic higher education institutions, describe AI adoption as offering genuine pedagogical benefits, including personalized learning pathways and improved access to reference material, while simultaneously straining traditional Islamic pedagogy, which has historically centered the teacher as a moral exemplar rather than merely an information source. Similar conclusions appear in Nigerian higher education research, where AI is

credited with the potential to widen access to Islamic Studies instruction while raising concerns about cultural sensitivity and data governance (Aliyu, 2025).

Ethical scrutiny in this literature tends to focus on three risks. First is the risk of algorithmic bias in religious content: comparative evaluations of AI systems answering religious questions have documented inconsistent, and at times doctrinally questionable, responses across different models and languages (Al-Badani & Alsubari, 2024). Second is the risk of misapplied jurisprudential reasoning, since AI systems trained on heterogeneous text can blend interpretive positions from different legal schools without signaling the disagreement (*ikhtilaf*) that Islamic legal scholarship treats as significant; Al-Momani (2025) frames this as a distinct ethical challenge for using AI in understanding Islamic jurisprudence, given that classical *fiqh* reasoning depends on context, scholarly lineage, and situational judgment that current systems do not reliably represent. Third is the risk of eroded epistemic accountability, in which students defer to AI-generated answers without the verification practices historically expected of a Islamic knowledge seeker (*talib al-'ilm*).

Toward a Distinctly Islamic Conceptual Lens: Ta'dib, Adab, and Maqasid al-Shari'ah

A smaller but conceptually significant strand of this literature moves beyond empirical acceptance studies to ask what an authentically Islamic response to AI should look like, rather than only how existing tools are perceived. This strand draws on classical Islamic educational philosophy, particularly the *ta'lim-ta'dib* distinction associated with reformist Islamic educational thought, and on Jasser Auda's systems-based reading of *Maqasid al-Shari'ah* as an analytical lens for evaluating modern institutions. Recent conceptual work in this vein argues that generative AI poses an ontological challenge to Islamic education because it risks reducing learning to data consumption and diminishing the teacher's spiritual authority, and proposes reconstructing Islamic pedagogy around *adab*, situating concepts such as *tabayyun* (critical verification), *amanah* (trustworthiness), and *hikmah* (wisdom) as the interpretive filters through which AI-generated content should be evaluated (conceptual philosophical reviews of AI and *adab* in Islamic education, 2025).

Taken together, this literature suggests that the central theoretical task for Islamic higher education is not to decide whether to adopt AI, since adoption is already underway among students regardless of institutional policy, but to define the conditions under which AI use remains compatible with the aims of Islamic education. This article adopts that framing and organizes the discussion that follows around opportunities, risks, and the governing ethical framework needed to reconcile the two.

Opportunities: Where AI Strengthens Islamic Higher Education

The clearest opportunities documented in the literature cluster around access, personalization, and language support. AI-based interactive learning media have been developed to improve student comprehension of Islamic religious education content, adapting explanations to different learning paces and providing immediate formative feedback that a single instructor cannot always provide across a large cohort. Qur'an memorization support tools represent a second area of opportunity, with exploratory studies reporting that AI applications can assist recitation accuracy and repetition scheduling, functioning as a supplementary aid alongside, rather than instead of, a qualified *huffaz* or teacher (Ab Alim et al., 2025). Arabic and religious-text language processing tools similarly extend access for non-native Arabic speakers engaging with primary Islamic texts, lowering one barrier to direct engagement with scripture and classical commentary.

A further opportunity lies in research and scholarly production. AI-assisted literature synthesis, translation, and reference management can shorten the time Islamic studies researchers spend on lower-order tasks, potentially freeing capacity for the interpretive and jurisprudential work that requires human scholarly judgment. Several studies frame this as an opportunity specifically for institutions in lower-resource settings, where AI tools can partially offset shortages of specialized instructors or reference materials (Aliyu, 2025).

Risks: Where Automation Strains Islamic Epistemology

The risks identified in the literature are not simply technical limitations that will resolve with better models; several are structural tensions between how generative AI operates and how Islamic knowledge has traditionally been authenticated. Classical Islamic scholarship relies on *isnad*, the traceable chain of transmission linking a piece of knowledge back through recognized scholars, as a mechanism of accountability. Generative AI systems, by contrast, synthesize plausible text without an equivalent chain of accountable transmission, which means a confident-sounding answer to a jurisprudential question may carry no more epistemic warrant than a well-phrased guess. Evaluations of AI systems answering religious questions have found measurable inconsistency and bias across models, underscoring that fluency is not equivalent to doctrinal reliability (Al-Badani & Alsubari, 2024).

A second risk concerns the flattening of legitimate scholarly disagreement. Islamic jurisprudence has historically treated *ikhtilaf*, differences among recognized schools of law, as a feature of a mature legal tradition rather than a defect to be resolved. Al-Momani (2025) argues that AI systems risk presenting a single synthesized answer where multiple valid positions exist, obscuring the interpretive plurality that Islamic legal education is meant to cultivate in students. A third risk, documented in student readiness studies, is that learners report low confidence in evaluating AI outputs for accuracy or bias, which suggests that even well-designed tools can be misused if institutions do not simultaneously build students' critical AI literacy (student readiness and awareness studies, 2025). Finally, data privacy and governance concerns recur across this literature, particularly where AI platforms process sensitive religious queries or student data without clear institutional oversight (Achruh et al., 2024).

Governing the Transition: An Ethical and Institutional Framework

The literature converges on the view that these risks are best addressed through explicit ethical governance rather than blanket restriction or unregulated adoption. *Maqasid al-Shari'ah* offers Islamic higher education a ready-made evaluative framework, since it asks of any institutional practice whether it protects and advances recognized higher objectives, including the preservation of religion (*hifz al-din*), intellect (*hifz al-'aql*), and lineage or communal continuity (*hifz al-nasl*), among others. Applied to AI, this framework suggests that tools should be evaluated not only for instructional efficiency but for whether they strengthen or weaken students' capacity for sound religious reasoning and independent verification.

Operationally, several recommendations recur across the reviewed studies. First, institutions should position AI explicitly as a supplementary tool for religious content, with mandatory human scholarly verification before AI-generated material on *fiqh*, *aqidah*, or *tafsir* is used in instruction (Al-Momani, 2025). Second, AI literacy, understood specifically as the capacity to evaluate AI outputs for bias and doctrinal reliability, should be integrated into Islamic studies curricula rather than treated as a generic digital-skills add-on, addressing the confidence gap documented in student readiness research. Third, institutions should adapt or select AI systems that are demonstrably tuned to Islamic values rather than defaulting to religiously generic tools, a preference students themselves have

expressed (Faizin et al., 2025). Fourth, governance structures should preserve the teacher's role as the final interpretive authority and moral exemplar, ensuring that AI augments the ta'lim component of instruction while leaving ta'dib, the formation of character and adab, anchored in human relationship.

Beyond Automation: Reframing AI as Augmentation, Not Replacement

Synthesizing the preceding sections, this article proposes "beyond automation" as an organizing orientation for Islamic higher education's engagement with AI. This orientation is presented as the article's own conceptual contribution: it is synthesized from recurring patterns across the reviewed literature rather than a position advanced verbatim by any single cited source, and it is offered here as an interpretive frame for the field rather than as an empirical finding. Automation, in the narrow sense of substituting machine output for human judgment, is an inadequate frame for institutions whose core mission includes spiritual and ethical formation. A more adequate frame treats AI as an augmentation layer: capable of extending access, personalizing instruction, and accelerating research support, while remaining subordinate to human scholarly authority, communal verification practices, and the teacher-student relationship that Islamic educational philosophy has long regarded as indispensable. Under this framing, the measure of successful AI integration in Islamic higher education is not adoption rate but whether adoption strengthens, rather than substitutes for, the isnad-based culture of verification and the mentorship-based culture of character formation that distinguish Islamic education from generic instruction.

Conclusion and Recommendations

Artificial intelligence is already present in Islamic higher education, whether or not institutions have formally authorized it, and the relevant policy question is no longer whether to engage with it but how to do so without eroding the epistemic and ethical foundations of Islamic scholarship. Consistent with the "beyond automation" orientation developed in the preceding discussion, this conclusion treats that question as one of augmentation rather than substitution. The reviewed literature indicates genuine opportunities in accessibility, personalization, and research support, alongside structural risks concerning doctrinal reliability, the flattening of legitimate scholarly disagreement, and gaps in students' capacity to evaluate AI-generated religious content. A Maqasid-al-Shari'ah-informed governance approach, combined with explicit curricular attention to AI literacy and a firm institutional commitment to preserving the teacher's interpretive and moral authority, offers a workable path forward.

For institutional leaders, this suggests prioritizing policy frameworks that mandate human verification of AI-generated religious content before instructional use. For curriculum designers, it suggests embedding critical AI evaluation skills directly within Islamic studies coursework rather than as a separate digital-literacy module. For researchers, it suggests a continued need for empirical study of how AI use affects students' spiritual formation and independent reasoning over time, since most existing studies remain cross-sectional and adoption-focused rather than longitudinal. Future research would benefit from comparative studies across different Islamic higher education systems and from deeper engagement with classical Islamic educational philosophy as a source of evaluative criteria, ensuring that the future of Islamic education in the age of AI remains oriented around ta'dib rather than reduced to automated ta'lim.

References

- Ab Alim, N. N. A., Wahid, K., Abd Zamani, S. N. H., & Adenan, F. (2025). Artificial intelligence as a support tool for Quran memorization: An exploratory study on the potential use of AI

- applications among non-Islamic studies students. *Quranica*, 17(2), 157–186. <https://doi.org/10.22452/quranica.vol17no2.7>
- Abdelgelil, M. F. M., Tahir, B. S., & Bidin, S. N. B. S. (2025). Challenges of artificial intelligence (AI) and its impact on Qur'anic qira'at: A thematic review analysis. *Quranica*, 17(2), 74–96. <https://doi.org/10.22452/quranica.vol17no2.4>
- Abubakari, M. S., Shafik, W., & Hidayatullah, A. F. (2024). Evaluating the potential of artificial intelligence in Islamic religious education: A SWOT analysis overview. In Z. E. Ahmed, A. A. Hassan, & R. A. Saeed (Eds.), *AI-enhanced teaching methods* (pp. 216–239). IGI Global Scientific Publishing. <https://doi.org/10.4018/979-8-3693-2728-9.ch010>
- Achruh, A., Rapi, M., Rusdi, M., & Idris, R. (2024). Challenges and opportunities of artificial intelligence adoption in Islamic education in Indonesian higher education institutions. *International Journal of Learning, Teaching and Educational Research*, 23(11), 423–443. <https://doi.org/10.26803/ijlter.23.11.21>
- Adiyono, A., Suwartono, T., Nurhayati, S., Dalimarta, F. F., & Wijayanti, O. (2025). Impact of artificial intelligence on student reliance for exam answers: A case study in IRCT Indonesia. *International Journal of Learning, Teaching and Educational Research*, 24(3), 455–479. <https://doi.org/10.26803/ijlter.24.3.22>
- Al-Badani, G., & Alsubari, A. (2024). Evaluating artificial intelligence bias in answering religious questions. In 2024 4th International Conference on Emerging Smart Technologies and Applications (eSmarTA) (pp. 1–7). IEEE. <https://doi.org/10.1109/eSmarTA62850.2024.10638857>
- Al-Momani, I. (2025). Ethical challenges for using artificial intelligence in understanding Islamic jurisprudence. *Salud, Ciencia y Tecnología - Serie de Conferencias*, 4, 1519. <https://doi.org/10.56294/sctconf20251519>
- Aliyu, Y. (2025). The role of artificial intelligence (AI) in enhancing teaching/learning Islamic studies in higher institutions in Nigeria. *SHADAI: Journal of Contemporary Research in Humanities*. <https://www.researchgate.net/publication/390835812>
- Amilusholihah, A., & Ramadhan, N. J. H. (2025). Exploring the implementation of artificial intelligence in Islamic education: A systematic literature review. *Ngaji: Jurnal Pendidikan Islam*, 5(1), 95. <https://doi.org/10.24260/ngaji.v5i1.95>
- Auda, J. (2008). *Maqasid al-Shari'ah as philosophy of Islamic law: A systems approach*. International Institute of Islamic Thought (IIIT).
- Faizin, N., Alfian, M., Basid, A., Ramadhan, M. R., Panatik, S. A., & Kawakip, A. N. (2025). Muslim students' acceptance of artificial intelligence in Islamic religious education: An extended TAM approach. *Discover Education*, 4(1), Article 304. <https://doi.org/10.1007/s44217-025-00767-1>
- Kabudi, T., Pappas, I., & Olsen, D. H. (2021). AI-enabled adaptive learning systems: A systematic mapping of the literature. *Computers and Education: Artificial Intelligence*, 2, 100017. <https://doi.org/10.1016/j.caeai.2021.100017>
- Nasir, K., Zaman, R. K., Hilmi, A. B. A., Mahadzir, A. H., & Mustaffa, A. M. B. (2025). Artificial intelligence integration in mobile applications: Innovation and challenges in supporting Quran memorization and review. *Quranica*, 17(2), 612–645. <https://doi.org/10.22452/quranica.vol17no2.24>
- Nirwana, A. N. A., Rifai, A., Ali, M., Mustofa, T. A., Vambudi, N., Maksum, M. N. R., & Budihargo, M. U. (2025). SWOT analysis of AI integration in Islamic education: Cognitive, affective, and psychomotor impacts. *Qubahan Academic Journal*, 5(1), 476–503. <https://doi.org/10.48161/qaj.v5n1a1498>