

Islamic Education: Examining AI Use, Reliance, and Perceived Validity among Tarbiyah Students

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ABSTRACT

The growing use of generative artificial intelligence (AI) in higher education raises an important question about whether students' practical reliance on AI is accompanied by confidence in the credibility of AI-generated information. This study examines patterns of AI use and perceived validity of AI-generated answers among students in the Faculty of Tarbiyah and considers their implications for AI literacy in Islamic education. Using a descriptive quantitative survey design, data were collected from 18 students at Pemalang Islamic Religious Institute and analyzed using frequencies and percentages. The analysis focused on three indicators for which complete respondent-level data were available: frequency of AI use, preference for AI-generated versus self-generated academic answers, and perceived validity of AI-generated answers. The findings show that 14 students (77.8%) reported using AI often and the same proportion indicated greater reliance on AI-generated academic answers, whereas four students (22.2%) reported rare AI use and greater reliance on their own answers. Notably, all respondents (100%) expressed uncertainty about the validity of AI-generated answers. These findings reveal a descriptive gap between practical reliance and epistemic confidence: frequent use of AI does not necessarily imply that students regard its outputs as authoritative or reliable knowledge. In the context of Islamic education, this pattern underscores the need to conceptualize AI literacy beyond technical proficiency by incorporating critical evaluation, source awareness, information verification, and epistemic responsibility. Given the small sample and descriptive design, the findings are limited to the surveyed group and do not establish causal relationships or learning effectiveness.

ABSTRAK

Meningkatnya penggunaan kecerdasan buatan generatif (AI) dalam pendidikan tinggi memunculkan persoalan penting mengenai apakah ketergantungan praktis mahasiswa terhadap AI disertai dengan keyakinan terhadap kredibilitas informasi

Kata Kunci:

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yang dihasilkannya. Penelitian ini mengkaji pola penggunaan AI dan persepsi terhadap validitas jawaban yang dihasilkan AI pada mahasiswa Fakultas Tarbiyah serta implikasinya terhadap literasi AI dalam pendidikan Islam. Penelitian menggunakan desain survei kuantitatif deskriptif dengan melibatkan 18 mahasiswa Institut Agama Islam Pematang. Data dianalisis menggunakan frekuensi dan persentase dengan berfokus pada tiga indikator yang memiliki data responden lengkap, yaitu frekuensi penggunaan AI, preferensi terhadap jawaban akademik yang dihasilkan AI dibandingkan jawaban sendiri, dan persepsi terhadap validitas jawaban yang dihasilkan AI. Hasil penelitian menunjukkan bahwa 14 mahasiswa (77,8%) sering menggunakan AI dan proporsi yang sama lebih mengandalkan jawaban akademik yang dihasilkan AI, sedangkan empat mahasiswa (22,2%) jarang menggunakan AI dan lebih mengandalkan jawaban mereka sendiri. Menariknya, seluruh responden (100%) menyatakan ketidakpastian terhadap validitas jawaban yang dihasilkan AI. Temuan ini menunjukkan adanya kesenjangan deskriptif antara ketergantungan praktis dan keyakinan epistemik: tingginya penggunaan AI tidak serta-merta menunjukkan bahwa mahasiswa memandang keluarannya sebagai pengetahuan yang otoritatif atau dapat dipercaya. Dalam konteks pendidikan Islam, pola tersebut menegaskan perlunya memaknai literasi AI melampaui kecakapan teknis dengan memasukkan kemampuan evaluasi kritis, kesadaran terhadap sumber, verifikasi informasi, dan tanggung jawab epistemik. Mengingat ukuran sampel yang kecil dan desain penelitian yang bersifat deskriptif, temuan penelitian terbatas pada kelompok yang disurvei dan tidak dimaksudkan untuk menunjukkan hubungan kausal maupun efektivitas pembelajaran.

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INTRODUCTION

The rapid spread of generative artificial intelligence (GenAI) is changing how university students find information, formulate ideas, draft academic texts, and approach problem-solving. Unlike earlier educational technologies that mainly delivered or organized existing material, generative systems can produce explanations, summaries, examples, and answers in response to natural-language prompts. This convenience makes AI attractive for academic work, but fluent output can also appear more authoritative than the evidence supporting it. The

educational issue, therefore, is not simply whether students use AI, but how they incorporate it into reasoning and how they judge the information it produces.¹²³

Recent higher-education research shows that students use GenAI for information seeking, academic writing, learning assistance, and other forms of study support, while concerns remain about accuracy, academic integrity, trust, and responsible use. These findings suggest that usefulness and reliability should be treated as distinct dimensions. A student may value AI because it is fast and accessible without assuming that every generated statement is correct. The distinction becomes particularly important when an AI-generated answer is used as the basis for further academic work.⁴⁵⁶

AI literacy provides a useful framework for this distinction. It involves more than operating a chatbot or producing effective prompts; it also includes

¹ Inmaculada García-Martínez et al., “Analysing the Impact of Artificial Intelligence and Computational Sciences on Student Performance: Systematic Review and Meta-Analysis,” *Journal of New Approaches in Educational Research* 12, no. 1 (January 15, 2023): 171–97, <https://doi.org/10.7821/naer.2023.1.1240>; Fenglin Jia et al., “Developing an AI-Based Learning System for L2 Learners’ Authentic and Ubiquitous Learning in English Language,” *Sustainability* 14, no. 23 (November 22, 2022): 15527, <https://doi.org/10.3390/su142315527>; Ana López-Martínez et al., “Using Gamified Strategies in Higher Education: Relationship between Intrinsic Motivation and Contextual Variables,” *Sustainability* 14, no. 17 (September 3, 2022): 11014, <https://doi.org/10.3390/su141711014>.

² Ning Wang and James Lester, “K-12 Education in the Age of AI: A Call to Action for K-12 AI Literacy,” *International Journal of Artificial Intelligence in Education* 33, no. 2 (June 20, 2023): 228–32, <https://doi.org/10.1007/s40593-023-00358-x>.

³ Olivia Andrei, “Enhancing Religious Education through Emotional and Spiritual Intelligence,” *HTS Theologiese Studies / Theological Studies* 78, no. 1 (December 19, 2022), <https://doi.org/10.4102/hts.v78i1.7887>; Wang and Lester, “K-12 Education in the Age of AI: A Call to Action for K-12 AI Literacy”; Tjorven Stamer, Jost Steinhäuser, and Kristina Flägel, “Artificial Intelligence Supporting the Training of Communication Skills in the Education of Health Care Professions: Scoping Review,” *Journal of Medical Internet Research* 25 (June 19, 2023): e43311, <https://doi.org/10.2196/43311>.

⁴ Gizéh Rangel-de Lázaro and Josep M. Duart, “You Can Handle, You Can Teach It: Systematic Review on the Use of Extended Reality and Artificial Intelligence Technologies for Online Higher Education,” *Sustainability* 15, no. 4 (February 14, 2023): 3507, <https://doi.org/10.3390/su15043507>; Francesco Sovrano and Fabio Vitali, “Explanatory Artificial Intelligence (YAI): Human-Centered Explanations of Explainable AI and Complex Data,” *Data Mining and Knowledge Discovery* 38, no. 5 (September 10, 2024): 3141–68, <https://doi.org/10.1007/s10618-022-00872-x>; Wang and Lester, “K-12 Education in the Age of AI: A Call to Action for K-12 AI Literacy.”

⁵ García-Martínez et al., “Analysing the Impact of Artificial Intelligence and Computational Sciences on Student Performance: Systematic Review and Meta-Analysis”; Randi Williams et al., “AI + Ethics Curricula for Middle School Youth: Lessons Learned from Three Project-Based Curricula,” *International Journal of Artificial Intelligence in Education* 33, no. 2 (June 1, 2023): 325–83, <https://doi.org/10.1007/s40593-022-00298-y>; Daniel Schiff, “Out of the Laboratory and into the Classroom: The Future of Artificial Intelligence in Education,” *AI & SOCIETY* 36, no. 1 (March 9, 2021): 331–48, <https://doi.org/10.1007/s00146-020-01033-8>.

⁶ Weiqi Xu and Fan Ouyang, “The Application of AI Technologies in STEM Education: A Systematic Review from 2011 to 2021,” *International Journal of STEM Education* 9, no. 1 (September 19, 2022): 59, <https://doi.org/10.1186/s40594-022-00377-5>.

understanding system limitations, evaluating generated outputs, recognizing when corroboration is needed, and making responsible decisions about AI use. Walter emphasizes the relevance of AI literacy and critical thinking in educational settings. Thus, frequency of AI use should not be treated as a proxy for competence or trust. Students may use AI frequently while still requiring stronger evaluative capacity.⁷⁸

Previous research has examined these issues from several complementary perspectives. Athanassopoulos et al. reported varied academic uses of GenAI among teacher-education students, including information seeking, data analysis, study advice, and exam preparation. Henderson et al. found that GenAI was valued for access and speed, while lecturer feedback remained more trusted. Kim et al. identified efficiency and academic support alongside concerns about output quality and academic integrity. Ferrara's conceptual analysis highlights the risk that synthetic information can complicate trust and verification, while Almajdoub et al. show that AI may support Qur'anic education but requires attention to accuracy, authenticity, verification, and supervision.

Table 1. Previous Research on AI in Higher Education

Author	Title	Research Focus	Method	Key findings	Limitations/G AP
Athanassopoulos et al. ⁹	Teacher Education Students' Practices, Benefits, and Challenges in the Use of Generative AI Tools in Higher Education	Practice of using GenAI for teacher education students	Mixed methods	GenAI is widely used for information retrieval, data analysis, study advice, and exam preparation.	Not yet specific to Islamic education students and verification practices
Henderson et al. ¹⁰	Comparing Generative AI	Perceptions of GenAI	Thematic surveys	Lecturers are more trusted;	Have not reviewed student

⁷ Margaret Bearman, Juliana Ryan, and Rola Ajjawi, "Discourses of Artificial Intelligence in Higher Education: A Critical Literature Review," *Higher Education* 86, no. 2 (August 24, 2023): 369–85, <https://doi.org/10.1007/s10734-022-00937-2>; Eleni Dimitriadou and Andreas Lanitis, "A Critical Evaluation, Challenges, and Future Perspectives of Using Artificial Intelligence and Emerging Technologies in Smart Classrooms," *Smart Learning Environments* 10, no. 1 (February 6, 2023): 12, <https://doi.org/10.1186/s40561-023-00231-3>; Wang and Lester, "K-12 Education in the Age of AI: A Call to Action for K-12 AI Literacy."

⁸ Jakub Akonom, "The Pastoral Activity of the Church in Poland in Virtual Space," *Collectanea Theologica* 92, no. 4 (December 23, 2022): 139–67, <https://doi.org/10.21697/ct.2022.92.4.05>; Kirk A. Bingaman, "Religion in the Digital Age: An Irreversible Process," *Religions* 14, no. 1 (January 12, 2023): 108, <https://doi.org/10.3390/rel14010108>.

⁹ Stavros Athanassopoulos et al., "Teacher Education Students' Practices, Benefits, and Challenges in the Use of Generative AI Tools in Higher Education," 2026, 1–15.

¹⁰ Michael Henderson et al., "Assessment & Evaluation in Higher Education Comparing Generative AI and Teacher Feedback: Student Perceptions of Usefulness and Trustworthiness

	and teacher feedback: student perceptions of usefulness and trustworthiness	and lecturer feedback	and analysis	GenAI excels in access and speed	information verification practices
Kim, J., Yu, S., Detrick, R., & Li, N. ¹¹	Exploring students' perspectives on Generative AI- assisted academic work	Students' perspectives on GenAI- assisted academic work	Quantitat ive surveys	Efficiency and academic support, but there are quality and integrity concerns.	Not yet specific in the context of Islamic education
Ferrara, E. ¹²	The Generative AI Paradox: GenAI and the Erosion of Trust, the Corrosion of Information Verification, and the Demise of Truth	Trust and verification of information in the GenAI era	Conceptu al/viewp oint	GenAI has the potential to erode trust in digital evidence	Has not been empirically tested on college students
Almajdoub, Z., Fidalgo, P., Aramamneh, Y., AlHakmani , R., & Kasasbeh, N. ¹³	Artificial intelligence in Qur'anic education: pedagogical promise, practical challenges, and ethical concerns	AI in Qur'an education	Explorat ory Qualitativ e	AI is beneficial for learning but requires verification and supervision	Focus on teachers in the UAE; have not mapped student perceptions and practices

A further interpretive lens is cognitive offloading. Students routinely distribute cognitive work across external tools such as notes, calculators, search engines, and reference managers. GenAI extends this process by helping with interpretation, drafting, summarization, and answer construction. Recent research on AI-based cognitive offloading among university students indicates that students differ in how much cognitive work they delegate to AI and that evaluation capability matters when considering the consequences of such

Comparing Generative AI and Teacher Feedback : Student,” *Assessment & Evaluation in Higher Education* 51, no. 5 (2026): 863–78, <https://doi.org/10.1080/02602938.2025.2502582>.

¹¹ Jinhee Kim et al., *Exploring Students' Perspectives on Generative AI - Assisted Academic Writing*, 2025, <https://doi.org/10.1007/s10639-024-12878-7>.

¹² Emilio Ferrara, “The Generative AI Paradox : GenAI and the Erosion of Trust , the Corrosion of Information Verification , and the Demise of Truth,” 2026, 1–18.

¹³ Zaid Almajdoub, Patricia Fidalgo, and Yahia Alramamneh, “Artificial Intelligence in Qur'anic Education : Pedagogical Promise , Practical Challenges , and Ethical Concerns,” no. June (2026), <https://doi.org/10.3389/feduc.2026.1876380>.

delegation. This study does not measure cognitive offloading directly; the concept is used only to interpret how practical reliance on AI may coexist with uncertainty about output validity.¹⁴

Taken together, the literature indicates that GenAI has become a practical educational resource while leaving important questions about credibility and evaluation. Existing studies have examined use, perceived usefulness, trustworthiness, academic integrity, and AI in religious education, but the present study focuses on how practical AI reliance and perceived validity appear together in a specific Faculty of Tarbiyah context. The contribution is intentionally descriptive: it identifies a pattern in the surveyed group and interprets that pattern through AI literacy, epistemic trust, and cognitive offloading without treating these concepts as measured variables.

METHODS

This study used a descriptive quantitative survey design, since the aim was to describe respondents' patterns of AI use and their perceptions of AI-generated information rather than to test effectiveness or causal relationships.¹⁵ The sample included 18 students from the Faculty of Tarbiyah at Pemalang Islamic Religious Institute. The study record identifies these 18 respondents but does not document a probabilistic sampling procedure or formal inclusion criteria. The questionnaire covered three indicators: how often students used AI in academic work, whether they preferred AI-generated answers to their own, and how valid they judged AI-generated answers to be. The original questionnaire included more items, including verification questions, but complete respondent-level records for those were not retained. Only the three indicators with traceable data are included in this analysis. Responses are summarized as frequencies and percentages, limited to the indicators for which tabulated data exist. Where a numerical code was needed, the four response categories (Very Often, Often, Rarely, Never) were coded 4 through 1. The three indicators reported in the Results section come from this documented tabulation and chart data. Validity and reliability are handled conservatively.¹⁶ The research record contains no formal expert-rating dataset, no Aiken's V, no content-validity index, and no other statistical validity coefficient, so none is reported. Complete respondent-by-item data were not retained either, so Cronbach's alpha and corrected item-total correlations cannot be validly recalculated. That gap is noted as a limitation; no substitute numbers are supplied to fill it. Any replication should preserve the full item-level dataset and carry out expert review and internal-consistency testing before using the

¹⁴ Martin McKee and Olivier J. Wouters, "The Challenges of Regulating Artificial Intelligence in Healthcare Comment on 'Clinical Decision Support and New Regulatory Frameworks for Medical Devices: Are We Ready for It? - A Viewpoint Paper,'" *International Journal of Health Policy and Management*, September 19, 2022, <https://doi.org/10.34172/ijhpm.2022.7261>.

¹⁵ Sugiyono, *Quantitative, Qualitative, and R&D Research Methods* (Bandung: Alfabeta, 2019).

¹⁶ Jonathan Sarwono, *Metode Penelitian Kualitatif & Kuantitatif* (YOGYAKARTA: Graha Ilmu, 2006).

instrument for broader inference. Data came from the questionnaire and are summarized descriptively, with percentages calculated from the 18 respondents for the indicators reported in the Results section. No regression, significance testing, pre-test/post-test comparison, control group, treatment, or causal inference is used.¹⁷ The analysis describes response tendencies within the surveyed group; it does not establish learning effectiveness, statistical significance, or causality.¹⁸

RESULTS

Results are reported as descriptive frequencies and percentages for the 18 respondents. The interpretation treats this study's survey findings separately from prior research; frequency of AI use is not treated as evidence of learning effectiveness.

Table 2. Descriptive Results of AI Use and Perceived Validity

Indicator	Response Category	n	%
AI use frequency	Very often	0	0.0%
	Often	14	77.8%
	Rarely	4	22.2%
	Never	0	0.0%
Academic-answer preference	Use AI more	14	77.8%
	More self-answer	4	22.2%
	Total	18	100.0%
Perceived validity of AI-generated answers	Confident	0	0.0%
	Very confident	0	0.0%
	Unsure	18	100.0%
	Total	18	100.0%

Table 2 consolidates the descriptive results. Fourteen of the 18 respondents (77.8%) reported using AI often, and 4 (22.2%) reported using it rarely; no respondent selected Very Often or Never. On the academic-answer preference item, 14 respondents (77.8%) said they rely more on AI, while 4 (22.2%) said they rely more on their own answers. All 18 respondents (100.0%) were unsure about the validity of AI-generated answers, and none reported confidence or very high confidence. These figures describe response tendencies within the surveyed group; they do not indicate learning effectiveness or the objective accuracy of AI outputs.

The Results section reports the three indicators for which respondent-level tabulated data were available: AI use frequency, academic-answer preference, and perceived validity of AI-generated answers. These are consolidated in one table to avoid duplication between tables and figures.

DISCUSSION

¹⁷ J. W. Creswell, *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research* (Boston: Pearson, 2012).

¹⁸ B. Bungin, *Quantitative Research Methodology: Communication, Economics, and Public Policy and Other Social Sciences* (Jakarta: Kencana, 2017).

AI Use and Academic-Answer Preference

The first interpretive point is that AI seems to have become an ordinary part of academic work for this group, not a marginal technology. That does not mean students have replaced their own reasoning with AI. The data show how often students use it and that they prefer AI-generated answers on the relevant item, but they do not show what happens cognitively behind each response. One student might use AI to generate alternatives, clarify a concept, organize an argument, or draft something and then revise it. Another might accept a generated answer with barely any changes.¹⁹ The questionnaire cannot tell these apart. So the safest reading is that AI has a real place in students' academic work, while how deeply and carefully they engage with its output stays an open question.

This fits with broader research on how students use GenAI for a range of academic purposes. Athanassopoulos et al. found uses well beyond writing, including information seeking, analysis, study advice, and preparation. Kim et al. similarly found that students see GenAI-assisted work as efficient and supportive, while still flagging concerns about quality and integrity.²⁰ Other research on university students suggests that AI competence and how much value students place on AI can shape their actual patterns of use. All of this points to why frequent use should not just be read as enthusiasm. AI can be appealing simply because it lowers the effort needed to start or finish a task, especially when students are pressed for time or unsure how to begin.

In Islamic education, this distinction matters because producing an academic answer is only part of learning. The goal also includes building the capacity to interpret, justify, compare, and evaluate claims. If AI is mainly a starting point or an aid to thinking, it can sit alongside those goals fine. But if the generated response replaces the student's own evaluation, the task means something different educationally. This data cannot say which pattern is more common. What it does is give a reasonable basis for asking whether students are being prepared not just to operate AI systems, but to exercise judgment over what those systems produce.²¹

The Gap Between AI Use and Perceived Validity

The main finding is a gap between how much students rely on AI and how much they trust it. Students reported using AI fairly often, and their preference for AI-generated answers followed the same pattern, but when asked how valid they judged those answers to be, most were uncertain. High reliance doesn't come with high confidence. That isn't a contradiction; use and trust are simply separate

¹⁹ Kim et al., *Exploring Students' Perspectives on Generative AI - Assisted Academic Writing*.

²⁰ Muhammad Anshari et al., "COVID-19, Artificial Intelligence, Ethical Challenges and Policy Implications," *AI & SOCIETY* 38, no. 2 (April 19, 2023): 707–20, <https://doi.org/10.1007/s00146-022-01471-6>.

²¹ Schiff, "Out of the Laboratory and into the Classroom: The Future of Artificial Intelligence in Education"; Dimitriadou and Lanitis, "A Critical Evaluation, Challenges, and Future Perspectives of Using Artificial Intelligence and Emerging Technologies in Smart Classrooms."

things. A tool can be worth using because it's fast and generative even while its output still needs checking.²²

This matters because education researchers sometimes read a student's willingness to use AI as a sign they think it's accurate. This study's pattern pushes back on that. Students can find a system useful and still treat its answers as uncertain. Henderson et al.'s comparison of GenAI and teacher feedback makes a related point: usefulness, accessibility, and trustworthiness don't have to move together. Ferrara's work on the generative-AI paradox describes something similar, since trust and verification are hard to hold steady once synthetic content is produced at this scale. This study cannot test any of that causally, but its descriptive pattern fits with treating utility and credibility as separate questions.²³

AI literacy is one way to explain the gap. Someone who is AI-literate knows that fluent language isn't the same as verified knowledge; a system can produce an answer without that answer being true. AI literacy therefore needs a critical-evaluative piece: knowing the system's limits, recognizing when something needs a second check, and judging when it's actually appropriate to use. Walter's work on AI literacy and critical thinking supports this, and other research on student AI competence similarly finds that competence is more than knowing how to run the tool. The uncertainty this study found around validity shouldn't be read as a direct measure of low AI literacy, since literacy itself wasn't tested here. It points instead to something AI-literacy education needs to address.²⁴

Epistemic trust is a second lens. Every time a student uses an AI-generated answer for coursework, they're making an implicit call about whether it's credible enough to build on, and that call doesn't have to be final. Provisional trust like this is ordinary in academic life: students accept a textbook, a lecture, or a search result while staying open to being wrong. What's different with GenAI is that it can produce prose that sounds authoritative without the usual signals- authorship, editorial review, source selection- that would normally back that up. Read this way, the uncertainty in the survey suggests students have at least some general sense that AI output needs qualifying. That is an interpretation of the pattern, not a direct measurement of trust as a psychological construct.²⁵

Cognitive offloading is a third angle. When a student asks AI to generate or organize an answer, some of the work of recalling, organizing, or writing shifts onto the system. Recent research on AI-based cognitive offloading in university students finds that students offload both simple and more demanding tasks, and that how well they can evaluate the output determines what that offloading

²² Kim et al., *Exploring Students' Perspectives on Generative AI - Assisted Academic Writing*.

²³ Henderson et al., "Assessment & Evaluation in Higher Education Comparing Generative AI and Teacher Feedback : Student Perceptions of Usefulness and Trustworthiness Comparing Generative AI and Teacher Feedback : Student."

²⁴ Ferrara, "The Generative AI Paradox : GenAI and the Erosion of Trust , the Corrosion of Information Verification , and the Demise of Truth."

²⁵ Jia et al., "Developing an AI-Based Learning System for L2 Learners' Authentic and Ubiquitous Learning in English Language."

actually costs them. This helps explain how reliance can rise without trust becoming absolute: a student might offload a first draft because it's faster, while still owning the decision about whether that draft is right. The risk isn't offloading itself; it's offloading paired with less evaluation, instead of freeing up effort for checking and revising.²⁶

AI literacy, epistemic trust, and cognitive offloading aren't the same thing, but they're connected. Literacy is about a learner's capacity to use AI critically; trust is about how much credibility they give an output; offloading is about how the cognitive work gets split between the learner and the tool. None of these were measured directly in this study as a validated scale; they're useful here mainly as vocabulary for why heavy AI use and low confidence can coexist. The survey doesn't claim respondents sit at some fixed level on any of these constructs; it shows a pattern that makes the constructs worth applying.²⁷

That has implications for how assessment gets designed. If students can get a fluent answer in seconds, grading only the finished product tells you almost nothing about how they evaluated what went into it. In Islamic education specifically, an assignment could instead ask students to name the sources behind an AI-assisted answer, check the claim against authoritative references, say what they kept and what they discarded, and justify the changes. None of that requires banning AI; it makes the student's evaluative work visible. The point is to shift the question from whether AI was used to whether its use came with reasoning the student can account for. That reading fits the data here, since what the survey shows is a practical-use pattern paired with uncertainty about validity, not a deficit in how well students can reason.

Information Verification as an Epistemic Requirement

The uncertainty around AI-generated validity makes verification an important educational point, but verification has to stay separate from what was actually measured. The questionnaire did include verification-related items, but complete respondent-level data for those items was not kept in the research record used for this revision. So this article is not claiming respondents verified AI outputs at any particular rate, or that verification was statistically linked to AI use; that would go beyond what the evidence supports.²⁸

Conceptually, verification is how uncertainty turns into responsible judgment. It is more than asking another AI system whether an answer is correct. In academic work, it can mean finding the source, comparing claims across credible references, checking whether a citation actually supports what it is attributed to, looking at the date and context of the evidence, and consulting

²⁶ Jia et al.

²⁷ Jinhee Kim, Hyunkyung Lee, and Young Hoan Cho, "Learning Design to Support Student-AI Collaboration: Perspectives of Leading Teachers for AI in Education," *Education and Information Technologies* 27, no. 5 (June 28, 2022): 6069–6104, <https://doi.org/10.1007/s10639-021-10831-6>.

²⁸ Ferrara, "The Generative AI Paradox: GenAI and the Erosion of Trust, the Corrosion of Information Verification, and the Demise of Truth."

lecturers or disciplinary literature when the issue is specialized. Research on university students' responsible use of ChatGPT has identified an intention to verify information as part of responsible AI use, which backs up verification's importance as a learning practice. This study can support the pedagogical relevance of verification without claiming to have measured it directly.²⁹

Verification is also a process, not a single action. A student might first spot a claim that needs checking, locate the cited or underlying source, compare the claim against that source, ask whether the source actually fits the question, then revise or drop the generated statement. In religious education, this matters more than usual, because a generated quotation, interpretation, historical claim, or legal explanation can sound plausible while lacking real attribution or context. Verification protects both academic quality and disciplinary responsibility here. Research on responsible ChatGPT use among college students treats an intention to verify as part of what responsible use looks like; this study does not measure that intention, but the comparison still strengthens the case for treating verification as a concrete practice rather than a vague warning.³⁰

For Tarbiyah students specifically, verification carries extra weight. A generated statement about Qur'anic interpretation, hadith, Islamic jurisprudence, history, or religious education should not be accepted just because it sounds fluent or confident; the real test is whether the claim traces back to credible, contextually appropriate sources. That also sidesteps a false choice between accepting AI wholesale or rejecting it wholesale. Verification is what makes selective use possible: students can use AI to brainstorm, get explanations, or draft, while still deciding for themselves which claims are solid enough to go into an academic argument. That has practical consequences. Lecturers can model a transparent verification workflow: prompt AI for an initial explanation, flag claims that need evidence, check primary or authoritative sources, compare the output against them, and note substantive corrections. Students can be asked to separate AI-generated wording from evidence-based academic claims, especially when writing about Qur'anic interpretation, hadith, Islamic law, or anything where source authority matters. The point is not to hand epistemic responsibility to the software. AI can help with brainstorming, organizing, language, or a preliminary explanation, but the student still has to decide whether a claim is actually supported.

Interpretive implications for Islamic education

²⁹ Aston Fitranta, "AKHLAK ISLAM DALAM INTERAKSI MEDIA SOSIAL: PANDUAN BERETIKA DI ERA DIGITAL," *Majalah Ilmiah Tabuah: Ta'limat, Budaya, Agama Dan Humaniora* 29, no. 2 (December 30, 2025): 159–66, <https://doi.org/10.37108/tabuah.v29i2.1909>.

³⁰ Grant Cooper, "Examining Science Education in ChatGPT: An Exploratory Study of Generative Artificial Intelligence," *Journal of Science Education and Technology* 32, no. 3 (June 22, 2023): 444–52, <https://doi.org/10.1007/s10956-023-10039-y>; Wang and Lester, "K-12 Education in the Age of AI: A Call to Action for K-12 AI Literacy"; Ying Yang et al., "Research Status and Challenges on the Sustainable Development of Artificial Intelligence Courses from a Global Perspective," *Sustainability* 15, no. 12 (June 9, 2023): 9335, <https://doi.org/10.3390/su15129335>.

This pattern also suggests AI literacy in Islamic education should be framed as an epistemic capability, not just technological familiarity. Knowing how to prompt, get a summary, or revise language makes AI easier to use, but none of that tells you whether a claim is accurate, sourced, or appropriate for the discipline.³¹ What matters is the ability to move between generating and evaluating: knowing when an AI response is a useful starting point, when a claim needs a direct source check, and when the response should just be rejected. This matters because AI output can mix correct information with incomplete explanations, loose terminology, unsupported claims, or citations that do not actually back up what they are attached to. A student who understands this can use AI without treating it as an authority.

The findings support a distinction between assistance and authority. AI can help organize an idea, surface questions, produce an outline, or clean up prose. Authority should stay with the evidence and the disciplinary standards used to weigh that evidence: in Islamic education, that means the quality of Qur'anic and hadith sources, the reliability of scholarly interpretation, historical context, and the line between description and normative religious judgment.³² An AI explanation can be a starting point for inquiry; it should not become the final basis for an academic claim just because it sounds coherent. This is also why uncertainty about validity matters pedagogically: it is productive when it drives checking and revision, and unproductive if it leads to either passive acceptance or blanket rejection.

From an Islamic-education perspective, these findings suggest that bringing AI into the classroom is not just a technology question; it is a question about how knowledge gets formed and who is responsible for it. Every respondent being uncertain about the validity of AI-generated answers suggests students may already sense generative AI's epistemic limits, even while using it often for academic work.³³ That opens space for Islamic education to build practices that connect technical competence with responsible knowledge-seeking. Instead of treating AI as either an unquestioned source or something to avoid entirely, educators can frame it as a tool whose output needs examining, comparing, and reading in context. That fits Islamic education well, since learning there was never just about acquiring information; it is also about forming attitudes toward knowledge, responsibility, and the line between reliable and unreliable claims. Seen this way, students' uncertainty is not necessarily a weakness. It can be a starting point for building epistemic awareness: helping students see AI-generated

³¹ Lisa Villarroel et al., "Implementation of the Arizona Pain and Addiction Curriculum: Findings and Implications From a Statewide Evaluation," *Frontiers in Public Health* 9 (November 19, 2021), <https://doi.org/10.3389/fpubh.2021.731016>.

³² Harikumar Pallathadka et al., "The Study of Islamic Teachings in Education: With an Emphasis on Behavioural Gentleness," *HTS Teologiese Studies / Theological Studies* 79, no. 1 (February 24, 2023), <https://doi.org/10.4102/hts.v79i1.8193>.

³³ Adnane Mokrani, "Islamic Hermeneutics of Nonviolence: Key Concepts and Methodological Steps," *Religions* 13, no. 4 (March 29, 2022): 295, <https://doi.org/10.3390/rel13040295>.

answers as provisional and understand why independent judgment still matters.³⁴ The pedagogical shift, then, is from teaching students how to operate AI tools to teaching them how to evaluate what those tools produce. That orientation could let Islamic education engage with generative AI without giving up its emphasis on intellectual responsibility and careful attention to sources.

The findings point to where future work should go next, too. A fuller study could cross-tabulate individual AI-use frequency with perceived validity, verification behavior, task type, and how much students actually revise AI-generated material. It could separate low-risk uses, such as language polishing or brainstorming, from higher-risk ones involving factual claims, disciplinary interpretation, or religious content. Validated measures of AI literacy, epistemic trust, cognitive offloading, and verification behavior would let researchers test relationships among these constructs instead of using them only as interpretive lenses.³⁵ A larger, more systematically sampled population would also allow comparisons across semesters, programs, institutions, or fields. None of this weakens what is reported here; it marks the next level of evidence needed to tell whether this pattern is local or more widely shared.

Ethical and Epistemic Implications

The findings support an epistemic reading of AI use: respondents may treat AI as a tool for acquiring and organizing information while still bearing responsibility for examining the information they receive.³⁶ This perspective is consistent with the Qur'anic principle in QS. Al-Isra' 17:36 concerning responsibility for information received and followed. In this study, the verse serves as a normative foundation for responsible information handling rather than as empirical evidence of AI effectiveness.

Wa lā taqfu mā laisa laka bihi 'ilmun, innas-sam'a wal-baṣara wal-fu'āda kullu ulā'ika kāna 'anhu mas'ulā.

“Do not follow that of which you have no knowledge. Indeed, the hearing, the sight, and the heart, all of these will be questioned.” (Qur'an 17:36).

None of this tells us whether AI produces better learning outcomes than traditional methods. What it does show is that frequent use and uncertainty about validity can coexist. That combination is exactly why verification matters as an epistemic responsibility when AI-generated information ends up in academic work. AI use in Islamic education isn't just about access to information; it's also about whether students take responsibility for examining, verifying, and appropriately using what they get.

³⁴ Fatimaturrohman Fatimaturrohman et al., “The Evolution of the Islamic Education System: A Historical Study of Madrasah and Islamic Boarding Schools in the Archipelago,” *JURNAL DA EDUCAÇÃO, CIÊNCIA E HUMANIORA (JEDUCIH)* 1, no. 2 (September 26, 2025): 60–77, <https://doi.org/10.64042/jeducih.v1i2.9>.

³⁵ Leidy Y. Flórez Gómez et al., “Technology Transfer Model for Small-Scale Farms,” *Sustainability* 15, no. 6 (March 17, 2023): 5320, <https://doi.org/10.3390/su15065320>.

³⁶ Dimitriadou and Lanitis, “A Critical Evaluation, Challenges, and Future Perspectives of Using Artificial Intelligence and Emerging Technologies in Smart Classrooms.”

There's also a caution about interpreting the uncertainty itself. Every respondent being unsure about answer validity doesn't mean they distrust AI, or lack digital competence, or are skeptical of it: the questionnaire category doesn't tell us why they picked that response. It could be caution. It could be that they don't feel confident evaluating AI output. It could be an awareness that outputs need checking, or just a limitation of the response scale. Future instruments should use more precise items and follow-up questions to tell these apart. For now, the safest conclusion is a narrow one: respondents reported substantial practical use, and the validity item showed complete uncertainty. That contrast is enough to justify paying more attention to evaluation and verification; it isn't enough to say why respondents answered the way they did.³⁷

Study Limitations

The study has several limitations. First, it involved only 18 respondents, so the findings cannot be taken as representative of Tarbiyah students, let alone higher-education students in general. Second, the record does not document any probability sampling procedure or formal inclusion criteria. Third, the documentation that survives does not include complete item-level responses, so formal reliability coefficients cannot be recalculated, and there is no expert-rating dataset for a statistical content-validity coefficient either. Fourth, the questionnaire did include verification-related items, but respondent-level data for those items was not kept, so verification is discussed only as a conceptual and normative point rather than a quantitative finding. Fifth, AI literacy, epistemic trust, and cognitive offloading were not measured with dedicated validated scales; they are used here as interpretive lenses, not measured variables. Finally, a descriptive design like this one cannot support claims about statistical significance, learning effectiveness, or causality. Together, these limitations mark the boundaries of the study and point to what future research should prioritize: larger, more clearly sampled populations; complete item-level data; documented instrument validation and reliability testing; and direct measurement of AI literacy, epistemic trust, cognitive offloading, and verification behavior.

CONCLUSION

This study shows that AI use's educational significance cannot be read off frequency alone. The pattern among surveyed Tarbiyah students points to a tension: they treat AI as a practical resource for coursework while staying unsure whether its outputs deserve epistemic acceptance. The contribution here is pulling apart relying on a technology from trusting it as a source of knowledge; students can find AI useful without treating it as authoritative. For Islamic education, that strengthens the case for an approach to AI literacy that combines functional competence with critical evaluation, source awareness, and responsibility for which claims actually make it into academic work. Verification should be treated

³⁷ Dimitriadou and Lanitis; García-Martínez et al., "Analysing the Impact of Artificial Intelligence and Computational Sciences on Student Performance: Systematic Review and Meta-Analysis."

as an essential practice for managing uncertainty, and epistemic judgment should stay with the student rather than being handed off to the system. The interpretation here is limited: the evidence is small, non-probability, and descriptive, and the item-level verification data is missing, along with direct measures for the concepts discussed. Future research should look at these dimensions with larger samples, validated instruments, complete verification data, and designs that can test relationships without assuming causality.

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