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RECONSTRUCTING ADAB AL-'ILM AS LEARNING ETHICS IN ISLAMIC EDUCATION IN THE ERA OF GENERATIVE AI: AN INTEGRATIVE LITERATURE REVIEW

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Kata Kunci:		ABSTRAK
<i>Adab</i>	<i>Al-'Ilm</i> ;	<p>Penggunaan kecerdasan buatan generatif (Generative AI/GenAI) dalam pendidikan menghadirkan persoalan mendasar: peningkatan efisiensi belajar belum selalu disertai kerangka etika yang menjaga agensi intelektual, integritas akademik, verifikasi pengetahuan, dan relasi peserta didik dengan otoritas keilmuan. Penelitian ini bertujuan merekonstruksi adab al-'ilm sebagai kerangka konseptual etika belajar dalam pendidikan Islam di era GenAI. Penelitian menggunakan integrative literature review yang dipadukan dengan rekonstruksi konseptual. Literatur dianalisis melalui pemetaan problem etis-epistemik GenAI, pengodean prinsip adab al-'ilm, pencocokan fungsi, dan sintesis teoretis. Sintesis konseptual mengidentifikasi tujuh dimensi etika belajar: niat dan tujuan belajar, ikhtiar intelektual dan agensi, taḥqīq-tabayyun, amanah ilmiah, adab terhadap guru dan sumber, tawaduk epistemik, serta orientasi pada ilmu yang bermanfaat dan amal. Ketujuh dimensi tersebut diajukan sebagai kerangka konseptual, bukan sebagai model yang telah divalidasi secara empiris. Kerangka ini memosisikan GenAI sebagai alat bantu epistemik yang tetap berada di bawah penalaran, tanggung jawab moral, dan pertimbangan manusia. Kontribusi utama penelitian adalah pergeseran dari etika penggunaan AI menuju etika belajar bersama AI yang berakar pada tradisi pendidikan Islam.</p>
Kecerdasan	Buatan	
Generatif;	Etika	
Belajar;	Pendidikan	
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Keywords:	ABSTRACTS
Adab Al-'Ilm; Generative Artificial Intelligence; Learning Ethics; Islamic Education; Epistemic Agency	The use of generative artificial intelligence (GenAI) in education raises a fundamental problem: gains in learning efficiency are not always accompanied by an ethical framework that preserves intellectual agency, academic integrity, knowledge verification, and learners' relationships with scholarly authority. This study aims to reconstruct adab al-'ilm as a conceptual framework for learning ethics in Islamic education in the GenAI era. It employs an integrative literature review combined with conceptual reconstruction. The literature was analyzed through mapping GenAI-related ethical-epistemic problems, coding principles of adab al-'ilm, functional matching, and theoretical synthesis. The conceptual synthesis identifies seven dimensions of learning ethics: intention and purposes of learning; intellectual effort and agency; taḥqīq-tabayyun; academic trustworthiness; adab toward teachers and sources; epistemic humility; and orientation toward beneficial knowledge and action. These dimensions are proposed as a conceptual framework rather than an empirically validated model. The framework positions GenAI as an epistemic aid whose use remains subject to human reasoning, moral responsibility, and judgment. Its principal contribution is a shift from an ethics of AI use toward an ethics of learning with AI rooted in the Islamic educational tradition.

A. INTRODUCTION

The emergence of generative artificial intelligence (Generative Artificial Intelligence/GenAI) marks a crucial shift in the learning ecology. Unlike search engines, which focus on directing users to documents, GenAI can compose explanations, summarize texts, produce examples, construct arguments, translate, and provide interactive feedback. In higher education, students use this technology for personalized support, idea development, writing, and preliminary information searches, although concerns simultaneously arise regarding accuracy, privacy, and its impact on personal development (Chan, 2023). Cross-disciplinary studies likewise position large language models as technologies with the potential to enrich learning, while also carrying risks of bias, misinformation, misuse, and dependency when not supported by adequate pedagogical design and human oversight (Kasneci et al. 2023; Tlili et al. 2023).

This development is not merely a change of instruments, but a transformation in the way learners interact with knowledge. When answers appear within seconds, some activities that previously required reading, comparing, remembering, interpreting, and constructing arguments risk being fully delegated to machines. The consequences affect not only academic honesty but also the quality of intellectual formation. Yang et al. (2024) demonstrate the importance of student agency in determining whether the use of GenAI promotes shallow or deep approaches to learning. The experimental study by Essel et al. (2024) shows that the use of ChatGPT can affect critical, creative, and reflective thinking skills, meaning that its impact cannot be understood dichotomously as either purely harmful or absolutely enhancing. Recent conceptual studies further suggest that unguided use of LLMs can trigger cognitive offloading, weaken metacognitive regulation, and reduce epistemic agency. Learning design must therefore

preserve cognitive friction and position AI only as a thinking partner rather than a substitute for the reasoning process (Vendrell & Johnston, 2026).

The issue of academic integrity further underscores the ethical dimension of this transformation. Cotton et al. (2024) emphasize that GenAI broadens opportunities for learning engagement while simultaneously blurring the boundary between legitimate assistance and academic misconduct. Findings in Indonesia show a similar tendency: students use ChatGPT to complete assignments, yet this practice continues to provoke debate regarding risks to originality, integrity, and depth of learning (Husnaini & Madhani, 2024). Understanding academic ethics is not always linearly reflected in practice; Salsabila and Sohidin (2024) found that some students understand ethical norms yet continue to commit violations. Conversely, Febriyanti and FH (2025) show that the use of ChatGPT can coexist with academic integrity when supported by ethical awareness. Thus, the central issue lies in the quality of dispositions, regulation, and learning practices that guide the use of the technology, rather than in the existence of the technology itself.

In the context of Islamic education, this issue acquires an additional dimension because learning is understood not merely as the acquisition of competencies, but also as a process of forming a civilized and ethically cultivated human being. The literature on GenAI in Islamic education in Indonesia has developed rapidly. Suhendi et al. (2024) map the potential of ChatGPT to support the design of Islamic Religious Education learning while underscoring the risks of declining critical reasoning and depth of understanding. Meanwhile, Yuhana (2024) identifies the benefits of AI for efficiency, personalization, engagement, assessment, and accessibility, while highlighting issues of privacy, security, and concerns about shifts in the role of educators. In line with this, Tri Lestari et al. (2023) position AI integration in the Islamic education curriculum as an opportunity to strengthen personalization and accelerate feedback. Furthermore, Fuad and Fakhruddin (2025) emphasize that the use of AI in Islamic Religious Education learning must take into account the validity of religious information, ethical dimensions, potential dependency, policy frameworks, and resource readiness.

Indonesian scholarship has likewise moved from technical discussions toward digital morality and academic responsibility. 'Amala et al. (2023) discuss digital civility in students' use of ChatGPT; Sufendi and Kamal (2023) and Maulana et al. (2023) focus on ethics in academic writing and plagiarism; Faiz and Kurniawaty (2023) emphasize educators' moral role; Yahya et al. (2024) warn against dependency; and Baharuddin et al. (2025) call for the integration of technological innovation with moral-spiritual values. Collectively, these studies broaden ethical attention, yet they remain primarily concerned with responsible use rather than with the formative quality of learning itself.

Arabic scholarship shows a comparable pattern. Ismail and Tammam (2024) propose an Islamic pedagogical vision for AI ethics, al-Buhniyah (2025) emphasizes teachers' ethical awareness through transparency, accountability, and privacy, Al-Maya (2025) reports uneven levels of AI-ethics awareness among higher-education students,

and Ajouri (2024) highlights the potential of AI in Islamic education when legal and ethical safeguards are maintained. These contributions are important, but their analytical center remains ethics of use, awareness, and regulation.

On the other hand, the Islamic educational tradition has long possessed a conceptual framework that extends far beyond mere technological compliance, namely *adab al-‘ilm*. Al-Zarnuji (2014) links successful learning with sincerity of intention, appropriate selection of knowledge and teachers, respect for knowledge, diligence, continuity, *wara'*, time management, and sustained effort. Meanwhile, Al-Ghazali (2005) places the pursuit of knowledge within the project of purification of the soul, humility, orderly learning, and orientation toward drawing closer to Allah. Ibn Jama‘ah (2023) provides a detailed account of learners’ *adab* toward themselves, teachers, subject matter, and learning sources. Similarly, al-Nawawi (2017) emphasizes sincerity, respect, humility, and responsibility in the teaching and learning of the Qur'an, while Ibn ‘Abd al-Barr (1994) situates knowledge within a tradition of transmission that demands precision, accountability, and respect for scholarly authority. Contemporary studies in Indonesia further reinforce the relevance of these classical dimensions: ethics in *Ta‘lim al-Muta‘allim* is understood as normative ethics that guide learning actions (Suhendar & Ulum, 2024); KH Hasyim Asy'ari's concept of learning *adab* focuses on character formation among seekers of knowledge (Abdillah, 2023); al-Nawawi's thought links the *adab* of learning and teaching with foundations in the Qur'an and hadith (Rahman et al. 2024); the story of Musa-Khidr explores the values of patience, diligence, politeness, commitment, and self-control when asking questions (Husna Ameilia Lilena et al. 2024); and *Ta‘lim al-Muta‘allim* is also interpreted as embodying a balance among cognitive, affective, and psychomotor domains (Fuadi et al. 2022).

These strands are related but analytically distinct. AI ethics asks what rules should govern systems and their use; academic integrity focuses on authorship, attribution, and misconduct; AI literacy concerns users' capacity to understand, evaluate, and work with AI; digital ethics addresses responsible conduct in digitally mediated environments; and learning ethics asks what kinds of practices preserve the formation of the learner while knowledge is produced with technological mediation. Recent work on AI literacy, assessment, integrity, and human epistemic agency confirms that competent or compliant AI use does not automatically guarantee sustained cognitive engagement or responsible knowledge judgment (Farrokhnia et al., 2024; Furze et al., 2024; Rasul et al., 2024; Tzirides et al., 2024; Wu et al., 2025; Yan et al., 2025; Yusuf et al., 2024). *Adab al-‘ilm* enters at this formative level because it joins intention, intellectual effort, verification, authority, humility, and beneficial action within a single moral-epistemic account of learning. Table 1 clarifies this theoretical positioning.

Table 1. Theoretical Positioning of the Proposed Learning-Ethics Framework

Conceptual lens	Central question	Primary unit of concern	Limitation for the present problem
AI ethics	Is AI fair, safe, transparent, and accountable?	Systems, institutions, governance	Does not fully explain the formative quality of the learner's knowledge practices.
Academic integrity	Is academic work honest, attributable, and compliant?	Academic conduct and products	May leave cognitive delegation, epistemic effort, and authority underexamined.
AI literacy	Can learners understand, evaluate, and use AI effectively?	User competence	Competence does not automatically provide a moral orientation for learning.
Digital ethics	Is conduct in digitally mediated environments responsible?	Digital behavior	Broader than the specific ethics of knowing and learning with GenAI.
Learning ethics	Does AI-mediated learning preserve intellectual and moral formation?	Learner and learning process	Requires a normative account of purpose, effort, truth, authority, and benefit.
Adab al-'ilm	How should learners relate to knowledge, teachers, sources, self, and the purpose of learning?	Moral-epistemic formation	Classical functions require reconstruction for GenAI-mediated knowledge practices.

Source: Authors' conceptual synthesis based on the literature reviewed.

Reconstruction is theoretically necessary because GenAI changes the epistemic architecture in which classical adab is enacted. Classical texts presuppose learning ecologies organized around teachers, books, scholarly transmission, deliberation, and embodied discipline; GenAI can generate synthesized answers without transparent provenance, mediate access to authority, and externalize portions of reasoning and writing. A mechanical application of classical rules would therefore leave unexamined how their functions should be translated into prompt formulation, source checking, human-AI co-production, disclosure, and decisions about when machine output must yield to scholarly judgment. Reconstruction here means preserving the normative telos of adab al-'ilm while re-specifying the educational function of its principles under GenAI-mediated conditions, not claiming that classical authors anticipated contemporary technology. Accordingly, this study asks: (1) what ethical-epistemic challenges GenAI introduces into contemporary learning; (2) which principles of adab al-'ilm are conceptually relevant and how their functions should be reinterpreted; and (3) how these principles can be reconstructed into a conceptual learning-ethics framework for Islamic education. The contribution is a shift from ethics of AI use toward

ethics of learning with AI, with learner formation rather than technological compliance as the primary unit of analysis.

B. METHOD

This study employs an integrative literature review combined with conceptual reconstruction. An integrative review is appropriate when heterogeneous empirical, conceptual, and normative literatures need to be brought into dialogue to generate a new perspective rather than to estimate an intervention effect or claim exhaustive coverage of all studies (Cho, 2022). The review therefore integrates three bodies of knowledge: (a) recent literature on GenAI in education and Islamic education; (b) studies on AI ethics, academic integrity, AI literacy, learner agency, cognitive offloading, and epistemic authority; and (c) classical and contemporary literature on *adab al-‘ilm*. Conceptual reconstruction is used as the second analytic layer: classical principles are not transferred mechanically to contemporary technology, but are examined according to their educational and epistemic functions and then re-specified for GenAI-mediated learning.

Source searching and verification were conducted from July to September 2026 through official journal and publisher websites, Garuda, DOAJ, DOI-linked academic indexes, and citation chaining from highly relevant studies. Indonesian keywords included “kecerdasan buatan generatif”, “ChatGPT pendidikan Islam”, “etika akademik ChatGPT”, “adab belajar”, “Ta‘lim al-Muta‘allim”, and “adab penuntut ilmu”. Arabic queries included “أخلاقيات الذكاء الاصطناعي في التعليم”, “الذكاء الاصطناعي والتربية الإسلامية”, and “آداب طالب العلم”. English queries included “generative AI education ethics”, “ChatGPT academic integrity”, “AI literacy higher education”, “student agency generative AI”, “cognitive offloading generative AI”, and “epistemic authority generative AI”. Journal articles were eligible when they were directly relevant to at least one analytic domain, published in 2022–2026, peer reviewed, and supported by verifiable bibliographic metadata and DOI information. Classical works on *adab al-‘ilm* were exempted from the year restriction because they function as primary normative sources. Items were excluded when they were tangential to the research questions, duplicated an already represented argument without adding conceptual value, lacked verifiable publication metadata, or fell outside the specified period for journal literature.

For transparency, the study reports a source-selection audit rather than presenting the review as a systematic-review search. The authors’ working library initially contained 36 sources used in the first version of the manuscript. During revision, a supplementary search assessed 21 additional international journal candidates in order to strengthen coverage of AI literacy, assessment, academic integrity, epistemic agency, cognitive offloading, and review methodology. Ten of these candidates met the inclusion criteria and were retained, while 11 were excluded because they were peripheral, redundant, non-journal outputs, or outside the defined publication window. The final corpus therefore contains 46 sources: 41 journal articles and five classical primary works. Of the journal literature, 23 articles (50.0% of the total corpus) are from international/non-Indonesian peer-reviewed journals. The study does not use database hit counts to imply exhaustiveness; instead, the documented candidate library, eligibility rules, and analytic role of each source provide the transparency appropriate

to an integrative review. The sequence is summarized in Figure 1, while Table 2 describes the retained corpus.

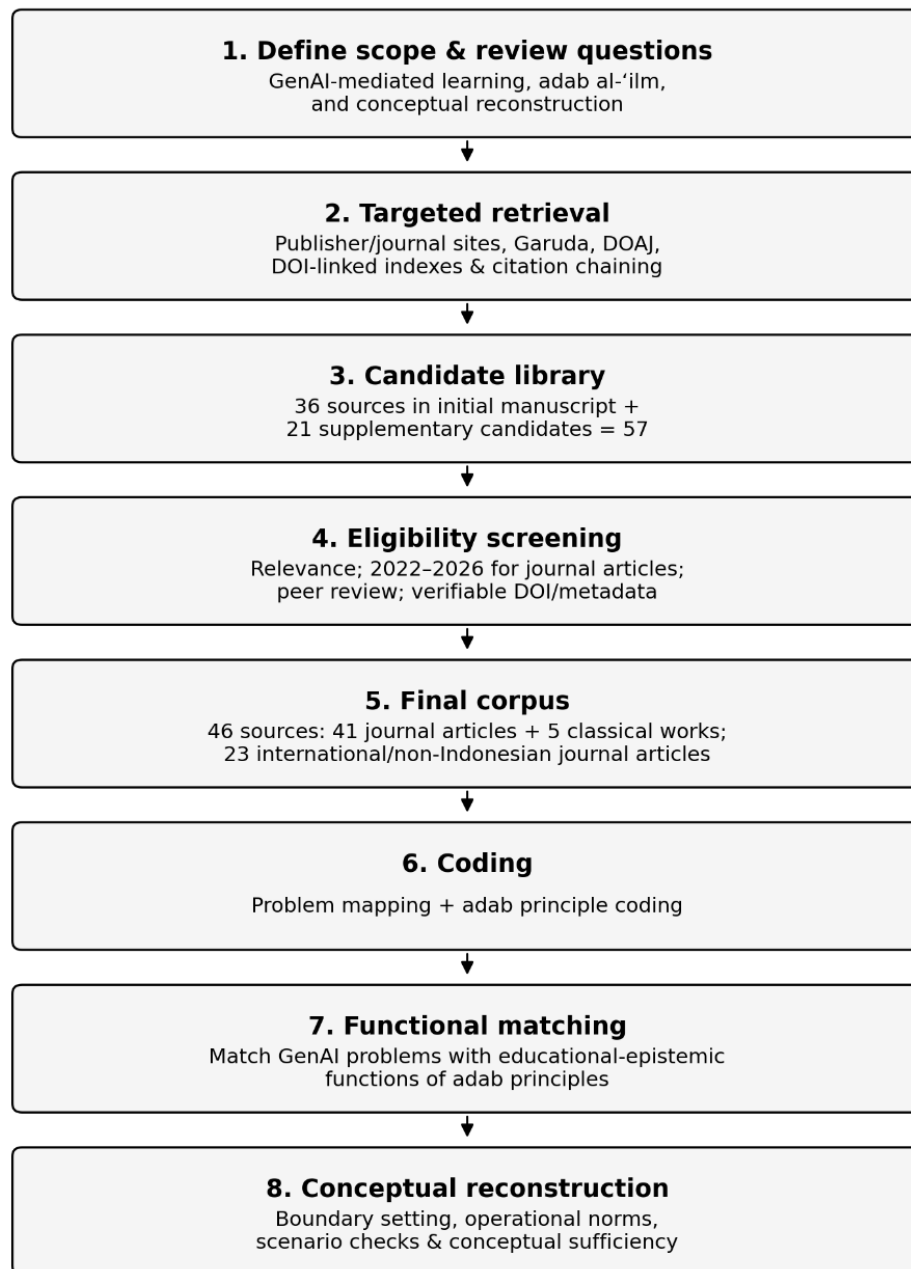


Figure 1. Research Process of the Integrative Literature Review and Conceptual Reconstruction

Table 1. Characteristics of the Retained Corpus

Source category	n	Publication range	Primary analytic role
Indonesian peer-reviewed journal articles	18	2022–2025	Islamic education, student use of AI, academic ethics, and contemporary adab studies
Arabic peer-reviewed journal articles	4	2024–2025	Islamic AI ethics, ethical awareness, and AI in Islamic education
English/international peer-reviewed journal articles	19	2022–2026	GenAI pedagogy, AI literacy, integrity, assessment, agency, cognitive offloading, epistemic authority, and review method
Classical Arabic primary works	5	Selected editions, 1994–2023	Normative and conceptual foundations of adab al-‘ilm
Total	46	—	Conceptual triangulation across empirical, normative, and theoretical literature

Analysis proceeded in four stages. First, problem mapping coded GenAI literature for changes in access to knowledge, intellectual effort, authorship, source reliability, epistemic authority, and learner responsibility. Second, principle coding identified adab al-‘ilm concepts according to function rather than historical form, including intention, diligence, verification, trustworthiness, respect for teachers and sources, humility, and beneficial knowledge. Third, functional matching compared each contemporary problem with the educational function of relevant adab principles; matches were retained only when the connection could be justified at the level of learning practice rather than lexical similarity. Fourth, conceptual reconstruction consolidated overlapping principles, defined conceptual boundaries, and translated them into provisional operational norms. Throughout this process, descriptive literature synthesis was kept distinct from interpretation: statements about what previous studies report were coded separately from the authors’ functional interpretation, and the seven dimensions were treated as new conceptual propositions rather than empirical findings.

Researcher judgment was controlled through an explicit audit matrix containing source, problem category, adab principle, functional rationale, counter-consideration, and proposed operational norm. A reconstructed dimension had to satisfy four decision rules: it had to be grounded in at least one primary or authoritative adab source; address a problem represented in recent GenAI literature; perform a function not fully duplicated by another dimension; and generate a defensible decision in at least two of three scenarios—knowledge seeking, preparation of academic assignments, and consultation on religious subject matter. The earlier term “theoretical saturation” is replaced here by conceptual sufficiency. Conceptual sufficiency was reached when additional eligible sources repeated already established categories and did not introduce a new ethical-epistemic problem, a distinct adab function, or a substantive counter-position. This criterion does not imply statistical completeness or the reproducibility claims of a systematic review; it indicates only that the corpus was sufficient for the bounded purpose of conceptual reconstruction.

C. RESULT AND DISCUSSION

1. Shifts in Learning Ethics within the GenAI Ecology

The literature synthesis indicates that Generative Artificial Intelligence (GenAI) triggers five fundamental shifts in learning practices: from information search to automated answer generation, from productive struggle to instant ease, from visible sources to references that are often opaque, from independent production to human-machine co-production, and from educator or scholarly-source authority to a conversational interface that is always accessible. These shifts explain why learning ethics are inadequate if reduced merely to prohibitions against plagiarism. Chan and Hu (2023) show that students appreciate GenAI's capacity to support personalized learning, brainstorming, writing, and research; meanwhile, Chan (2023) maps AI integration across three policy domains—pedagogical, governance, and operational. On the other hand, Lee et al. (2024) found significant ambiguity among educators regarding best practices and integrity, implying a need for institutional support. Thus, GenAI simultaneously expands learning capacity while increasing the need for self-regulation.

In the context of Islamic education, ease of access becomes a more sensitive issue when AI outputs concern Qur'anic verses, hadith, tafsir, fiqh, or explanations that depend heavily on scholarly authority. Fuad and Fakhruddin (2025) explicitly highlight the problem of the validity of AI information in interpreting the Qur'an and other religious sources. Suhendi et al. (2024) state that increased productivity resulting from the use of ChatGPT must be balanced by teacher policies so that it does not trigger degradation of critical reasoning and diminished depth of understanding. These findings align with international literature that identifies information inaccuracy and dependency as core risks of Large Language Models (LLMs) (Kasneci et al. 2023; Tlili et al. 2023). Therefore, the epistemic problem of GenAI in Islamic education is not centered solely on the question “is the answer wrong,” but also includes “who is responsible for verification,” “which sources are trustworthy,” and “does the process of obtaining the answer still develop learning capacity.”

The second risk is the substitution of intellectual effort. Yang et al. (2024) show that student agency determines whether GenAI is used in receptive, resistant, resourceful, or reflective ways. Vendrell and Johnston (2026) reinforce this view by emphasizing that overly facilitative design can erode the cognitive friction needed for higher-order reasoning. In Islamic educational discourse, this issue is closely related to the fading spirit of *jidd wa ijtihad*—diligence and the exertion of effort in seeking knowledge. Al-Zarnuji (2014) does not separate learning success from diligence, continuity, the selection of appropriate times, and self-discipline. Therefore, delegating all reading, reasoning, and argument construction to AI is not merely a problem of excessive efficiency, but also a problem of *adab*: learners obtain an intellectual product without undergoing the character-forming process that should accompany the pursuit of knowledge.

The third risk concerns authorship responsibility. Maulana et al. (2023), Sufendi and Kamal (2023), and Cotton et al. (2024) show that GenAI blurs the boundary between academic assistance, legitimate collaboration, and misconduct. Ethical awareness alone is insufficient unless translated into attribution rules, verification procedures, and

accountability for one's work. From the perspective of *adab al-'ilm*, an academic product is not an entity separated from the character of the learner. *Amanah ilmiah* requires learners not to present what they did not do as their own work, not to maintain unverified claims, and not to transfer responsibility for academic truth to an AI system. Thus, disclosure of AI use and verification of outputs are not merely editorial procedures, but concrete manifestations of *amanah*.

The fourth risk is a shift in pedagogical relationships. Faiz and Kurniawaty (2023) emphasize that the emotional and relational support provided by educators cannot be replaced by ChatGPT; Yuhana (2024) similarly notes concerns regarding the potential replacement of teachers' roles. In contrast, classical literature positions the teacher not merely as a transmitter of information, but as a guide to character, an assessor of intellectual readiness, and an intermediary in the scholarly tradition (Al-Ghazali 2005; Ibn Jama'ah 2023). Therefore, the 24/7 availability of GenAI is not equivalent to authority. A learning ethics framework must be able to optimize the benefits of AI accessibility while maintaining teachers and authoritative sources as primary references when an issue requires normative judgment, contextual understanding, or scholarly accountability.

2. The Ethical-Epistemic Architecture of Adab al-'Ilm

A functional reading of classical texts shows that *adab al-'ilm* possesses a conceptual structure far deeper than mere interpersonal etiquette. First, the orientation aspect emphasizes that the pursuit of knowledge must be grounded in sincere intention and directed toward teleologically meaningful goals; Al-Zarnuji (2014) places purity of intention as a primary foundation of the learning process, while Al-Ghazali (2005) connects the acquisition of knowledge with purification of the soul and drawing closer to Allah. Second, the process aspect demands discipline, perseverance, systematic stages of learning, and patience. Third, the validity aspect requires respect for teachers' scholarly authority, source legitimacy, continuity of transmission, and methodological precision. Fourth, epistemic character requires learners to avoid intellectual arrogance and not to become prematurely satisfied with partial understanding. Fifth, the fruit of knowledge is assessed not only by the capacity to articulate knowledge, but also by its actual benefit, embodiment in action, and formation of noble character.

Various contemporary studies further strengthen this functional reading. Suhendar and Ulum (2024) reveal that *Ta'lim al-Muta'allim* provides explicit normative guidance regarding learners' preferred actions. Abdillah (2023) emphasizes the centrality of learning *adab* in KH Hasyim Asy'ari's thought, while Rahman et al. (2024) elaborate on the relationship between the *adab* of learning and teaching rooted in the Qur'an and hadith through al-Nawawi's thought. Furthermore, Husna Ameilia Lilena et al. (2024) show that the story of Musa and Khidr articulates values of patience, diligence, social ethics, commitment, willingness to apologize, and self-control in asking questions. Fuadi et al. (2022) also demonstrate that the construction of *Ta'lim al-Muta'allim* can be understood as a comprehensive integration of the cognitive, affective, and psychomotor domains. All these findings confirm that *adab al-'ilm* is a holistic framework for forming learner character, not merely a set of superficial rules of politeness toward teachers.

On the basis of this understanding, *adab al-‘ilm* can be critically connected to GenAI discourse without falling into mechanical equivalence. For example, respect for teachers does not automatically prohibit the use of AI, but functions ethically to prevent confusion between the probabilistic outputs of a machine and accountable scholarly authority. Likewise, the principle of diligence does not reject technological efficiency, but ensures that digital tools do not eliminate the fundamental cognitive processes at the core of learning. In the same context, *tawaduk* does not mean passivity in accepting machine-generated answers; its epistemic function instead encourages recognition of the limitations of oneself and one’s instruments, making verification indispensable. Reconstruction based on this functional logic allows classical concepts to retain their normative identity while generating ethical considerations relevant to the digital ecosystem.

3. Seven Dimensions of the Proposed Conceptual Framework

The conceptual synthesis generated a proposed set of seven interrelated dimensions for the *Adab al-‘Ilm–GenAI Learning Ethics Framework*. These dimensions should be read as theoretically grounded propositions derived from the literature synthesis, not as empirically validated constructs:

First, intention and *maqasid al-ta‘allum*. Learners are required to identify whether the use of AI genuinely supports learning objectives or merely accelerates completion of an output. Similar practices—such as asking AI to prepare a summary—may have significantly different pedagogical value depending on their function: whether as an initial orientation before engaging deeply with primary sources, or as a substitute for comprehensive reading that is actually central to the assignment. Thus, this dimension shifts the evaluation paradigm from the simple dichotomy of “whether or not AI may be used” toward the crucial question “for what learning purpose is AI being used?”

Second, intellectual effort and agency. GenAI should be appropriately positioned as a scaffold or provisional thinking partner, not as a surrogate thinker. This principle is consistent with Yang et al. (2024) on student agency and Vendrell and Johnston (2026) on the importance of preserving cognitive friction. Within the framework of Islamic education, diligence in learning requires the continuation of fundamental cognitive processes that humans must perform independently, including problem formulation, exploration of initial answers, comparison of alternatives, argument construction, and revision of understanding. AI may be used after or between these stages, but it should not take over the entire process of critical reasoning.

Third, *tahqiq-tabayyun*. Every GenAI output should be treated as a provisional claim that must undergo further verification. Its operational norms include checking whether sources exist, matching attributions, comparing with primary literature or credible scholarly works, considering context, and withholding conclusions when evidence remains insufficient. This dimension is crucial in Islamic studies because misattribution of hadith, reduction of scholars’ views, or oversimplification of *ikhtilaf* can produce substantive distortions that appear convincing. Concerns regarding

accuracy are consistent with findings from international student studies (Chan & Hu, 2023) and studies of Islamic education in Indonesia (Fuad & Fakhruddin, 2025).

Fourth, amanah ilmiah. Learners bear full responsibility for the legitimacy of claims, the structure of arguments, citation accuracy, and overall academic quality, even when AI contributes to the writing process. Consequently, the use of GenAI must be transparently disclosed in accordance with institutional regulations; AI outputs must not simply be adopted without intellectual transformation; references recommended by AI must be reverified; and technical failures of AI cannot be used as a reason to relinquish authorship responsibility. This principle expands the scope of academic integrity—from merely detecting mechanical plagiarism toward full ownership of the learning process and its outputs. The relevance of strengthening this dimension is affirmed by the findings of Salsabila and Sohidin (2024), Febriyanti and FH (2025), and Sufendi and Kamal (2023).

Fifth, adab toward teachers and sources. Although GenAI can provide informative responses, it does not possess an epistemic status equivalent to teachers, ulama, researchers, or primary sources. Learners must be able to distinguish questions for which AI may provide assistance from issues that require direct consultation with trusted experts. In religious subject matter with normative implications, legal or doctrinal decisions cannot be based solely on chatbot answers. This dimension does not restrict innovation; studies by Ajouri (2024) and Ismail and Tammam (2024) instead demonstrate the potential for AI integration in Islamic education. The essential element maintained is the hierarchy of authority: AI functions as a facilitator of access and processor of data, while scholarly and moral authority remains grounded in human figures and accountable authoritative literature.

Sixth, epistemic tawaduk. AI's ability to generate fluent responses may create an illusion of certainty. Epistemic tawaduk requires learners to distinguish between fluency of linguistic articulation and factual truth, recognize uncertainty, remain open to correction, and avoid drawing conclusions beyond the limits of empirical evidence. This principle also applies to users: proficiency in operating AI does not automatically reflect mastery of a discipline. Awareness of these limitations makes tabayyun not merely an incidental action when suspicion arises, but an ingrained epistemic habitus. The findings of Al-Maya (2025) regarding varying levels of AI ethics awareness further emphasize the need to teach such awareness systematically as a core competence rather than assuming it will emerge spontaneously.

Seventh, ilmu nafi' and amal. The effectiveness of technology should be measured according to its genuine educational benefit, not merely by time efficiency or the appearance of sophisticated outputs. Learners are required to critically evaluate whether AI use truly fosters deep understanding, strengthens critical reasoning, preserves social values, and encourages responsible action. This principle provides a fundamental correction to techno-solutionism by emphasizing that technology becomes meaningful only when it supports higher educational purposes. Baharuddin et al. (2025) stress the urgency of maintaining integration between ethics and technology

in Islamic education, while al-Buhnayah (2025) shows that such ethical awareness must be systematically cultivated among all educational actors.

These seven dimensions are integratively interconnected rather than standing as a collection of isolated rules. Intention determines the direction of use; intellectual effort ensures the continuity of independent cognitive processes; tahqiq-tabayyun tests the validity of acquired knowledge; amanah ilmiah affirms academic accountability for the output; adab toward teachers and sources preserves the hierarchy of scholarly authority; epistemic tawaduk limits premature claims of certainty; and ilmu nafi' and amal assess the substantive implications of technology use for educational values. This systemic interconnection is crucial because failure in one dimension can degrade the others. For example, transparent attribution of AI use is meaningless if the generated output is never verified; conversely, factual verification alone is insufficient if AI has eliminated the entire process that should develop students' critical reasoning. Therefore, the reconstruction of adab al-'ilm requires a simultaneous and holistic evaluation encompassing purpose, cognitive process, data validity, scholarly responsibility, hierarchy of authority, epistemic disposition, and genuine benefit. Tables 3 and 4 summarize the problem structure and the proposed conceptual response.

Table 2. Changes in GenAI Learning Practices and Ethical-Epistemic Problems

Shift	Main risk	Learning ethics question
Search → answer generation	Instant answers replace source exploration	Does AI support the learning objective or replace the process that should be learned?
Productive struggle → instant convenience	Cognitive offloading and reduced agency	Which parts of intellectual work must remain the learner's responsibility?
Visible sources → opaque sources	Hallucinations, false attribution, loss of context	How are claims, sources, and context verified before they are accepted?
Individual production → human-AI co-production	Blurred authorship and responsibility	How should AI contributions be disclosed, and who is responsible for the final content?
Teacher/source → conversational interface	Availability is equated with authority	When should an AI answer be referred to a teacher, expert, or primary source?

Table 3. Proposed Adab al-‘Ilm–GenAI Learning Ethics Conceptual Framework

Dimension	Basis in adab al-‘ilm	GenAI risk addressed	Operational norm
Intention & maqasid al-ta‘allum	Ikhlās, purpose of knowledge, beneficial knowledge	AI is used only to complete the product	State the purpose of AI use and connect each use to the learning outcome.
Intellectual effort & agency	Jidd, ijtihad, patience, continuity	Delegation of reasoning and cognitive offloading	Retain problem formulation, initial reasoning, evaluation, and revision as human work.
Tahqiq–tabayyun	Precision, verification, responsibility in transmission	Hallucinations, false sources, incorrect context	Check sources, attribution, and context, and cross-check them against primary/scholarly sources.
Amanah ilmiah	Sidq, amanah, responsibility	Plagiarism and blurred authorship	Disclose AI contributions; do not present raw outputs as one’s own work; responsibility remains with the author.
Adab toward teachers & sources	Ta‘zim al-‘ilm wa al-mu‘allim	AI is equated with scholarly authority	Use AI for assistance; refer to teachers/experts/primary sources for validation and normative decisions.
Epistemic tawaduk	Avoid arrogance, recognize limitations	Linguistic fluency is mistaken for truth	State uncertainty, remain open to correction, and withhold judgment when the evidence is insufficient.
Ilmu nafi‘ & amal	Benefit, akhlak, amal	Efficiency becomes the sole measure	Evaluate outputs in terms of understanding, benefit, ethical impact, and contribution to self-formation.

Analysis/Discussion

1. From Compliance Ethics to Formative Ethics

The proposed conceptual framework clarifies a fundamental difference between compliance-oriented AI ethics and adab al-‘ilm as formative ethics. Compliance ethics focuses on whether data security is protected, citation rules are followed, AI involvement is disclosed, or plagiarism is avoided. These questions remain important, but they are not sufficient to comprehensively assess the quality of the learning process. For example, a student may transparently disclose the use of AI yet still lose the essence of the intellectual process if reading, reasoning, and argument construction are entirely delegated to the machine. Conversely, intensive use of AI can remain educational as

long as learners retain control over learning goals, verify outputs, sustain cognitive engagement, and remain responsible for the final result. Accordingly, the conceptual contribution of this framework lies in shifting the ethical focus from “technology and the regulation of its use” to “the learner and the process of self-formation through technology.”

This position complements rather than negates the existing literature on Islamic AI ethics. Ismail and Tammam (2024) formulate a vision for the use of AI in education from an Islamic pedagogical perspective, while al-Buhniyah (2025) emphasizes transparency, accountability, and privacy in cultivating teachers’ awareness. The reconstruction of *adab al-‘ilm* adds the dimension of learner formation, encompassing the ordering of intention, diligence, relationships with teachers, attentiveness to sources, and an orientation toward beneficial knowledge. Thus, the principles of fairness or transparency address how systems and institutions should operate, whereas *adab al-‘ilm* addresses how learners should form themselves while using those systems. These two levels need to be holistically integrated into Islamic education policy.

Table 5. Comparison with Existing GenAI-Education Frameworks

Framework/lens	Primary focus	Overlap with the proposed framework	Additional contribution of <i>adab al-‘ilm</i>
AI ethics/policy (Chan, 2023)	Governance, privacy, accountability, institutional response	Responsibility and transparency	Centers learner formation, intention, scholarly authority, and beneficial knowledge.
Academic integrity (Cotton et al., 2024; Rasul et al., 2024)	Authorship, plagiarism, disclosure, assessment integrity	Amanah, attribution, responsibility	Extends responsibility to verification and preservation of the intellectual learning process.
AI literacy (Tzirides et al., 2024)	Understanding, evaluating, and using AI	Critical evaluation and awareness of limitations	Adds moral-epistemic purpose, humility, and orientation toward the good of learning.
AI assessment (Furze et al., 2024)	Permissible levels of AI support in assessment	Preservation of meaningful human input	Adds formative norms for effort, verification, authority, and benefit across learning activities.
Epistemic agency (Wu et al., 2025; Yan et al., 2025)	Human judgment and agency in human–AI learning	Intellectual effort, reflection, uncertainty	Integrates agency with <i>adab</i> , scholarly authority, moral responsibility, and the telos of knowledge.
Proposed <i>adab al-‘ilm</i> framework	Ethics of learning with AI	Integrates competence,	Seven-dimensional formative account linking purpose,

Framework/lens	Primary focus	Overlap with the proposed framework	Additional contribution of adab al-‘ilm
		integrity, agency, and verification	process, truth, authority, disposition, and benefit.

Source: Authors’ comparative synthesis.

2. Preserving Agency and ‘Productive Struggle’

The dimension of intellectual effort has significant pedagogical implications. A total ban on GenAI is difficult to sustain and risks overlooking its benefits; conversely, use without a structured scheme may eliminate learning stages that are crucial for competency development. The findings of Chan and Hu (2023) show student acceptance of personalized support and brainstorming, while Essel et al. (2024) emphasize the relationship between ChatGPT use and cognitive skills in a planned learning context. Thus, the productive question is not “AI or no AI,” but rather “which components of an assignment must remain within the domain of students’ intellectual work, and which parts can be scaffolded by AI?”

This principle can be transformed into a three-phase assignment design. In the pre-AI phase, students are required to independently formulate an initial understanding, questions, or an argument framework. In the AI phase, students use GenAI to test counterarguments, explore examples, identify structural weaknesses, or obtain feedback. Then, in the post-AI phase, students verify sources, revise drafts based on their own judgment, and prepare reflections on which parts they accepted or rejected. This pattern can preserve cognitive friction while optimizing AI capabilities. From the perspective of adab, the presence of technology does not eliminate intellectual mujahadah, but is directed toward extending its reach. This staged design is consistent with recent evidence that GenAI can support or erode agency depending on how it is scaffolded, and with reviews linking unregulated use to cognitive offloading and overreliance (Wang et al., 2026) (Wang et al., 2026).

3. Restoring Authority through Verification, Not the Rejection of Technology

Restoring scholarly authority does not require rejecting GenAI or returning to a simple teacher-versus-technology hierarchy. Chan and Hu (2023) show that students value AI for personalized support and brainstorming, while Essel et al. (2024) demonstrate that learning effects depend on how the technology is embedded in cognitive activity. The more specific issue is epistemic authority: fluent output can be mistaken for warranted knowledge even though a language model cannot assume scholarly or moral accountability. Recent work on epistemic authority and agency therefore argues for explicit human verification and reflective judgment when AI mediates knowledge (Jose et al., 2025; Wu et al., 2025).

In the proposed framework, authority is restored through verification rather than prohibition. AI-generated claims are treated as provisional; learners check provenance, compare primary or scholarly sources, and consult teachers or subject experts when

interpretation, normativity, or context exceeds information matching. This move is especially important in Islamic education, where Qur'anic exegesis, hadith attribution, fiqh disagreement, and doctrinal claims are embedded in traditions of method and accountability. Thus, adab toward teachers and sources is reconstructed as an epistemic routing principle: it specifies when AI may assist and when responsible learning requires referral to accountable human authority.

4. Implications for the Islamic Education Curriculum

At the curriculum level, the seven dimensions can be translated into learning outcomes across courses. Learners should not merely be required to “be able to use AI,” but must be able to explain the purpose of its use, preserve essential cognitive processes, verify claims, document AI contributions, refer to authoritative sources, express uncertainty proportionally, and evaluate the benefits and impacts of AI outputs. Chan's (2023) policy framework emphasizes the importance of pedagogical, governance, and operational integration; in this regard, Islamic education can add a dispositional-adab dimension so that AI literacy does not focus only on technical skills and compliance.

In practical terms, Islamic higher education institutions can implement declarations of AI use in assignments, assessment rubrics focused on the verification process, brief oral defense for AI-assisted work, mandatory lists of primary sources, and metacognitive reflection on considerations in accepting or rejecting AI outputs. This policy-based approach is more educational than relying solely on AI detection tools, which tend to be problematic. The experiences and perceptions of educators reported by Lee et al. (2024) underscore the importance of institutional support; meanwhile, studies in Indonesia show that students and educators are already actively engaged in practices involving ChatGPT, rather than merely at a hypothetical level ('Amala et al., 2023; Husnaini & Madhani, 2024). Institutions therefore need to transition from reactive responses toward explicit and structured learning design.

5. The Operational Cycle of Adab in Learning with GenAI

To ensure that this framework does not remain merely a set of abstract values, the seven dimensions can be implemented through an action cycle. The first stage is orientation: learners establish learning objectives and the rationale for using AI. The second stage is initial effort, in which learners independently build an initial understanding, question, or hypothesis before requesting a machine-generated answer. The third stage is GenAI consultation: system outputs are treated as provisional inputs that broaden perspective rather than as final results. The fourth stage involves tahqiq-tabayyun, namely testing claims, quotations, references, and context against primary sources or scholarly literature. The fifth stage is consultation with authority, undertaken when a problem requires religious, methodological, or contextual judgment that cannot be adequately resolved through information matching alone. The sixth stage is transformation and attribution: learners process verified results into their own language and arguments and disclose AI contributions in accordance with policy. The seventh stage is reflection on benefit, in which learners evaluate the depth of understanding, development of competence, correction of errors, and the extent to which the final product provides accountable benefit. Figure 2 visualizes this seven-stage cycle.

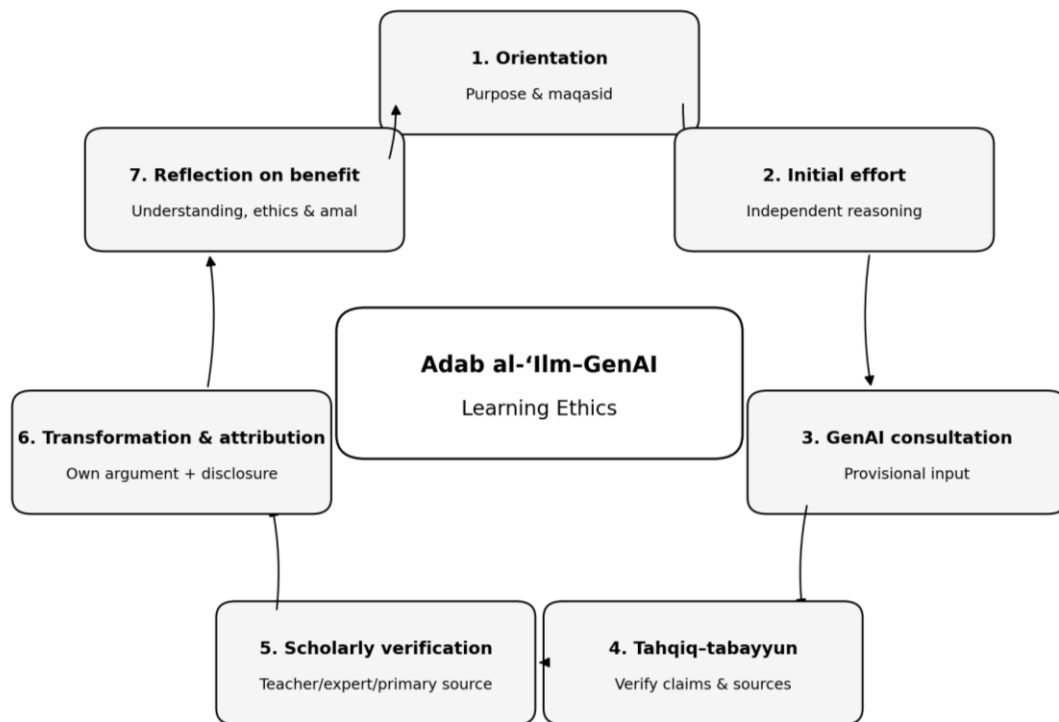


Figure 2. Adab al-'Ilm-GenAI Learning Ethics Operational Cycle

As visualized in Figure 2, this cycle brings AI literacy and adab al-'ilm into a balanced relationship without reducing the essence of either. AI literacy provides the capacity to understand system limitations, risks, and affordances, while adab provides a normative orientation for the formation of the learner as a subject. This relationship explains why policies that merely list permitted or prohibited applications will quickly become obsolete: although models, features, and platforms continue to change, the essential questions of purpose, effort, verification, amanah, authority, humility, and benefit remain valid benchmarks for assessing new practices. In this sense, adab functions as a relatively stable design principle, while technical rules are its contextual translation. Thus, this reconstruction offers a conceptual bridge between the normative heritage of Islamic education and the need for learning governance that is adaptive to developments in GenAI.

6. Limitations and an Agenda for Empirical Testing

This reconstruction has four limitations. First, the seven dimensions were generated through conceptual synthesis and have not been empirically validated against learner behavior or educational outcomes. Second, the classical sources come from different genres and historical contexts; transferring their educational functions to GenAI-mediated learning is therefore an interpretive act, not a claim that classical scholars addressed modern technology. Third, although the revised corpus strengthens international-journal coverage, the review remains integrative rather than systematic and does not claim exhaustive database coverage or bibliometric representativeness. Fourth, the operational norms were conceptually checked through bounded learning

scenarios rather than field implementation. Future research should operationalize the seven dimensions into measurement scales, observation rubrics, scenario-based assessments, and intervention designs, and should test them across higher education, madrasah, and pesantren contexts. Such studies can determine whether the proposed conceptual framework is valid, reliable, pedagogically useful, and sensitive to differences in learner autonomy, teacher authority, and access to primary sources.

CONCLUSION

This integrative literature review and conceptual reconstruction suggests that GenAI changes learning ethics not simply by adding a new information tool, but by redistributing intellectual effort, authorship, verification, and epistemic authority within the learning process. The synthesis proposes seven interrelated dimensions of *adab al-‘ilm* for GenAI-mediated learning: intention and *maqasid al-ta‘allum*, intellectual effort and agency, *tahqiq-tabayyun*, *amanah ilmiah*, *adab toward teachers and sources*, *epistemic tawaduk*, and orientation toward *ilmu nafi‘* and *amal*. The principal contribution is conceptual rather than empirical: it reframes the discussion from an ethics of AI use—centered mainly on compliance, disclosure, privacy, or plagiarism—toward an ethics of learning with AI that evaluates whether technology preserves the learner’s intellectual, moral, and epistemic formation. For Islamic education, the proposed framework implies that curriculum and assessment should preserve essential human reasoning, require verification of AI-generated claims, make AI contributions transparent, maintain referral to accountable scholarly authority, and include reflection on the educational benefit of AI-assisted work. The framework should therefore be treated as a theoretically grounded proposition that requires empirical validation; future research should operationalize its dimensions through scales, observation rubrics, scenario-based assessments, and comparative studies across universities, madrasahs, and pesantren.

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