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Artificial Intelligence-Based Instructional Design for Islamic Religious Education: A Cognitive-Partner Framework for Cultivating Learning Adab

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Abstract

Generative artificial intelligence (GenAI) presents new opportunities for Islamic Religious Education (PAI), yet its integration raises concerns regarding the reliability of religious information, cognitive dependence, and the cultivation of learning *adab*. This study aims to develop the Artificial Intelligence–Cognitive Partner Instructional Design (AI-CPID), an instructional framework that integrates AI-assisted learning with Islamic educational ethics. Employing a Design-Based Research (DBR)-oriented conceptual development approach, the study synthesizes relevant educational theories, human–AI collaboration principles, and Islamic concepts of *ta'dib*, *tabayyun*, and *tafakkur* to formulate an instructional prototype and assessment framework. The development produces a five-stage learning sequence comprising independent inquiry, AI-assisted dialogic exploration, *tabayyun*-based source verification, AI-free *tafakkur*, and accountable knowledge synthesis. The framework specifies teacher and student responsibilities, ethical AI-use protocols, source-verification procedures, and observable indicators of learning *adab*, including intellectual honesty, epistemic humility, and independent reasoning. These components provide a structured mechanism for positioning AI as a cognitive partner while maintaining human responsibility for religious interpretation and knowledge validation. The study concludes that AI-CPID offers a theoretically grounded instructional framework for integrating GenAI into PAI without compromising the ethical foundations of Islamic education. Its principal contribution lies in operationalizing learning *adab* through assessable pedagogical activities and providing a foundation for subsequent empirical validation. Further classroom-based investigation is required to establish its feasibility and educational effectiveness.

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INTRODUCTION

Generative artificial intelligence (GenAI) has transformed educational practices from conventional digital content delivery into interactive human–AI collaboration. Large language models can generate explanations, formulate questions, provide formative feedback, and facilitate knowledge exploration. These capabilities create opportunities for personalized learning but also raise concerns about information reliability and learners' cognitive independence. Cukurova (2025) conceptualizes hybrid intelligence as a collaborative relationship in which artificial intelligence extends human cognitive capabilities without replacing human reasoning, judgment, and agency. Accordingly, effective

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instructional design must establish boundaries between activities supported by AI (Kibar & Ilgaz, 2026; Lee & Lee, 2025; Saar et al., 2026) and those requiring independent intellectual engagement, particularly in educational contexts that emphasize ethical responsibility and character formation.

In Islamic Religious Education (Pendidikan Agama Islam, PAI), GenAI integration presents distinctive pedagogical and epistemological challenges. PAI aims not only to develop religious knowledge but also to cultivate *adab*, encompassing respect for knowledge, scholarly authority, intellectual humility, and responsible conduct. Al-Attas (1980) emphasizes *ta'dib* as an educational orientation integrating knowledge, ethical awareness, and appropriate action. Learning therefore cannot be reduced to producing correct answers or completing assignments efficiently. Students must also develop the ability to evaluate information critically and demonstrate ethical responsibility (Fajri et al., 2026; Kyambade et al., 2025; Ramadhani et al., 2024; Ribchester & Healey, 2019). Consequently, AI-supported PAI instruction requires an approach that preserves human judgment, religious source authentication, and reflective learning.

The use of GenAI introduces risks such as inaccurate references, fabricated citations, unsupported religious interpretations, undisclosed AI assistance, and excessive dependence on generated answers. These problems become particularly significant when AI provides explanations of Qur'anic verses, hadith, Islamic jurisprudence, or theological issues without identifying reliable textual sources and interpretive contexts. UNESCO emphasizes human-centred educational oversight, privacy protection, and critical evaluation of AI-generated information (Miao & Holmes, 2023). Within Islamic education, these principles correspond to *tabayyun*, understood as verification of information and its sources, and *tafakkur*, referring to reflective intellectual engagement. Both are essential for preventing AI-generated explanations from being accepted uncritically as religious authority.

Positioning AI as a cognitive partner offers a pedagogical response to these challenges. Rather than functioning as an autonomous source of truth, AI serves as a provisional cognitive scaffold supporting questioning, comparison, and critical inquiry. Students should formulate initial ideas, examine AI-generated explanations, compare alternative perspectives, and independently verify their validity. This approach aligns with critical thinking and human oversight principles discussed by Kasneci et al. (2023) and the instructional safeguards proposed in Vendrell & Johnston (2026). The educational value of AI thus depends not merely on generated responses but on students' ability to evaluate, challenge, and, when necessary, reject unsupported information.

Previous studies provide important foundations for AI-supported education but address different aspects of its pedagogical integration. Kasneci et al. (2023) examined large language models' educational opportunities and limitations, emphasizing personalized feedback, knowledge exploration, and fact-checking; however, their study did not develop a structured instructional sequence specifically for PAI. Cukurova (2025) advanced a hybrid-intelligence perspective that preserves human agency but did not operationalize boundaries between AI-supported and independent cognitive activities within Islamic education. Achruh et al. (2024), through interviews in Indonesian Islamic higher education, identified opportunities, ethical challenges, and contextual barriers to AI adoption, yet did not formulate an instructional framework incorporating *tabayyun*, religious source authentication, and measurable learning *adab*. Similarly, Umar et al. (2026) investigated eight pre-service Islamic education teachers' experiences of AI-assisted instructional media development, highlighting tensions between technological assistance and pedagogical judgment. Nevertheless, their research focused on media-production experiences rather than student-centred instructional procedures and ethical learning assessment. Meanwhile, Miao et al.

(2024) developed an AI competency framework emphasizing responsible technology use, human-centred values, and critical engagement, but did not specifically operationalize Islamic educational ethics in PAI instruction. Collectively, these studies establish the significance of AI literacy, human–AI collaboration, and ethical awareness while leaving an insufficiently developed area: an operational PAI instructional design integrating AI-supported inquiry, independent verification of religious information, structured reflection, and observable indicators of learning *adab*.

This research gap involves both conceptual integration and instructional operationalization. Existing approaches have not sufficiently connected AI-assisted cognitive activities with *ta'dib*, *tabayyun*, and *tafakkur* within a unified learning sequence. Moreover, the reviewed studies do not explicitly specify teacher responsibilities, student activities, required learning artefacts, and assessment indicators for evaluating ethical learning practices in AI-supported PAI. A fundamental issue concerns the distinction between informational assistance and epistemic authority. Although AI can generate provisional explanations and alternative arguments, teachers and learners remain responsible for authenticating religious sources and interpreting contested materials. Verification should therefore involve authoritative Qur'anic texts, authenticated hadith references, credible scholarly literature, and teacher-approved resources rather than relying exclusively on AI-generated statements.

To address these gaps, this study proposes the Artificial Intelligence–Cognitive Partner Instructional Design (AI-CPID), a conceptual framework integrating constructivist inquiry, scaffolded human–AI collaboration, and the Islamic educational principle of *ta'dib*. The instructional sequence begins with students identifying a learning problem and articulating preliminary understanding. They subsequently interact with AI to explore explanations and alternative perspectives before conducting *tabayyun* through independent verification of claims using reliable sources. The following stage emphasizes *tafakkur* through AI-free reflection, allowing students to evaluate evidence and reconstruct their understanding independently. Finally, students produce learning artefacts demonstrating original reasoning, responsible attribution of AI assistance, and ethical accountability. Teachers guide the process, supervise source verification, and evaluate students' cognitive and ethical engagement.

The novelty of AI-CPID lies in translating Islamic educational ethics into an operational and assessable human–AI learning sequence. Unlike previous studies focusing primarily on AI adoption, technological opportunities, cognitive collaboration, or general AI competencies, AI-CPID specifies the functions and limitations of AI at each instructional stage. It also operationalizes learning *adab* through observable practices, including verification of religious sources, acknowledgment of AI assistance, intellectual humility, respect for scholarly authority, and independent knowledge construction. By distinguishing AI-assisted inquiry from AI-free reflection, the framework seeks to preserve students' cognitive autonomy while utilizing technological assistance responsibly.

Learning *adab* is the central construct of this framework and should be distinguished from general learning adaptability or technological proficiency. In this study, learning *adab* refers to observable ethical and epistemic practices demonstrated during instructional activities rather than internal religiosity or enduring spiritual character. Its indicators include evaluating information credibility, acknowledging knowledge limitations, attributing AI assistance transparently, respecting scholarly authority, and assuming responsibility for final academic judgments. These indicators provide a practical basis for assessing ethical learning without claiming to measure students' inward intentions.

Effective implementation also requires alignment between learning objectives, instructional activities, and assessment procedures. Merely requesting answers from AI may

improve task completion without demonstrating meaningful understanding. Conversely, activities requiring students to examine assumptions, verify references, compare explanations, and justify conclusions provide stronger evidence of independent reasoning. Teachers can evaluate AI dialogue records, verification worksheets, reflective responses, and AI-free learning artefacts. Such procedures correspond with scholarship emphasizing fact-checking, critical thinking, and human oversight in AI-enabled learning (Kasneci et al., 2023; Porayska-Pomsta et al., 2023). They also connect the philosophical foundation of *ta'dib* with observable practices of *tabayyun* and *tafakkur*.

The contribution of this study lies in developing an instructional prototype rather than demonstrating established empirical effectiveness. Specifically, it defines AI's role as a provisional cognitive partner, develops an instructional sequence integrating inquiry and independent verification, establishes observable learning-*adab* indicators, and proposes expert validation, pilot implementation, and mixed-method evaluation procedures. s a conceptual instructional development study, the present research focuses on establishing the theoretical and operational foundations of AI-CPID, while its feasibility and educational effectiveness require subsequent empirical validation.

Accordingly, this study addresses three research questions: (1) How can GenAI be structured as a provisional cognitive partner in PAI instruction? (2) What instructional activities, learning artefacts, and assessment indicators can operationalize learning *adab* through *tabayyun*, *tafakkur*, and responsible AI use? (3) What evidence and evaluation procedures are required to assess the feasibility, learner engagement, and educational effectiveness of AI-CPID? Through these questions, the study aims to establish a theoretically grounded instructional framework that integrates responsible human–AI collaboration with the epistemological and ethical foundations of Islamic Religious Education.

METHOD

Research Design

This study employed a conceptual instructional development approach informed by Design-Based Research (DBR), which integrates educational problem analysis, instructional design, and iterative evaluation (McKenney & Reeves, 2019). The research focused on developing the Artificial Intelligence–Cognitive Partner Instructional Design (AI-CPID) through three interconnected activities: conceptual analysis, instructional prototype development, and evaluation framework formulation. The conceptual analysis synthesized principles of human–AI collaboration, constructivist learning, and Islamic educational ethics, particularly *ta'dib*, *tabayyun*, and *tafakkur*. These foundations informed the development of an instructional model designed to integrate AI-supported inquiry with independent reasoning and learning *adab*. The study was limited to conceptual development, while empirical validation and effectiveness testing were designated for subsequent research.

Research Context and Instructional Development

The framework was developed for the Islamic Religious Education (PAI) Study Program at Universitas Islam Internasional Darullughah Wadda'wah (UII Dalwa), Pasuruan, Indonesia. The proposed empirical validation involves 32 fifth-semester students and three expert validators, consisting of two instructional design specialists and one Islamic education specialist. Purposive sampling is proposed to select participants based on their relevance to the instructional context. These numbers represent the intended evaluation setting rather than verified participation in completed fieldwork.

The AI-CPID prototype consists of five instructional stages: (1) Independent Inquiry, in which students formulate questions and initial explanations without AI assistance;

(2) AI-Assisted Dialogic Exploration, involving critical examination of provisional AI-generated explanations; (3) Tabayyun-Based Source Verification, requiring independent authentication of claims through authoritative Islamic and academic references; (4) AI-Free Tafakkur, emphasizing reflective reasoning without AI assistance; and (5) Accountable Knowledge Synthesis, requiring independently developed conclusions and transparent disclosure of AI assistance. The prototype includes instructional guidelines, student worksheets, source-verification logs, reflective activities, and assessment rubrics.

Table 1. Proposed AI-CPID Implementation Protocol

Proposed Session	Instructional Activities	Expected Learning Evidence
1. Orientation and Independent Inquiry (100 min)	Students complete an AI-free conceptual task, formulate initial questions, and receive guidance on ethical AI use.	Initial questions, baseline responses, and orientation checklist.
2. AI-Assisted Dialogic Exploration (100 min)	Students interact critically with AI-generated explanations, identify assumptions, and explore alternative perspectives.	Prompt–response records and annotated student questions.
3. Tabayyun and Tafakkur (100 min)	Students verify AI-generated claims using authoritative sources and independently reflect on their findings without AI assistance.	Source-verification logs and AI-free reflective responses.
4. Accountable Synthesis and Evaluation (100 min)	Students produce independent learning outputs, disclose AI assistance, and complete proposed assessment activities.	Final learning artefacts, AI-use disclosures, and assessment records.

Research Instruments and Validation

The proposed evaluation uses classroom observation, semi-structured interviews, anonymized AI interaction records, reflective journals, independent learning artefacts, and pretest–posttest assessments. Learning *adab* is operationalized through four observable dimensions: source verification, intellectual honesty, epistemic humility, and accountable synthesis. These dimensions assess ethical learning practices rather than students' internal religiosity.

Table 2. Operational Indicators and Assessment of Learning Adab

Dimension	Observable Indicator	Assessment Evidence
Tabayyun (Source Verification)	Identifies AI-generated claims, verifies information against authoritative sources, and justifies acceptance or rejection.	Source-verification logs and lecturer assessment.
Intellectual Honesty	Transparently discloses AI assistance and distinguishes independent reasoning from AI-generated content.	AI-use declarations and final learning artefacts.
Epistemic Humility	Recognizes uncertainty, considers alternative interpretations, and acknowledges limitations of AI-generated knowledge.	Reflective journals and student interviews.
Accountable Synthesis	Develops and defends independent conclusions based on verified information and responsible reasoning.	AI-free assignments and analytic rubric assessments.

Content validity will be assessed through expert judgment using the Item-level Content Validity Index (I-CVI) and Scale-level Content Validity Index (S-CVI/Ave), following Polit & Beck (2006). Three validators will rate item relevance on a four-point scale and provide qualitative recommendations. Subsequent pilot testing will examine instrument clarity, item performance, and internal consistency using Cronbach's alpha where appropriate. These procedures constitute the proposed validation plan rather than completed empirical findings.

Data Analysis

The proposed analysis combines qualitative and quantitative procedures. Qualitative data from observations, interviews, AI interaction records, and reflections will be analyzed thematically to identify patterns of critical inquiry, source verification, ethical responsibility, and independent reasoning. Triangulation and an audit trail will support analytical trustworthiness (Lincoln & Guba, 1985).

Quantitative data will be summarized using descriptive statistics and, where appropriate, comparisons of paired pretest–posttest scores. Changes in conceptual understanding may be assessed using normalized gain, calculated as (g=(\text{posttest}-\text{pretest})/(\text{maximum score}-\text{pretest})), following Hake (1998). This measure will not be applied to ordinal learning-*adab* scores without appropriate justification. Qualitative and quantitative findings will subsequently be integrated to examine instructional feasibility, learning processes, and areas requiring refinement.

Ethical Considerations

The proposed implementation incorporates informed consent, confidentiality, anonymization of student records, and responsible AI use. Identifiable student information must not be submitted to public AI platforms. AI-generated religious information will require independent verification through authoritative sources under lecturer supervision, particularly for Qur'anic interpretation, hadith authenticity, and Islamic jurisprudence. Students will also disclose AI assistance in their academic work. Institutional permissions and ethical procedures will be documented during subsequent empirical implementation.

RESULTS AND DISCUSSION

Development of the AI-CPID Instructional Framework

The primary outcome of this study is the development of the Artificial Intelligence–Cognitive Partner Instructional Design (AI-CPID), a conceptual instructional framework integrating generative artificial intelligence into Islamic Religious Education (PAI) while maintaining the epistemological and ethical foundations of Islamic learning. The framework positions AI as a provisional cognitive partner that facilitates inquiry, explanation, and critical exploration without replacing students' independent reasoning or teachers' pedagogical authority. Its development draws on hybrid intelligence, constructivist learning, and the Islamic educational principles of *ta'dib*, *tabayyun*, and *tafakkur*. AI-CPID establishes a structured relationship between human–AI interaction, independent verification, reflective reasoning, and accountable knowledge construction. This orientation corresponds with Cukurova's (2025) conception of hybrid intelligence, in which artificial intelligence supports human cognitive capabilities while preserving intellectual agency. It also responds to the educational challenges identified by Kasneci et al. (2023), particularly the risks of inaccurate AI-generated information, cognitive dependence, and insufficient critical evaluation.

The framework consists of five interconnected stages: Independent Inquiry, AI-Assisted Dialogic Exploration, Tabayyun-Based Source Verification, AI-Free Tafakkur, and Accountable Knowledge Synthesis. Each stage specifies instructional objectives, teacher and student responsibilities, appropriate AI involvement, and observable learning outputs. The sequence deliberately alternates AI-assisted and independent cognitive activities to prevent technological assistance from replacing students' responsibility for understanding and evaluating information. During Independent Inquiry, students formulate questions and articulate preliminary understanding before interacting with AI. AI-Assisted Dialogic Exploration subsequently allows students to examine provisional explanations, alternative interpretations, and relevant assumptions. Tabayyun-Based Source Verification requires

independent examination of AI-generated claims using authoritative religious and scholarly references. AI-Free Tafakkur provides an opportunity for students to reconstruct understanding through independent reflection, while Accountable Knowledge Synthesis requires students to communicate verified conclusions and disclose AI assistance transparently.

Table 3. AI-CPID Instructional Framework and Observable Learning Outputs

Instructional Stage	Teacher–Student–AI Interaction	Expected Learning Output
1. Independent Inquiry	Students formulate original PAI questions and initial explanations without AI; teachers clarify learning objectives and source requirements.	Original questions and AI-free preliminary reasoning.
2. AI-Assisted Dialogic Exploration	AI generates provisional explanations; students critically examine assumptions, alternatives, and limitations under teacher guidance.	Annotated AI interactions and critical questions.
3. Tabayyun-Based Source Verification	Students verify AI-generated claims through authoritative Islamic and scholarly sources; teachers guide complex interpretations.	Claim–source verification logs and documented decisions.
4. AI-Free Tafakkur	Students independently reflect on verified information, identify misconceptions, and reconstruct understanding without AI assistance.	Reflective notes and independent conceptual explanations.
5. Accountable Knowledge Synthesis	Students develop evidence-based conclusions, acknowledge AI assistance, and demonstrate responsible scholarly conduct.	Independent learning artefacts, AI-use disclosures, and learning-adab assessments.

The structure presented in Table 3 represents the operational specification of the instructional model rather than evidence of completed classroom implementation. Its contribution lies in connecting each learning stage to identifiable instructional responsibilities and assessment evidence. This approach is consistent with recent discussions of AI-supported instructional design and adaptive learning scaffolds (Riantoni et al., 2025; Yeganeh et al., 2025). By requiring traceable learning outputs, AI-CPID provides a foundation for evaluating whether students engage in genuine knowledge construction rather than relying exclusively on generated responses.

Operationalization of Tabayyun, Tafakkur, and Learning Adab

A central contribution of AI-CPID is the translation of Islamic educational ethics into observable pedagogical practices. Within the framework, *tabayyun* functions as a structured verification activity through which students critically examine information generated by AI. Verification extends beyond checking whether an answer appears reasonable; it requires identifying specific claims, consulting appropriate sources, evaluating their credibility, and deciding whether the claims should be accepted, revised, or rejected. In PAI, this process is particularly important because religious knowledge requires careful attention to textual authenticity and scholarly interpretation. Students must distinguish between Qur'anic texts, hadith reports, jurisprudential interpretations, and AI-generated summaries. Scholarly approaches to textual interpretation emphasize the importance of source context, interpretive methods, and disciplinary conventions (Demircigil, 2025; Dobson & Ziemann, 2020). Consequently, AI-generated religious explanations should be treated as provisional interpretations requiring independent verification rather than authoritative conclusions.

To illustrate the proposed verification procedure, Table 4 presents a constructed example involving the principle of *tabayyun* in Qur'an 49:6. The example demonstrates how students may evaluate AI-generated statements, consult authoritative sources, and document

their reasoning. It is intended as an instructional illustration rather than an observation of actual student behaviour.

Table 4. Illustrative Tabayyun-Based Verification of AI-Generated Religious Information

AI-Generated Claim (Illustrative)	Independent Verification Activity	Expected Student Decision
"Qur'an 49:6 emphasizes the verification of received information."	Examine the verse using an authoritative translation and relevant scholarly commentary.	Accept the claim with an accurate reference and appropriate contextual qualification.
"Every religious interpretation generated by AI is universally accepted."	Compare authoritative scholarly interpretations and identify possible disagreements.	Reject the generalization and recognize interpretive diversity.
"A particular hadith supports the explanation provided by AI."	Locate the original hadith reference, examine its authenticity, and consult reliable scholarly sources.	Accept only when adequately verified; otherwise withhold or reject the claim.

Table 4 illustrates how *tabayyun* can be translated into a transparent learning process. Students are required to demonstrate not only whether they accept or reject information but also the reasoning and evidence supporting their decisions. This procedure reduces the possibility of equating copied citations with genuine source verification. The subsequent *tafakkur* stage complements verification by requiring students to disengage temporarily from AI assistance and independently reflect on their understanding. Students identify misconceptions, compare initial assumptions with verified evidence, and formulate explanations using their own reasoning. This approach establishes an opportunity to examine retained conceptual understanding rather than merely the fluency of AI-generated text. The distinction between productive cognitive assistance and excessive cognitive offloading is consistent with contemporary discussions of human agency and critical-thinking scaffolds (Cukurova, 2025; Vendrell & Johnston, 2026).

Learning *adab* is operationalized through source verification, intellectual honesty, epistemic humility, and accountable synthesis. These dimensions translate ethical learning principles into observable classroom practices, including transparent acknowledgment of AI assistance, recognition of uncertainty, respect for scholarly authority, and responsibility for academic conclusions. Their conceptual orientation is consistent with scholarship emphasizing the integration of Islamic educational values, ethical character formation, and responsible knowledge practices (Amali et al., 2025; Astutik et al., 2026; Aulia et al., 2026; Oschar et al., 2025; Silaturahim et al., 2025; Syukur, 2026). Nevertheless, observable learning *adab* should not be interpreted as a direct measurement of students' internal religiosity or enduring moral character. Rather, the proposed indicators provide context-specific evidence of ethical academic conduct. Establishing sustained character development would require longitudinal observation and additional assessment approaches beyond the present conceptual framework.

AI as a Cognitive Partner: Pedagogical and Epistemological Implications

The pedagogical significance of AI-CPID lies in redefining the instructional relationship between students, teachers, and artificial intelligence. AI is positioned as a dialogical resource capable of generating questions, proposing alternative explanations, and supporting exploratory reasoning. However, responsibility for evaluating knowledge remains with students and teachers. This distinction is essential because AI systems may produce convincing explanations without adequately representing uncertainty, source authenticity, or scholarly disagreement. Cukurova (2025) argues that the educational potential of hybrid intelligence depends on complementarity between technological capabilities and human cognitive agency. AI-CPID operationalizes this relationship by distinguishing tasks

appropriate for AI assistance from those requiring independent human judgment. Students may employ AI to explore preliminary explanations or compare perspectives, but source authentication, ethical reasoning, and final conclusions must remain accountable to human evaluation.

This orientation also corresponds with UNESCO's emphasis on responsible AI competencies, including human-centred values, ethical awareness, critical evaluation, and informed technology use (Miao et al., 2024). Unlike general AI literacy frameworks, AI-CPID contextualizes these principles within Islamic educational practices by integrating *tabayyun*, *tafakkur*, and learning *adab* into instructional activities. The framework thus extends discussions of responsible AI use toward the operational requirements of PAI learning. The proposed model also addresses concerns surrounding cognitive dependence. Students who repeatedly request complete answers may accomplish academic tasks without developing sufficient conceptual understanding. By contrast, instructional prompts that encourage questioning, clarification, comparison, and independent verification can create opportunities for more active intellectual engagement. Kasneci et al. (2023) and Vendrell and Johnston (2026) provide relevant foundations for understanding how structured AI interaction may support critical thinking while preserving productive cognitive effort.

An additional implication concerns the role of the lecturer as an epistemic supervisor. Teachers determine appropriate reference materials, guide the interpretation of contested religious information, and assess whether students can justify their conclusions independently. This responsibility corresponds with discussions of pedagogical judgment and epistemological orientations in higher education (Francis & Afful, 2023). It also reflects the importance of critical AI literacy, in which technological competence must be accompanied by the ability to evaluate the credibility and limitations of generated knowledge (Dhunpath, 2026). The framework's emphasis on learner agency is relevant to studies of AI-assisted Islamic education. Umar et al. (2026), for example, investigated pre-service Islamic education teachers' experiences in developing AI-supported instructional media, highlighting the relationship between technological assistance and professional pedagogical judgment. AI-CPID builds on this discussion by proposing a student-facing instructional sequence in which critical engagement, religious source verification, and independent reflection are explicitly incorporated into the learning process. The educational mechanism proposed by AI-CPID is therefore conditional rather than deterministic. AI-assisted dialogue may facilitate exploration, but meaningful learning depends on students' willingness and ability to question generated information, consult reliable sources, and reconstruct their understanding independently. These mechanisms require empirical examination before claims of improved critical thinking, academic responsibility, or learning achievement can be established.

Instructional Implementation and Practical Implications

The implementation of AI-CPID requires coordinated instructional planning, access to appropriate reference materials, and continuous teacher supervision. Before learning activities begin, lecturers should identify reliable Islamic and academic sources, establish ethical AI-use guidelines, and explain the distinction between exploratory AI interaction and authoritative knowledge verification. During instructional activities, lecturers facilitate students' independent question formulation and monitor their interactions with AI-generated responses. Particular attention should be given to cases involving fabricated references, inaccurate religious interpretations, or unsupported generalizations. Such cases can be incorporated into teaching activities to demonstrate the importance of source criticism and responsible reasoning.

The design also encourages differentiated instructional scaffolding. Students with limited experience in critical AI interaction may require structured prompting templates and

guided verification procedures. More advanced learners may be encouraged to develop independent interpretations and evaluate competing arguments before consulting AI. These variations allow instructional support to respond to learners' cognitive needs while preserving the fundamental requirements of independent verification and ethical accountability. Practical implementation must also address unequal technological access, lecturers' workload, and institutional readiness. AI-supported learning may create additional demands related to monitoring prompt records, evaluating source-verification activities, and providing feedback on reflective assignments. Achruh et al. (2024) identify infrastructure limitations, ethical concerns, and contextual challenges associated with AI adoption in Indonesian Islamic higher education. Accordingly, AI-CPID should accommodate accessible technologies and alternative learning procedures for students with limited digital resources.

A further consideration concerns the consistency of ethical safeguards across technological platforms. Although different AI systems may offer varying capabilities, the instructional principles of source authentication, independent reflection, and transparent attribution should remain consistent. This flexibility supports the adaptation of AI-CPID across different PAI topics and institutional conditions without compromising its educational orientation. The proposed framework also has implications for assessment practices. Rather than evaluating only the completeness or linguistic quality of students' final answers, lecturers should examine the processes through which students formulate questions, verify claims, revise misconceptions, and justify conclusions. This process-oriented evaluation provides a more meaningful basis for assessing responsible AI-supported learning.

Framework Limitations and Future Empirical Validation

The present study contributes an operational instructional framework, but its educational effectiveness has not yet been established through verified classroom-based evaluation. The AI-CPID prototype specifies learning stages, instructional responsibilities, verification procedures, and assessment indicators; however, these components require systematic empirical validation before conclusions can be drawn regarding their feasibility or impact on students' learning practices. Future research should examine the framework through expert appraisal, instrument validation, pilot implementation, and iterative classroom testing. Expert evaluation should assess conceptual coherence, instructional suitability, Islamic educational relevance, and the clarity of learning-*adab* indicators. Subsequent classroom studies should investigate implementation fidelity, student engagement, source-verification accuracy, independent reasoning, and the practical challenges encountered by lecturers.

The evaluation should also consider possible unintended consequences, including excessive reliance on AI-generated explanations, superficial verification practices, unequal access to technological resources, and increased instructional workload. Qualitative evidence from observations, interviews, and reflective artefacts may be integrated with quantitative assessment outcomes to provide a more comprehensive understanding of the model's feasibility and educational implications. Further investigation is also required to determine whether AI-CPID supports sustained improvements in critical reasoning and ethical learning conduct beyond individual instructional sessions. Longitudinal studies and comparative instructional designs may provide stronger evidence regarding the relationship between structured human–AI collaboration and the development of learning *adab*.

Overall, AI-CPID provides a theoretically grounded and operationally specified approach to integrating generative artificial intelligence into Islamic Religious Education. Its principal contribution lies in connecting technological assistance with independent religious knowledge verification, reflective reasoning, and responsible academic conduct. Through

this integration, the framework offers a foundation for developing AI-supported learning environments that maintain human epistemic agency and the ethical orientation of Islamic education.

CONCLUSION

This study developed the Artificial Intelligence–Cognitive Partner Instructional Design (AI-CPID) as a conceptual instructional framework integrating generative artificial intelligence into Islamic Religious Education (PAI) while preserving students' cognitive independence and the ethical foundations of Islamic learning. The framework comprises five interconnected stages: Independent Inquiry, AI-Assisted Dialogic Exploration, Tabayyun-Based Source Verification, AI-Free Tafakkur, and Accountable Knowledge Synthesis. These stages position AI as a provisional cognitive partner that supports knowledge exploration without replacing human responsibility for religious interpretation, critical judgment, and independent reasoning.

The principal contribution of AI-CPID lies in operationalizing learning *adab* through observable instructional practices, including source verification, intellectual honesty, epistemic humility, and accountable knowledge construction. By integrating *ta'dib*, *tabayyun*, and *tafakkur* with human–AI cognitive collaboration, the framework establishes explicit instructional responsibilities, learning activities, and assessment indicators. It also provides a structured foundation for evaluating instructional feasibility, student engagement, and responsible AI use in PAI learning environments.

Nevertheless, this study is limited to conceptual framework development, and its instructional feasibility and educational effectiveness have not yet been empirically established. Future research should undertake expert validation, instrument reliability assessment, classroom-based pilot testing, and iterative refinement of the AI-CPID prototype. Further longitudinal and comparative investigations are also recommended to examine its potential effects on students' critical reasoning, independent learning, and observable learning *adab*. Thus, AI-CPID offers a theoretically grounded foundation for responsible AI-supported Islamic education, while its practical effectiveness remains subject to systematic empirical verification.

DECLARATION OF AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this manuscript, the author used ChatGPT (OpenAI) to assist with academic language refinement, grammatical correction, and manuscript editing. All AI-assisted outputs were critically reviewed, verified, and revised by the author to ensure accuracy, originality, and academic integrity. The author assumes full responsibility for the final content of the manuscript.

AUTHOR CONTRIBUTION STATEMENT

A. Roisul Burhani was responsible for the conceptualization, literature review, methodological design, development of the Artificial Intelligence–Cognitive Partner Instructional Design (AI-CPID) framework, instructional prototype development, manuscript preparation, review, and editing. The author read and approved the final manuscript and assumes full responsibility for its content.

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DATA AVAILABILITY STATEMENT

This study focuses on the conceptual development of the Artificial Intelligence–Cognitive Partner Instructional Design (AI-CPID) framework. The instructional procedures, assessment indicators, and proposed evaluation framework are presented in the manuscript. No verified empirical dataset supporting claims of intervention effectiveness is reported in this study. Supporting materials related to the instructional design may be made available by the author upon reasonable request, subject to availability.

DECLARATION OF INTERESTS

The author declares no financial, personal, professional, or other competing interests that could have influenced the research or preparation of this manuscript.

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