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Enhancing Islamic Education Teachers' AI Ethics Competence Through a Case-Based Training Module on Contemporary Fiqh Issues

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ABSTRACT

This study investigates the enhancement of Islamic Religious Education (PAI) teachers' competence in Artificial Intelligence (AI) ethics through a case-based training module grounded in contemporary fiqh at MTsN 1 Baubau. The research responds to the growing ethical challenges posed by generative AI in education, including academic integrity risks, misinformation and bias, and concerns about data privacy. Employing a Research and Development (R&D) approach using the ADDIE model (Analysis, Design, Development, Implementation, Evaluation), the study developed an operational training module integrating maqāṣid al-sharī'ah, selected fiqh maxims (qawā'id fiqhiyyah), and maṣlaḥah–mafsadah reasoning into case-based learning activities relevant to classroom practices. A qualitative case study orientation was embedded within the development process through needs assessment interviews, training observations, and document analysis, complemented by a one-group pretest–posttest design to examine effectiveness. Participants were PAI teachers at MTsN 1 Baubau who engaged in structured training sessions featuring guided case discussions, ethical decision-making simulations, and the production of practical outputs such as classroom AI-use policies and authentic assessment designs. Data analysis combined descriptive quantitative procedures (e.g., gain scores) with thematic analysis of participant reflections and observational notes to capture changes in knowledge, attitudes, and pedagogical skills. The findings indicate improvements in teachers' operational understanding of AI ethics (attribution and disclosure, privacy precautions, bias verification, and integrity-focused assessment), a shift toward proactive ethical governance of AI use, and strengthened pedagogical capacity to translate ethical principles into classroom routines and assessment practices. Challenges included uneven digital literacy, limited time for follow-up implementation, and the need for madrasah-level policy alignment. Overall, the study suggests that integrating contemporary fiqh with case-based professional learning is a promising pathway for strengthening responsible AI use in PAI education.

Keywords: *Improving Islamic Religious Education Teacher Competence, AI Ethics, Case Study-Based Training Module, Contemporary Islamic Jurisprudence*

1. Introduction

The rapid development of Artificial Intelligence (AI), particularly generative AI, has reshaped the learning landscape through easier access to information, automation of academic tasks, and the personalization of learning materials.(Jaeni et al., 2019) On the one hand, AI offers opportunities to increase efficiency and support differentiated instruction; on the other hand, it introduces increasingly complex ethical risks, including plagiarism, algorithmic bias, privacy and data protection violations, cognitive dependence, misinformation, and blurred boundaries of intellectual responsibility between teachers, students, and AI systems. These challenges become especially critical in the context of Islamic Religious Education (PAI) in madrasahs, because PAI learning does not merely pursue cognitive achievement but also aims to cultivate character (akhlak), digital etiquette (adab), and moral responsibility in the use of technology. Therefore, PAI

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teachers' competence in AI ethics should not be framed solely as a technical skill; it must be understood as a pedagogical–moral competence that directly influences learning quality and students' academic integrity.(Azis, 2019; Kurnia et al., 2024)

Globally, the need to strengthen AI ethics in education has intensified alongside the emergence of international normative frameworks. UNESCO, for instance, emphasizes the importance of human-centered AI, the protection of dignity and human rights, transparency, fairness, and human oversight as ethical principles that should be translated into policies and practices across sectors, including education (UNESCO Recommendation on the Ethics of Artificial Intelligence). In Indonesia, national policy directions also position AI as a pillar of long-term digital transformation. The National Strategy for Artificial Intelligence (Stranas KA) 2020–2045 identifies ethics and governance as foundational elements of AI development, while also recognizing education as a strategic sector in the national AI agenda. At the same time, personal data protection has become an increasingly relevant ethical and legal prerequisite for educational practice, particularly as teachers and students use digital platforms, third-party applications, and AI services that process user data. Law Number 27 of 2022 on Personal Data Protection underscores obligations and principles of caution in personal data processing in Indonesia. These normative and regulatory developments indicate that AI ethics is not an optional add-on, but an essential component of responsible educational practice.(Sutisnawati, 2017)

Nevertheless, the availability of normative frameworks does not automatically translate into practical readiness among educators in classrooms. In many schools and madrasahs, AI use often emerges informally driven by urgency and curiosity without operational ethical guidelines. This situation may create a contradiction: AI is used to support learning, yet its practice can weaken academic integrity, undermine the authenticity of students' work, and normalize shortcuts in learning. In PAI classrooms, the challenge becomes even more sensitive because AI is not merely an academic tool; it may also influence how students understand religious epistemic authority, interpret sources, and form religious habits in digital environments. Consequently, strengthening AI ethics competence for PAI teachers must be designed in a contextual manner, grounded in real cases, and aligned with Islamic values and the tradition of ijtihad that responds to contemporary problems.

At this point, the perspective of contemporary fiqh (fiqh kontemporer) becomes strategically relevant. Contemporary fiqh provides a normative reasoning framework to address new phenomena (nawāzil) by considering maqāṣid al-sharī'ah (the higher objectives of Islamic law), legal maxims (qawā'id fiqhiyyah), and the evaluation of public benefit (maṣlaḥah) and harm prevention (mafsadah). When AI raises dilemmas such as academic honesty, data security, bias and injustice, and the use of content without attribution, PAI teachers require analytical tools that go beyond "rules of use." They need the capacity to assess what is beneficial, what is harmful, what boundaries are permissible, and how digital ethics can be cultivated through instruction. Linking AI ethics to case-based contemporary fiqh enables training to move from declarative claims ("AI is good/bad") toward deliberative reasoning: weighing principles, impacts, and moral–social consequences within educational contexts.(Farizi et al., 2025)

Building on this urgency, the present study proposes an intervention in the form of a case-based training module grounded in contemporary fiqh to enhance PAI teachers' competence in AI ethics. The module is not limited to introducing AI concepts; it prioritizes teachers' professional capacity to: (1) identify ethical risks of AI use in classrooms; (2) design classroom norms and learning activities that safeguard integrity; (3) integrate data privacy literacy and digital responsibility; (4) guide students to make ethical judgments about AI use through moderate, well-

reasoned Islamic argumentation; and (5) apply more authentic assessment strategies so that AI use does not eliminate students' thinking processes and reflective learning. Pedagogically, a case-based training module aligns with principles of adult learning (andragogy) and problem-based learning, as teachers learn more effectively through realistic scenarios, discussion, and reflective practice.(Joina et al., 2026)

This study focuses on MTsN 1 Baubau, considering that the madrasah tsanawiyah level represents a developmental stage where students are particularly susceptible to the formation of digital habits. At this level, students increasingly use smartphones and online platforms, while their digital literacy and capacity to evaluate information credibility are not yet fully mature. In such a context, PAI teachers occupy a strategic position to embed AI ethics as part of learning etiquette, intellectual trustworthiness (amanah ilmiyyah), and social responsibility. Moreover, the growing recognition of AI literacy—along with initiatives in schools that introduce coding and AI-related competencies—suggests that AI-related competencies, including ethical dimensions, will become increasingly relevant in schools and madrasahs in the coming years. Therefore, MTsN 1 Baubau constitutes an appropriate setting to examine how a value-centered training module can strengthen PAI teachers' preparedness in an evolving learning ecosystem.

The research questions guiding this study are as follows: (1) what is the initial condition of PAI teachers' competence at MTsN 1 Baubau regarding AI ethics (knowledge, attitudes, and pedagogical skills); (2) how can a case-based training module grounded in contemporary fiqh be designed to address teachers' needs; (3) to what extent does the module improve PAI teachers' competence in AI ethics; and (4) what factors support or hinder the implementation of the module in the madrasah context. Correspondingly, the objectives of this study are to describe the initial needs and baseline condition, develop the training module, assess its effectiveness in improving PAI teachers' AI ethics competence, and formulate practical recommendations for implementation in madrasahs.(Maulida et al., n.d.)

The contribution of this study is both theoretical and practical. Theoretically, it expands the discourse on AI ethics in education by integrating global ethical frameworks emphasizing dignity, rights, fairness, transparency, and human oversight into an Islamic ethical reasoning framework through contemporary fiqh and maqāṣid al-sharīʿah. Practically, the study produces an operational training module for PAI teachers: not merely a general guideline, but a usable instructional resource to develop classroom norms, design integrity-supporting learning activities, and foster a culture of trustworthy and responsible AI literacy. In addition, the study is relevant to the growing need for privacy-aware educational practices, as the use of AI platforms often intersects with the personal data of both students and teachers.

Ultimately, this study positions PAI teachers not as passive users of technology, but as ethical agents capable of guiding students to navigate AI responsibly. Through a case-based training module grounded in contemporary fiqh, AI ethics is expected to be understood not simply as prohibitions and warnings, but as a professional competence rooted in values, reasoning, and pedagogical practice. By focusing on MTsN 1 Baubau, the study aims to provide a contextual understanding while offering a competence development model that can be replicated or adapted by other madrasahs according to their needs and the characteristics of their learners.

2. Methods

This study employs a Research and Development (R&D) approach using the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) to

develop a case-based training module grounded in contemporary fiqh and to examine its effectiveness in improving PAI teachers' competence in AI ethics. The study is conducted at MTsN 1 Baubau, with PAI teachers serving as the primary participants in the training intervention. During the Analysis stage, a needs assessment is carried out to map teachers' baseline competence covering knowledge, attitudes, and pedagogical skills regarding key AI ethics issues in education, including academic integrity, data privacy, bias and misinformation, and appropriate boundaries for AI use in learning and assessment. Data are collected through semi-structured interviews and a diagnostic questionnaire. In the Design stage, the training objectives, content scope, learning sequence, and assessment plan are specified. The module is structured around case-based learning, integrating Islamic ethical-legal reasoning through maqāṣid al-sharī'ah, selected fiqh maxims (qawā'id fiqhiyyah), and the principle of maṣlaḥah (public benefit) and harm prevention. In the Development stage, the module package is produced, including case vignettes, participant worksheets, a facilitator guide, and evaluation instruments. The draft module is validated by experts in PAI/contemporary fiqh, instructional technology, and madrasah practice, focusing on content validity, clarity of language, feasibility, and instructional usability. Expert feedback is used to revise and refine the module before implementation.(Nugraha et al., 2025; Salim & Veri, 2025; Tinjauan et al., 2023)

The Implementation stage consists of a structured training program (e.g., 3–4 sessions) featuring guided case discussions, ethical decision-making simulations, and the design of classroom policies and instructional artifacts related to AI use. Module effectiveness is examined using a one-group pretest–posttest design. Instruments include an AI ethics knowledge test, an attitude scale, and product-based rubrics assessing outputs such as lesson plans, authentic assessment designs, and classroom AI-use guidelines. Finally, the Evaluation stage combines simple quantitative analysis (e.g., gain scores) with qualitative analysis of participant reflections, training observation notes, and follow-up interviews. Trustworthiness is supported through method triangulation, member checking, and a documented audit trail of the development process.

3. Findings and Discussions

3.1 Findings

This section is presented as an illustrative/hypothetical write-up to model an academically appropriate "Findings" section. It should be adapted with your actual empirical data (e.g., participant numbers, scores, and quotations) before being used as a formal research report. This study produced two main outcomes: (1) a case-based AI ethics training module grounded in contemporary fiqh that is feasible for use, and (2) evidence of the module's effectiveness in improving teachers' competence across knowledge, ethical attitudes, and pedagogical skills. The findings are organized into four parts: baseline competence, module development and expert validation, training implementation, and the evaluation of effectiveness and participant responses.

1) Baseline Condition of PAI Teachers' AI Ethics Competence

The needs analysis indicates that many PAI teachers at MTsN 1 Baubau are generally familiar with generative AI, primarily as a tool for brainstorming, summarizing, and preparing teaching materials. However, understanding of ethical risks and practical boundaries for AI use in instruction is uneven. Regarding knowledge, the least operationally understood issues include: (a) definitions and indicators of AI-assisted plagiarism, (b) attribution and transparency principles for

AI use in student work, (c) personal data protection when using third-party AI platforms, (d) AI bias and hallucination risks, and (e) authentic assessment design to reduce dependency on AI. Regarding attitudes, teachers largely agree that AI can be beneficial, yet express concerns about declining academic honesty and weakened student thinking habits. Regarding pedagogical skills, some teachers do not yet have clear classroom policies for AI use, such as explicit rules, disclosure formats for assignments, or strategies to teach AI literacy aligned with PAI values.

Illustratively, baseline diagnostic results (pretest) place teachers in a moderate competence range, with substantial variation across individuals. This variation appears related to prior technology experience, access to professional development, and the frequency of digital tool use in instruction. These baseline findings informed the module design, which emphasizes case-based learning and contemporary fiqh reasoning, enabling teachers not only to "know the rules," but also to perform context-sensitive ethical judgment supported by principled argumentation.

2) Module Development and Expert Validation Results

The developed product is an AI Ethics Training Module for PAI Teachers consisting of: (1) an introduction to generative AI and the scope of AI ethics in education; (2) a contemporary fiqh framework for analyzing AI-related issues (maqāṣid al-sharī'ah, fiqh maxims/qawā'id fiqhiyyah, maṣlaḥah–mafsadah); (3) tiered case packages (basic–intermediate–advanced); (4) case-analysis worksheets; (5) a facilitator guide; (6) sample classroom AI policies and an "AI disclosure" format for student tasks; and (7) evaluation instruments (knowledge test, attitude scale, and product assessment rubrics).

Expert validation results (illustratively) indicate that the module is feasible in terms of content quality, language clarity, and usability. PAI/contemporary fiqh experts regard the integration of maqāṣid and fiqh maxims as appropriate for framing AI ethics dilemmas, particularly regarding scholarly trustworthiness (amanah ilmiyyah), fairness, harm prevention, and the cultivation of learning etiquette. Instructional technology experts recommend making cases more closely aligned with everyday classroom practices (e.g., summarization tasks, presentation creation, and essay responses) and strengthening authentic assessment rubrics that emphasize thinking processes. Madrasah practitioners emphasize the need for simple, implementable policy templates that do not increase teachers' administrative burden. Revisions were made by clarifying rubric indicators, adding scenarios of ethical violations related to AI, and simplifying facilitation steps for case discussions.

3) Training Implementation Results (Case-Based Learning)

The training program (illustratively) is implemented through 3–4 structured sessions. The initial session aligns participants' understanding of AI, key ethical risks, and data-privacy caution. Subsequent sessions emphasize case-based discussion using the contemporary fiqh worksheet framework: participants identify the ethical problem, map actors and potential impacts, select relevant maqāṣid principles (e.g., hifẓ al-'aql, hifẓ al-māl, hifẓ al-'irḍ, hifẓ al-nafs), apply fiqh maxims (e.g., dar' al-mafāsid muqaddam 'alā jalb al-maṣāliḥ; al-ḍarar yuzāl), and formulate ethical decisions alongside pedagogical recommendations. In the final session, participants develop practical outputs: (a) a classroom AI-use policy, (b) authentic assessment designs that minimize outsourcing thinking to AI, and (c) guidance schemes for digital etiquette (e.g., citation ethics, information verification, and responsible use).

Training observations (illustratively) show positive dynamics: case discussions trigger richer argumentation than lecture-based sessions because teachers connect AI dilemmas to their lived classroom experiences. Participants also increasingly recognize that outright "bans" on AI are unrealistic; instead, the priority becomes ethical governance through transparent rules, pedagogical design, and value-based guidance. A main challenge is the variation in participants' digital literacy; some teachers require basic technical support (e.g., prompt practices, output verification, and safe data handling) before fully engaging with complex ethical deliberation.

4) Module Effectiveness: Changes in Knowledge, Attitudes, and Pedagogical Skills

Effectiveness is evaluated through pretest–posttest measures and product assessment. Quantitative results (illustratively) indicate an increase in average knowledge scores from moderate to higher competence levels. The most notable improvement appears in teachers' understanding of: (1) ethical versus unethical AI use in student assignments, (2) the importance of disclosure and attribution, (3) strategies to reduce AI-assisted plagiarism through authentic assessment, and (4) data-privacy risks and mitigation steps. In the attitude dimension, the scale suggests a shift from "anxious and reactive" to "cautious and proactive," reflected in teachers' stronger inclination to manage AI through classroom rules, task design, and ethical guidance rather than solely prohibiting or ignoring AI use.

For pedagogical skills, product assessment (illustratively) shows that most participants can develop classroom policies that specify: what AI tools are covered, permissible and impermissible uses (e.g., brainstorming or language refinement versus generating final essay answers without independent processing), disclosure requirements, and consequences for violations. Moreover, the authentic assessment designs produced tend to emphasize learning processes (drafting, reflection logs, oral presentations, and source triangulation) rather than only final products. This indicates that the module contributes not only to knowledge acquisition but also to shifts in instructional practice.

Qualitative data (illustratively) from participant reflections reinforce these findings. Teachers report that contemporary fiqh case analysis provides a "language" and "framework" to evaluate AI dilemmas in a value-centered manner rather than a purely technical one. Participants also note that the module facilitates integration of AI ethics into PAI themes such as trustworthiness (amanah), honesty, etiquette in seeking knowledge, and social responsibility in digital spaces. However, some constraints are acknowledged: limited time, differences in students' device access, and the need for institutional support so that AI-use policies remain consistent across subjects.

3.2 Discussions

This discussion interprets the findings on the development and implementation of a case-based training module grounded in contemporary fiqh to enhance PAI teachers' competence in AI ethics at MTsN 1 Baubau. Overall, the results suggest that competence improvement is most plausible when ethical understanding is framed not merely as a list of prohibitions, but as a structured professional capacity encompassing knowledge, dispositions, and pedagogical enactment. In this sense, the module functions as a bridge between emerging ethical challenges of generative AI in education and the normative reasoning tradition in Islamic scholarship, thereby strengthening teachers' capacity to make context sensitive judgments.(Muna et al., n.d.)

First, the observed improvement in teachers' knowledge can be explained by the module's emphasis on operational ethics such as disclosure, attribution,

privacy safeguards, and bias verification rather than abstract discussions about "good" or "bad" technology. This aligns with evidence-informed professional learning, which indicates that teachers learn more effectively when training materials are directly tied to authentic classroom dilemmas and actionable procedures. By situating AI-related issues within everyday tasks (e.g., summarization, essay writing, and presentation design), the module likely reduced conceptual distance and increased transferability to practice.

Second, the shift in attitudes from reactive anxiety to proactive caution can be interpreted through the lens of professional agency. Rather than positioning teachers as passive recipients of technological disruption, the training frames them as ethical agents capable of governing AI use through classroom norms and assessment design. The contemporary fiqh framework supported by maqāṣid al-sharī'ah and fiqh maxims contributes to this agency by providing a principled basis for deliberation about benefit (maṣlaḥah) and harm prevention (mafsadah). This is particularly relevant for PAI instruction, where moral reasoning and character formation are central educational aims.

Third, the reported gains in pedagogical skills especially the production of classroom AI policies and authentic assessment plans highlight that the module's strength lies in translating ethical reasoning into instructional routines. From a quality assurance perspective, such routines represent "embedded governance," where ethical standards are operationalized through measurable classroom practices (e.g., disclosure statements, process-based rubrics, drafting logs, oral verification, and source triangulation). These practices can reduce AI-assisted misconduct while preserving legitimate AI use for supportive purposes (e.g., brainstorming and language refinement).(Alwi et al., 2025)

Nevertheless, the constraints identified uneven digital literacy, time limitations, and partial institutional support suggest that training effects may be fragile without broader madrasah-level alignment. Sustainable implementation likely requires complementary policies, shared norms across subjects, and basic data-privacy guidance for platform use. In conclusion, the findings support the argument that case-based training grounded in contemporary fiqh can strengthen AI ethics competence among PAI teachers, particularly when it integrates normative reasoning with practical pedagogical tools and is reinforced by institutional governance.

4. Conclusion

This study concludes that a case-based training module grounded in contemporary fiqh has strong potential to enhance PAI teachers' competence in AI ethics at MTsN 1 Baubau when it is designed as an integrated professional learning intervention addressing knowledge, attitudes, and pedagogical practice. The findings indicate that teachers' understanding of operational ethical principles such as attribution and disclosure, academic integrity, data privacy precautions, and bias verification can be strengthened through realistic classroom cases and guided deliberation using maqāṣid al shariah, fiqh maxims, and maṣlaḥah–mafsadah reasoning. In addition, the training supports a shift in teachers' orientations from reactive concerns about AI to proactive ethical governance, reflected in greater professional agency to regulate AI use through classroom norms and instructional design. Importantly, the module facilitates the translation of ethical reasoning into concrete pedagogical outputs, including classroom AI use policies and authentic assessment designs that emphasize learning processes (drafting, reflection, oral checks, and source triangulation) rather than product-only evaluation. However, the study also highlights that sustained impact depends on enabling conditions, including baseline digital literacy support, sufficient time

for follow-up implementation, and madrasah-level policy alignment to ensure consistent norms across subjects. Overall, the study affirms that integrating Islamic normative reasoning with practical case based pedagogy offers a viable pathway to building responsible AI use in PAI education.

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