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Deep Learning Pedagogy and Students' Digital Moral Character in Indonesian Islamic Education

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Abstract

Digital communication exposes students to ethical challenges, including cyberbullying, uncivil interactions, and unverified information. This qualitative case study examines how deep-learning pedagogy is understood and enacted in Islamic Religious Education (PAI), and how participants perceive its contribution to students' digital moral character at SMP Muhammadiyah Tanjung Redeb, East Kalimantan, Indonesia. Data were generated through semi-structured interviews with the principal, two PAI teachers, and six students; classroom observations and observations of school-related WhatsApp interactions; and analysis of lesson plans, reflective journals, assignments, and school policy documents. Analysis followed Miles, Huberman, and Saldaña's interactive model. Source and method triangulation, member checking, and peer debriefing supported credibility. Four interrelated findings emerged. First, school leaders and teachers framed deep-learning pedagogy as a shift from memorization toward critical inquiry, contextual interpretation of Islamic teachings, and moral reflection. Second, lessons connected digital dilemmas with Islamic ethical principles through case analysis, group discussion, reflective journaling, and personal action commitments. Third, interview and observational accounts suggested greater caution in online communication and more deliberate information verification, although the design cannot establish causality or persistence. Fourth, implementation was constrained by students' preference for quick answers, uneven digital and critical literacy, limited instructional time, and inconsistent reinforcement at home. The study provides a context-specific account of how deep-learning pedagogy may connect Islamic moral concepts with everyday digital practices. Comparative and longitudinal research could examine how these practices are sustained across school and home contexts.

Keywords: Deep-Learning Pedagogy, Islamic Religious Education, Digital Moral Character, Digital Ethics, Qualitative Case Study

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1. Introduction

Digital platforms have become part of adolescents' everyday social and learning environments, but participation in these spaces requires more than operational digital skills. Students must judge source credibility, decide whether to share uncertain claims, manage disagreement, and consider how their words affect others. Recent scholarship consistently shows that digital citizenship is not limited to technical proficiency, but includes the ability to evaluate information, communicate respectfully, protect oneself and others, and participate responsibly in digital environments (Yustiana, 2026; Lu & Gu, 2024). A systematic review and meta-analysis of 46 studies further found that digital citizenship education had a small-to-moderate effect on reducing negative online behavior, while Internet self-efficacy, computer self-efficacy, social media experience, and Internet skills were important predictors of adolescents' digital citizenship (Lu & Gu, 2024). Complementing this, profile-based research with Korean adolescents showed that experience of digital citizenship education and Internet self-efficacy significantly predicted different forms of digital citizenship, which were also associated with differences in Internet ethics (Choi & Park, 2023). These findings caution against assuming that access to technology or awareness of rules alone produces responsible conduct, because responsible online behavior appears to depend on the cultivation of ethical judgment, self-efficacy, and context-sensitive participation (Estélles & Doyle, 2025; Harrison & Polizzi, 2021; Consoli, 2024).

Research on online safety education also indicates that this issue is not reducible to risk prevention. Reviewing 75 peer-reviewed journal articles, Estellés and Doyle identified four approaches to online safety education safeguarding, equipping, empowering, and resisting and found that limited concepts of digital citizenship and acritical views of technology remained dominant in the literature (Estélles & Doyle, 2025). This critique is reinforced by evidence that many internet safety programs remain only weakly aligned with the empirical dynamics of online harm and that rigorous evaluation of such programs is still limited (Finkelhor et al., 2020; Jones et al., 2023). Experimental evidence likewise suggests that school-based digital citizenship interventions can improve knowledge and self-efficacy, but do not automatically change broader outcomes such as civility, privacy behavior, or cyberbullying (Jones et al., 2023). For that reason, the pedagogical issue is not only whether students can avoid harm, but whether they are educated as reflective moral agents who can evaluate information, consider consequences, and exercise responsible judgment in digitally mediated interaction (Harrison & Polizzi, 2021; Mirra et al., 2022).

This question is particularly salient for Islamic Religious Education (Pendidikan Agama Islam, or PAI). Recent work in Islamic education argues that digital media has intensified ethical challenges such as hoaxes, cyberbullying, hate speech, and moral decline among youth, while also showing that Islamic ethical principles such as tabayyun, adab, honesty, and responsibility provide important normative resources for responding

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to such issues (Setiawan et al., 2025). Related scholarship further explains that, in digital contexts, adab concerns the ethics of producing and distributing information, whereas tabayyun requires the verification of information before it is shared (Mukhlis & Cahyadi, 2026). This line of argument is also consistent with work on responsible digital literacy in Muslim education, which emphasizes Qur'anic ethical principles of verification, responsible speech, and moral responsibility in knowledge acquisition (Nabriz et al., 2026). Accordingly, the educational significance of these principles lies not only in their normative status, but in how they are interpreted pedagogically and practiced in concrete digital situations (Setiawan et al., 2025; Mukhlis & Cahyadi, 2026).

Recent scholarship also shows that the intersection of digital literacy, Islamic education, and deep-learning pedagogy is not wholly unexplored. Studies in Islamic education have argued that digital literacy in PAI should integrate ethical dimensions and Islamic values rather than focus only on technical competence (Mukhlis & Cahyadi, 2026). In parallel, emerging work on deep learning in Islamic education describes it as an instructional orientation that moves beyond memorization toward meaningful, contextual, collaborative, inquiry-oriented, and reflective learning (Husna et al., 2025; Yayan et al., 2026). Quasi-experimental evidence from madrasah settings further reports that deep-learning pedagogy involved meaningful inquiry, collaborative discussion, role play, contextual interpretation, and reflection, and that the intervention group showed higher post-test engagement, although the authors caution against reading this as definitive causal proof because baseline scores were already higher (Saidah et al., 2026). Thus, recent studies justify a more careful claim: prior research has begun to address digital literacy and deep learning in Islamic education, but not yet in the specific processual way required here (Saidah et al., 2026; Husna et al., 2025).

The gap addressed here is therefore process-specific rather than a simple absence of prior research. Existing studies clarify that digital citizenship education can support responsible conduct, that online safety education often remains too narrow, and that Islamic education offers ethical resources for digital behavior, yet they do not specifically explain how deep-learning pedagogy is enacted in lower-secondary PAI around concrete digital moral dilemmas or how Islamic ethical concepts are mobilized during instruction in relation to students' everyday online practices (Lu & Gu, 2024; Estélles & Doyle, 2025; Mukhlis & Cahyadi, 2026; Saidah et al., 2026). Related reviews also emphasize the importance of integrating ethical awareness, responsible communication, empathy, rights and responsibilities, and critical participation into pedagogy, but note that more context-sensitive empirical research is still needed across educational and sociocultural settings (Yustiana, 2026). The gap, then, concerns the need for a closer account of the relationship between pedagogical practice, Islamic moral reasoning, and students' situated digital experiences (Yustiana, 2026; Husna et al., 2025).

This study examines SMP Muhammadiyah Tanjung Redeb in Berau Regency, East Kalimantan, Indonesia, where deep-learning strategies have been incorporated into PAI instruction to address students' digital moral challenges. In this article, deep-learning

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pedagogy refers to an instructional orientation that connects critical inquiry, contextual interpretation, reflection, and application to meaningful situations, consistent with recent formulations in Islamic education scholarship (Saidah et al., 2026; Husna et al., 2025; Yayan et al., 2026). It does not refer to computational deep learning used in artificial-intelligence systems. The study adopts a qualitative single-case design to understand how the approach is conceptualized and enacted in context, rather than to test causal efficacy or establish the prevalence of behavioral change; this delimitation is important given that prior intervention studies in related areas often report promising outcomes while still acknowledging limits in causal inference, transferability, or breadth of evaluated behavioral outcomes (Saidah et al., 2026; Jones et al., 2023; Saputra et al., 2025).

Three questions guide the inquiry: (1) how school leaders and PAI teachers conceptualize deep-learning pedagogy in relation to students' digital moral character, (2) how the approach is enacted to connect digital dilemmas with Islamic ethical principles, and (3) how participants describe perceived shifts in students' digital moral practices and the institutional, instructional, and home-related constraints shaping implementation. Such a focus is consistent with recent scholarship that highlights the pedagogical importance of teacher mediation, reflective dialogue, contextualized ethical learning, and the alignment of school-based digital citizenship with home and community contexts (Li et al., 2025; Yustiana, 2026; Saputra et al., 2025). The study's contribution, therefore, is an empirically grounded and context-specific account of how digital moral issues are interpreted within PAI through the connection between inquiry, scriptural reflection, and action commitments, while treating reported behavioral changes as situated accounts rather than direct proof of causal effect (Husna et al., 2025; Nabriz et al., 2026; Saidah et al., 2026).

2. Literature Review

2. 1. Deep-Learning Pedagogy

The distinction between deep and surface approaches to learning provides a useful starting point, but it requires careful interpretation in this study. In recent Islamic education scholarship, deep-learning pedagogy is generally described as learning that moves beyond memorization toward meaningful, contextual, collaborative, inquiry-oriented, and reflective engagement with knowledge, including its ethical application (Rahmawati et al., 2026). These perspectives are compatible with earlier distinctions between meaning-oriented and reproductive learning, yet they should not be treated as identical constructs or as proof that any particular teaching sequence will independently produce moral change (Yustiana, 2026; Ferdinan et al., 2026).

For analytical purposes, this article uses deep-learning pedagogy as a practice-based description of the instructional orientation documented in the case, rather than assuming

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that the school implements a universally standardized model. The relevant practices include the analysis of authentic digital dilemmas, open-ended questioning, collaborative inquiry, contextual interpretation of Islamic teachings, reflective journaling, and the formulation of action commitments, which are consistent with recent descriptions of meaningful inquiry, collaborative discussion, contextual interpretation, and reflection in Islamic learning settings (Yustiana, 2026; Rahmawati et al., 2026; Nashir et al., 2026). This distinction is important because the term deep learning can also refer to computational methods in artificial intelligence, a usage that appears in adjacent scholarship on AI literacy rather than pedagogy as an instructional orientation (Nabriz et al., 2026; Prihatiningtias et al., 2026). Recent studies of deep-learning pedagogy and related pedagogical innovation in Islamic education have examined student engagement, reflective understanding, and learning perceptions at different educational levels, but their outcomes and settings differ from the digital moral practices examined here (Yustiana, 2026; Rahmawati et al., 2026).

2. 2. Moral Formation

Lickona's framework of moral knowing, moral feeling, and moral action offers a useful conceptual lens for examining how moral education connects understanding, affective engagement, and conduct. Recent literature continues to treat these dimensions as relevant for curriculum integration and ethical reflection, while also showing that character education is strengthened when supported by school culture, leadership modelling, and technology-guided ethical learning (Rizky et al., 2026). In the present study, these dimensions are treated as sensitizing concepts for interpreting classroom activities, not as a linear sequence that inevitably culminates in stable character, especially because digital environments introduce algorithmic mediation, affective virality, and epistemic instability that complicate direct translation from moral understanding to conduct (Taufika et al., 2026).

Research on digital citizenship reinforces the need for this distinction. A systematic review and meta-analysis of 46 studies found that digital citizenship education was associated with a small-to-moderate reduction in negative online behavior, while Internet self-efficacy, computer self-efficacy, social media experience, and Internet skills were also important predictors of adolescents' digital citizenship (Lu & Gu, 2024). Related evidence also shows that digital citizenship education experience and Internet self-efficacy significantly shape adolescents' digital citizenship profiles, and that those profiles are associated with different levels of Internet ethics (Choi & Park, 2023). Taken together, these findings suggest that moral and digital education should not be evaluated solely by whether students can repeat rules, but also by how they reason about credibility, harm, rights, responsibilities, empathy, and competing choices in concrete online situations (Yustiana, 2026).

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2. 3. Islamic Ethical Reasoning

Islamic education provides a normative vocabulary for interpreting conduct, but those values require contextual interpretation when applied to digital interaction. Recent scholarship consistently identifies tabayyun, adab, honesty, and responsibility as central Islamic principles for responding to misinformation, harmful speech, and broader ethical dilemmas in digital media (Setiawan et al., 2025; Nabriz et al., 2026; Nurfadilah & Pebriana, 2026). In this article, tabayyun is therefore considered in relation to checking the credibility and context of information before accepting or circulating it, while adab al-kalam concerns the ethical quality of online speech and amanah concerns accountability for information and digital conduct (Nabriz et al., 2026; Mukhlis & Cahyadi, 2026; Assyabirra & Mulia, 2025).

These principles are not treated as interchangeable with digital literacy. Digital literacy is described in the literature as the capacity to access, evaluate, use, and produce digital information, whereas Islamic ethical principles provide normative grounds for how those capacities should be exercised (Mukhlis & Cahyadi, 2026; Ferdinan et al., 2026; Mukhlis & Cahyadi, 2026). In this article, "digital moral character" is therefore used as an interpretive label for values as described and enacted in particular digital situations, not as a validated psychometric construct or evidence of a stable moral disposition, which is consistent with recent school-based studies that describe their findings as contextual and non-causal (Ferdinan et al., 2026; Mustari et al., 2026).

2. 4. Analytical Orientation

Recent studies address several adjacent parts of this problem. Research across Islamic secondary-school contexts in Indonesia and Thailand shows that digital literacy enactment is context-sensitive and pedagogically mediated, with institutional readiness and teacher guidance shaping distinct pathways of digital inquiry, reflection, and ethical framing (Ferdinan et al., 2026). Related studies further show that digital literacy can strengthen character education when embedded in Islamic ethical guidance, institutional policy, teacher mediation, and repeated behavioural reinforcement, while AI-related literacy in Islamic schools depends strongly on pedagogical design, teacher development, and contextual supervision (Nashir et al., 2026; Mustari et al., 2026; Rahmawati et al., 2026).

Against this background, the specific gap addressed by this study concerns how deep-learning pedagogy is enacted in lower-secondary PAI around concrete digital moral dilemmas; how teachers and students mobilize Islamic ethical principles during that process; and how participants interpret perceived shifts in digital practices alongside instructional, institutional, and home-related constraints. This focus is justified because existing studies differ in setting, approach, and outcome, and several explicitly note

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contextual, descriptive, or short-term limits rather than validated evidence of lasting behavioural change (Ferdinan et al., 2026; Prihatiningtias et al., 2026).

3. Research Methods

3.1 Research Design

This study employed a qualitative approach with a single-case study design (Yin, 2018) to gain an in-depth, contextual understanding of deep learning implementation in PAI at SMP Muhammadiyah Tanjung Redeb. The qualitative design was chosen because the phenomena under investigation—pedagogical interactions, teacher perceptions, and moral behavioral changes—are complex, context-dependent, and best understood through naturalistic inquiry.

3.2 Research Site and Participants

The study was conducted at SMP Muhammadiyah Tanjung Redeb, located in Berau Regency, East Kalimantan, Indonesia. Purposive sampling was used to select key informants who possessed direct knowledge and involvement in PAI instructional processes:

a. School Principal (1): Provided institutional perspectives, educational policy context, and general observations of student behavior.
b. PAI Teachers (2): Provided detailed accounts of lesson planning, pedagogical execution, assessment methods, and classroom observations.
c. Students (6): Selected from Grades VII, VIII, and IX to represent diverse academic backgrounds and digital engagement levels, providing accounts of their learning experiences and behavioral reflections.

3.3 Data Collection Techniques

Data were gathered over a multi-month field observation period using three primary qualitative techniques:

a. In-Depth Interviews: Semi-structured interviews were conducted with the principal, teachers, and students. Protocols focused on understandings of deep learning, instructional techniques, changes in student digital behavior, and perceived obstacles.
b. Participant Observation: Non-participant classroom observations were carried out during PAI instruction, focusing on teacher-student interactions, discussion dynamics, case-study analysis, and reflective exercises. Observations extended to digital spaces, specifically student behavior in class communication groups (WhatsApp).

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c. Document Analysis: Instructional artifacts, including lesson plans (*RPP/Modul Ajar*), student reflective journals, written assignments, and school policy guidelines, were reviewed to corroborate interview and observational findings.

3.4 Data Analysis

Data were analyzed following the interactive analysis model of Miles, Huberman, and Saldana (2014), comprising three concurrent streams:

a. Data Condensation: Raw field notes, interview transcripts, and document summaries were transcribed, coded, and categorized according to central research themes (e.g., teacher understanding, instructional practices, digital ethics outcomes, and implementation barriers).
b. Data Display: Categorized data were structured into thematic matrices and narrative summaries to identify patterns, relationships, and contextual variations.
c. Conclusion Drawing and Verification: Preliminary conclusions were continuously checked against field data, refined, and validated throughout the study.

3.5 Trustworthiness and Validity

To ensure rigor and credibility (*trustworthiness*), Lincoln and Guba's evaluative criteria were applied:

a. Triangulation: Source triangulation (comparing data from principal, teachers, and students) and method triangulation (cross-verifying interviews, observations, and documents).
b. Member Checking: Interview transcripts and thematic interpretations were reviewed with key informants to ensure accurate representation.
c. Peer Debriefing: Analytic categories and findings were periodically reviewed with senior education colleagues.

4. Results

The findings are organized around the three research questions: how school leaders and PAI teachers conceptualize deep-learning pedagogy; how it is enacted to connect digital dilemmas with Islamic ethical principles; and how participants describe perceived shifts in digital practices and the constraints shaping implementation. The results distinguish participants' accounts from interpretations of what those accounts may indicate.

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4.1. Conceptualizations of Deep-Learning Pedagogy

Across the accounts reported in this study, the principal and PAI teachers described deep learning as an orientation that moves instruction beyond memorization toward the interpretation of religious teachings in relation to students' lived experiences. The lead PAI teacher explained:

> "*In my view, deep learning is instruction that does not stop at memorization; rather, it enables students to connect Qur'anic verses or hadiths with their lived experiences. Thus, they do not merely know the content, but truly understand and practice it, including in the digital realm."*

The principal expressed a related institutional rationale: "The deep learning approach is essential because today's students live in a digital world. Religious values must be deeply understood through concrete examples and experiences, not just told. Teachers must encourage students to think critically and consider the consequences of their actions."

The two accounts converge around contextualization and reflection, although they emphasize different levels of practice. The teacher foregrounds the instructional connection between scriptural content and students' experiences, whereas the principal emphasizes the school's responsibility to create conditions for critical consideration of consequences. The participant summary also presents students as valuing discussion and problem-solving over passive listening and copying notes. Taken together, these accounts indicate a shared pedagogical aspiration, not proof that all participants understand the approach identically or that moral dispositions have already become stable.

Table 1. Participants' reported understandings of deep-learning pedagogy

Participant category	Reported understanding	Analytical significance
School principal	Religious values should be considered through concrete examples, critical thinking, and reflection on consequences in digital contexts.	An institutional aspiration to connect moral education with students' digital lives.
PAI teachers	Instruction should move beyond memorization and connect Qur'anic verses or hadiths with contemporary situations.	Contextual interpretation as a bridge between religious knowledge and practical judgment.

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Students	The participant summary describes meaningful discussion and problem-solving as preferable to passive listening and note copying.	The reported value of participation and personal relevance; the available narrative provides no direct student quotation on this point.

4.2. Enacting Deep-Learning Pedagogy in PAI

The reported instructional sequence begins with a digital dilemma and proceeds through collective interpretation, reflection, and a proposed action. Examples described in the study include online harassment, unverified viral information, and disrespectful comments on social media. Teachers are described as using open-ended questions to prompt students to consider why harmful communication occurs and what ethical consequences may follow from sharing unverified content.

The next stage involves small-group discussion in which students relate the scenario to Islamic ethical principles, including tabayyun and adab al-kalam. Reflective journaling is described as an opportunity for students to articulate their responses to online toxicity and consider how Islamic teachings might inform their choices. The lesson then moves toward personal action commitments, such as checking information before sharing it or using constructive language in messaging groups.

This sequence can be interpreted as an attempt to connect moral understanding with reflection and possible action. However, the three phases should be treated as an analytical description of the practices reported in this case, rather than as a validated model or a linear process that necessarily produces behavioral change. Assessment was also described as including reflective portfolios, performance tasks, and teacher observation. However, the findings available for analysis do not include direct examples from these materials or specify how they were used to assess learning. The interpretation therefore concerns the reported assessment practices, rather than demonstrated learning outcomes.

4.3. Participants' Accounts of Digital Moral Practices

Participants described several indications of more deliberate digital conduct. These accounts differ by source: the two student quotations express personal perceptions, while the reported changes in WhatsApp group interaction come from the principal and teachers. They therefore provide suggestive evidence of perceived change, but they should not be treated as equivalent forms of measurement.

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Table 2. Reported or observed patterns in students' digital practices

Domain	Evidence in participant accounts	Interpretation and evidential boundary
Online self-regulation	Student A stated: "Now I think twice before posting anything on social media because I fear making mistakes that could cause harm."	The quotation indicates reported caution and concern about consequences; it does not establish how consistently this is enacted across contexts.
Information verification	Student B stated: "It has been quite impactful. I am now more selective with content and verify sources first instead of immediately forwarding messages."	The account suggests that tabayyun has become a reference for information sharing; independent evidence of frequency or accuracy of verification is not presented.
WhatsApp group interaction	The principal reported fewer negative comments and minor interpersonal conflicts after case analysis and reflection were introduced.	This is an institutional observation of perceived improvement. The manuscript does not specify a baseline, counting procedure, or comparison period to substantiate a measurable decrease.

These accounts suggest that the pedagogical activities may have made ethical considerations more salient when students think about posting, forwarding information, or responding to others. The evidence is strongest as an account of participants' perceptions and observations. It does not establish that the approach caused the reported shifts, that all students changed in the same way, or that the practices persisted beyond the period of observation.

4.4. Constraints Shaping Implementation

Four interrelated constraints were identified in the study. First, some students reportedly sought quick answers through search engines or AI tools when asked to analyze complex cases, limiting the opportunity for independent reasoning. Second, teachers described variation in students' reading stamina and critical literacy, particularly when students were expected to interpret longer texts or articulate a structured ethical argument. Third, teachers considered the available PAI instructional time insufficient for extended case analysis, group discussion, and reflection. Fourth,

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teachers raised concerns about the continuity of digital guidance between school and home.

These constraints qualify the positive accounts above. The difficulty is not simply that students lack moral knowledge; it is that applying ethical principles requires time, interpretive support, information-evaluation skills, and opportunities to practice beyond a single lesson. The home-school issue, however, is reported through the school participants' perspectives. Because parents were not included among the listed informants, the available data do not independently establish how families supervise digital activity or how students experience that supervision. Overall, the findings answer the research questions by showing how deep-learning pedagogy is understood as contextual and reflective teaching, how digital dilemmas are linked to Islamic ethical principles through a reported sequence of activities, and how participants describe possible changes alongside persistent implementation constraints. The findings support a contextual explanation of practice, not a general claim of proven effectiveness.

5. Discussion

The findings are best understood as a context-specific account of pedagogical practice and participants' interpretations, rather than as an evaluation establishing causal effectiveness. This positioning is consistent with recent scholarship showing that contextual digital-ethics learning in Islamic education is often discussed as a pedagogical orientation, curriculum response, or interpretive framework, not automatically as proof of durable behavioral effects (Muksin & Afandi, 2025; Gijbels, 2026). Three points emerge from the analysis: the importance of contextualizing PAI, the instructional work required to connect ethical concepts with digital dilemmas, and the conditions that limit the translation of classroom reflection into everyday conduct (Agung & Sa'diyah, 2026; Muksin & Afandi, 2025; Susanto et al., 2026).

5.1. Repositioning PAI from Recitation toward Contextual Moral Reasoning

The principal's and teacher's accounts frame deep-learning pedagogy as a shift from recalling religious content toward interpreting it in relation to contemporary digital situations. Recent studies on deep learning in PAI likewise describe a movement beyond memorization toward meaningful, contextual, inquiry-oriented, and reflective learning that connects Islamic sources with contemporary problems (Husna et al., 2025; Agung & Sa'diyah, 2026; Susanto et al., 2026; Ma'rifah et al., 2026). This aligns with broader work on deep and surface approaches, where surface learning emphasizes recall, while deep learning emphasizes understanding, critical engagement, and application in meaningful situations (Shamuratova, 2024; Gijbels, 2026).

In this case, the significance of the shift lies not in rejecting memorization as such, but in resisting its treatment as a sufficient indicator of moral learning. Recent PAI research

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reports a gap between students' cognitive understanding of Islamic teachings and their consistent application in everyday life, while conventional text-centered instruction can transmit normative knowledge without adequately developing ethical reasoning and social responsibility (Susanto et al., 2026; Ma'rifah et al., 2026; Muksin & Afandi, 2025). Students may be able to reproduce a principle such as tabayyun without being prepared to apply it when information circulates rapidly or when peer expectations encourage immediate sharing, especially because the actual practice of tabayyun in digital settings is often constrained by time pressure, emotional reactions, and assumptions that circulating information is already trustworthy (Alami & Azka, 2026; Munawaroh & Marlina, 2025).

This interpretation should remain bounded by the case. The study does not establish that PAI in general is predominantly teacher-centered, nor that the practices described are unique to this school. However, comparable studies do report that many PAI settings remain lecture- and memorization-oriented and insufficiently connected to social media, digital interaction, and contextual moral challenges, which makes the present case relevant as a contextual and process-oriented illustration rather than a universal claim (Susanto et al., 2026; Muksin & Afandi, 2025).

5.2 Connecting Islamic Ethical Principles with Pedagogical Practice

The reported sequence of digital case analysis, open-ended questioning, collaborative inquiry, scriptural interpretation, reflective journaling, and action commitments provides a plausible pedagogical route for bringing ethical principles into discussion of everyday digital choices. Recent literature supports the use of case studies, ethical verse interpretation, project-based simulations, collaborative activity, and reflective learning to connect Islamic values with contextual digital issues (Muksin & Afandi, 2025; Husna et al., 2025; Shamuratova, 2024; Costa & Oliver, 2025). In this framing, the sequence is best read as an interpretive and pedagogical pathway that helps students understand issues, deliberate about consequences, and formulate responses, rather than as evidence that moral development unfolds in a fixed sequence or that action commitments become stable habits (Banurea & Siregar, 2026; Gijbels, 2026).

The Islamic concepts are important because they provide a normative language for deliberation. Tabayyun has been formulated in recent studies as caution, verification, selectivity toward sources and content, and moral responsibility in receiving and disseminating information (Alami & Azka, 2026; Banurea & Siregar, 2026; Nabriz et al., 2026). Adab al-kalam and related communication ethics are likewise described as requiring politeness, restraint, empathy, and avoidance of provocation or hidden slander in digital interaction (Nasrullah, 2025; Munawaroh & Marlina, 2025). Amanah is also presented as a key foundation of honest and responsible digital conduct within Islamic digital ethics frameworks (Nasrullah, 2025; Muksin & Afandi, 2025; Nurfadilah & Pebriana, 2026).

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Their pedagogical value depends on whether students are supported in interpreting these principles in concrete situations. Recent studies emphasize that ethical learning is strengthened when learners engage real-world dilemmas, contextual case studies, reflective dialogue, and simulated decision-making rather than receiving abstract prohibitions alone (Ma'rifah et al., 2026; Muchtarom et al., 2026; Costa & Oliver, 2025). Because the available findings here do not include direct excerpts from journals or assignments, the interpretation is more defensibly focused on the reported instructional sequence than on the demonstrable depth of each student's moral reasoning (Gijbels, 2026).

5.3 Interpreting Reported Changes without Overstating Effectiveness

The student accounts of thinking before posting and checking sources, together with the principal's observation of fewer conflicts in WhatsApp groups, suggest that participants perceived a more deliberate approach to online conduct. This interpretation is consistent with studies showing that digital citizenship and AI-literacy interventions can improve critical appraisal, verification-oriented reasoning, and ethical decision-making, while recent Islamic digital ethics scholarship also treats tabayyun as a basis for responsible information behavior (Ignat, 2026; Hossain, 2024; Alami & Azka, 2026). Related work with youth digital literacies further argues that ethical online conduct is strengthened by deliberative practices, informed decision-making, and scaffolded digital reasoning (Costa & Oliver, 2025).

Nevertheless, the findings do not show that deep-learning pedagogy independently caused the reported changes. Recent methodological reflections on deep learning research note that much of the field has relied on correlational and self-report designs, and that changes in learning approaches are shaped by context rather than unfolding uniformly across settings (Gijbels, 2026). In addition, evidence from social media ethics research shows that awareness of tabayyun and ethical communication does not automatically translate into consistent practice because implementation is situational, negotiated, and affected by digital culture, emotional pressure, and popularity dynamics (Munawaroh & Marlina, 2025).

The defensible claim, therefore, is that participants described indications of greater caution and verification, not that the approach has been proven effective. That cautious interpretation fits broader evidence showing that some interventions improve measured critical thinking or online engagement, but sustained transfer depends on context, task design, and support structures (Ignat, 2026; Khong & Tanner, 2024; Alhammadi, 2021).

5.4 Implementation Constraints as Conditions of Moral Learning

The reported use of search engines or AI tools to obtain quick answers reveals a tension between information access and the development of independent judgment.

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Recent research on AI in education shows that students often use generative AI primarily for task completion rather than deeper understanding, while responsible AI literacy requires critical thinking, ethical decision-making, and the ability to evaluate generated content (Muchtarom et al., 2026; Hossain, 2024; Muchtarom et al., 2026; Nabriz et al., 2026). Other studies likewise stress that student agency, reflective use, and critical appraisal are crucial if AI-supported learning is to move from receptive dependence toward deeper engagement (Yang et al., 2024).

The instructional implication is to make reasoning visible through source comparison, explanation of decisions, and reflection on consequences, rather than relying only on final answers. This is consistent with intervention research showing gains when students are explicitly taught to discriminate AI-generated from human-produced content, and with framework-based work that recommends structured curriculum support for critical and responsible AI engagement (Ignat, 2026; Hossain, 2024).

Limited instructional time and variation in reading and critical literacy further indicate that reflective moral learning requires scaffolding. Recent work on digital literacy and digital ethics emphasizes that such capacities require thoughtful scaffolding, mentoring, contextual curriculum design, and teacher support rather than one-off moral messaging (Costa & Oliver, 2025; Khong & Tanner, 2024; Muchtarom et al., 2026). The concern about home-school continuity also matters, but in the absence of parent data it is more accurate to present this as a perceived implementation condition, especially because recent Islamic digital ethics studies also highlight the importance of family roles and parental reinforcement at a conceptual level rather than as evidence from this case itself (Nurfadilah & Pebriana, 2026).

6. Conclusion

This study examined how school leaders and Islamic Religious Education (PAI) teachers understood deep-learning pedagogy, how it was enacted around digital moral dilemmas, and how participants described perceived changes and implementation constraints at SMP Muhammadiyah Tanjung Redeb. Participants framed the approach as a move beyond recitation toward contextual interpretation of Islamic teachings. Reported practices included digital case analysis, open-ended questioning, collaborative discussion, reflection on principles such as tabayyun and adab al-kalam, and personal action commitments. Student accounts and school leaders' observations suggested greater caution in online communication and more deliberate information verification.

The findings suggest that connecting Islamic ethical concepts with digital decisions depends not only on classroom activities but also on students' reading and critical literacy, available instructional time, and continuity between school and home. The study contributes a context-specific account of how PAI can create opportunities for moral deliberation about digital conduct, while also showing the constraints that complicate this process. Because the evidence comes from a single case and relies on participant accounts and observations without a systematic baseline or longitudinal follow-up, it

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does not establish causal effectiveness or lasting character change. Further research should examine students' reasoning through direct analysis of learning artifacts and observed practice, include family perspectives where appropriate, and compare cases over time.

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