

Moodle Learning Management System as a Catalyst for Student-Centered Learning in Islamic Religious Education: A Digital Pedagogy and Character Education Perspective

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ABSTRACT

The exponential advancement of information and communication technology in the digital era necessitates a fundamental paradigm shift in educational practices, particularly within the context of Islamic Religious Education (PAI). This study aims to comprehensively analyze the implementation of the Modular Object-Oriented Dynamic Learning Environment (Moodle) as a Learning Management System (LMS) to facilitate Student-Centered Learning (SCL) in PAI. Employing a systematic literature review approach, this research synthesizes data from Scopus-indexed articles, national journals, as well as dissertations and theses from Indonesian Islamic higher education institutions, to explore the intersection of digital pedagogy, character education, and technological integration. The findings reveal that Moodle effectively transforms the traditional, teacher-centered PAI learning environment into an interactive, flexible, and learner-driven ecosystem. By optimizing features such as asynchronous forums, interactive quizzes, project-based assignments, and collaborative glossaries, educators can facilitate the achievement of cognitive, affective, and psychomotor competencies simultaneously. Furthermore, the integration of Moodle significantly enhances students' critical thinking, self-regulated learning independence, and digital literacy while providing a robust platform for internalizing Islamic values and religious moderation amidst the threat of digital radicalism. This study concludes that the strategic implementation of Moodle-based SCL, supported by adequate Technological Pedagogical Content Knowledge (TPACK) among educators, systemic harmonization of national policies, and adaptive infrastructural frameworks, offers a comprehensive solution to the contemporary challenges of Islamic education, successfully bridging the gap between moral instruction and digital innovation.

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Introduction

Islamic Religious Education (PAI) constitutes a fundamental pillar within the national education framework, entrusted with the critical mandate of not merely transmitting religious knowledge, but concurrently inculcating moral, ethical, and spiritual paradigms to cultivate individuals possessing profound faith, piety, and noble character. (Zahra, 2024) Amidst the relentless current of technological disruption characterizing the Fourth Industrial Revolution and the global transition toward Society 5.0, the international and national educational landscapes are undergoing massive transformations. These shifts compel educational institutions to adapt rapidly by digitizing their learning ecosystems, moving away from archaic models toward dynamic, digitally mediated frameworks. (Erik Novianto & Nur Hidayat, 2023)

Strategic policies at the national level, most notably the Emancipated Curriculum (*Kurikulum Merdeka*) initiated by the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek), have accelerated this transformative process. This curriculum framework explicitly grants educators greater autonomous flexibility to engineer learning environments that are fundamentally oriented toward Student-Centered Learning (SCL) (Rohman et al., 2026), allowing for diverse intracurricular learning where content is optimized to give students sufficient time to deepen concepts and strengthen core competencies.

Nevertheless, the empirical reality observed in educational institutions presents a stark anomaly. The implementation of PAI instruction across various educational tiers – ranging from secondary schools to higher education institutions – remains frequently shackled by conventional, highly teacher-centered approaches. (Rohman et al., 2026) Within this antiquated paradigm, learners are predominantly positioned as passive receptacles of information through monologic lectures and dogmatic memorization, which ultimately fails to stimulate their critical faculties and intellectual autonomy in the digital age. This condition engenders a profound cognitive dissonance between the inherent characteristics of the digital native generation—who are naturally accustomed to instantaneous, interactive, and globally networked information access—and orthodox pedagogical practices that lack the necessary stimuli for inquiry and the exploration of spiritual meaning. The introduction of the Emancipated Curriculum aims to foster resilience and adaptability, yet empirical research indicates that educators, particularly in rural areas, encounter systemic barriers such as inadequate infrastructure, isolation, and poor professional training, making the realization of student-centered digital pedagogy exceedingly difficult.

The gap analysis underpinning this scholarly investigation highlights a fundamental discrepancy between the anticipated ideal state and the empirical reality within the domain of technological integration in Islamic education. The ideal condition dictates that the utilization of a Learning Management System (LMS) or e-learning platform in PAI should not merely digitize cognitive processes; rather, it must comprehensively cultivate religious character, affective intelligence, and the psychomotor proficiencies required for Islamic

rituals.(Khairul Amin & Juni Erpida Nasution, 2025) However, preceding literature examining digital pedagogical innovations has frequently compartmentalized these elements, isolating technical integration from the variables of character formation. The majority of contemporary studies tend to focus exclusively on quantitative metrics of cognitive effectiveness and learning outcomes, failing to provide a theoretical or practical synthesis regarding how the technical features of an LMS can be pedagogically engineered to internalize the values of religious moderation. A secondary gap lies in the critically low levels of Technological Pedagogical Content Knowledge (TPACK) among educators. Although technological infrastructure is gradually being facilitated, numerous educators continue to misuse the LMS, reducing it to a static repository for Portable Document Format (PDF) files rather than exploiting it as an interactive discursive arena that stimulates collaboration, critical inquiry, and complex problem-solving. (Digital Islamic Education Learning in Secondary Schools, 2026)

The novelty and state-of-the-art framework of this research are constructed upon the foundation of a contemporary literature review encompassing global bibliometric data indexed in Scopus, nationally accredited journal articles, and academic dissertations and theses from various State Islamic Higher Education Institutions in Indonesia. The global research trajectory over the past decade (2010–2025) decisively confirms that the Moodle (Modular Object-Oriented Dynamic Learning Environment) platform dominates the discourse on SCL-based e-learning due to its architecture, which is firmly grounded in social constructivism. At the national level, definitive academic inquiries—such as the thesis by Rahmayanti at IAIN Kediri, which demonstrated the absolute feasibility and efficacy of integrating the Moodle LMS with the Flipped Classroom model for remote PAI digital transformation—validate this premise.(Rahmayanti, 2021) This is further reinforced by Ramli's dissertation at UIN Antasari, which concluded that Moodle-based e-learning in *Fiqh* (Islamic jurisprudence) courses possesses high methodological effectiveness and appeal in reconstructing the student learning experience.(Maulidiya et al., 2026)

Similarly, collective academic assertions underscore the urgency of designing SCL media that prioritize an independent, contextual Mastery Learning approach that is highly adaptive to the demands of the Emancipated Curriculum. Across broader scientific publications, Moodle is consistently reported to possess transformational leverage in enhancing self-regulated learning, active participation, and dialogic interactivity through the comprehensive orchestration of its features, ranging from asynchronous discussion forums to quizzes embedded with automated feedback.(M. RAMLI, 2019)

Based on the formulation of these analytical gaps and the state-of-the-art literature, this report is systematically structured with the primary objective of analyzing, synthesizing, and formulating strategies to optimize the Moodle LMS as a catalyst medium for Student-Centered Learning in Islamic Religious Education.(Afriansyah et al., 2026) Specifically, this research seeks to deconstruct how the technical capabilities embedded within Moodle can be instructionally engineered to not only achieve cognitive targets (Higher-Order Thinking Skills) but also to internalize the affective traits of Islamic character, foster religious moderation, and facilitate the precise evaluation of psychomotor skills amidst the complexities of digital disruption.

Method

This scholarly investigation employs a qualitative descriptive approach, elaborated through a Systematic Literature Review (SLR) method adopting the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) conceptual review protocol.

The specification of this research is explanatory and analytical, concentrating on the dissection of conceptual trends, the mapping of instructional strategies, and the identification of systemic challenges inherent in the utilization of the Moodle LMS as an SCL medium in Islamic Religious Education.

The data collection approach was executed heuristically through the tracing of academic documents across reputable databases. This encompasses international literature indexed in Scopus (publication range 2010–2025), (Soibatul Aslamiah Nasution & Rifka Haida Rahma, 2026) nationally accredited Sinta journals, the Garuda portal, and a specific, targeted compilation of dissertations, theses, and undergraduate papers extracted from the institutional repositories of Islamic higher education institutions in Indonesia. Notable inclusions in this systematic review are empirical studies from UIN Sunan Kalijaga, UIN Ar-Raniry, UIN Antasari, and IAIN Kediri, specifically analyzing landmark works such as Rahmayanti's thesis on Moodle-based Flipped Classrooms and Ramli's dissertation on *Fiqh* e-learning development. The data analysis technique adhered to a contextual thematic analysis framework. Extracted secondary data were subsequently reduced to eliminate methodological distortions and logically categorized into several taxonomic clusters, namely: digital pedagogical transformation, the efficacy of Moodle's architecture, and the internalization of spiritual character and moderation. These clusters were then critically synthesized to formulate theoretical novelty regarding a holistic Moodle-based SCL engineering strategy.

Results and Discussion

1. The Dynamics and Transformation of PAI Digital Pedagogy

The global educational landscape is currently witnessing a tectonic shift regarding the distribution of religious authority due to the massive penetration of information technology. (Maemonah, 2022) Prior to the digital disruption era, the authority to convey Islamic teachings within formal educational contexts was strictly monopolized by the physical teacher inside the classroom. However, the democratization of information has presently disseminated theological sources, Sharia law, and Islamic history across the cyberspace continuum. Many young people now obtain religious knowledge from digital sources that may lack robust scientific or theological foundations, such as social media content or unverified blogs. This condition introduces the severe potential for the emergence of narrow, exclusive, and even radical religious understandings. Consequently, educational institutions are coerced into dismantling and restructuring their pedagogical approaches. The existential transition from a teacher-centered to a student-centered learning approach in PAI is no longer a mere methodological trend; it is an epistemological imperative required to safeguard the intellectual integrity (*hifz al-'aql*) of the students. (Neni et al., 2024)

Based on an analysis of various empirical studies and religious dissertations, the transformation of PAI in secondary schools and higher education has incrementally gravitated toward SCL practices through the orchestration of collaborative learning, communal ethical reflection, and contextual learning based on real-world case studies. However, academic literature delivers a stern caveat: the digitization of PAI must not be reduced solely to the "digitization of content" — a reductive practice

wherein teachers merely upload printed books into digital formats without any instructional modification. Conversely, Islamic education must ascend toward the apex of digital pedagogy, wherein technology is positioned as a catalytic mediator to ignite inquiry and facilitate the internalization of the esoteric meanings embedded within the teaching materials. It is within this constellation that the Technological Pedagogical Content Knowledge (TPACK) competency framework asserts its prominence. PAI educators are required to possess an orchestrated intelligence in seamlessly amalgamating the operational mastery of the LMS (Technology), the selection of appropriate active learning models (Pedagogy), and the profound interpretation of Sharia literature (Content). Devoid of a sufficient TPACK foundation, any technological invention – no matter how advanced Moodle may be – will inevitably have its function reduced to a static data silo, entirely devoid of intellectual dialogue and failing to meet the developmental needs of the digital native generation. (Maulidiya et al., 2026)

2. Bibliometric Mapping and Current Literature Trends

To comprehend the urgency and trajectory of research regarding the integration of SCL and technology in PAI, an examination of bibliometric mapping offers highly solid empirical insights. A Systematic Literature Review examining Scopus data from the 2010–2025 period highlighting the digital transformation of PAI reveals an exponential surge in publication trends. This spike was particularly pronounced during the 2020–2022 interval, a period when hybrid learning models transitioned into a sociological inevitability following global educational disruptions. Demographically, researchers from Indonesia dominated global academic contributions, accounting for 44.7% of publications, followed by Malaysia at 25.5%. (Ardhitya Furqon Wicaksono, 2025) This statistical dominance forcefully underscores the dedication of Muslim-majority nations in Southeast Asia to striking an equilibrium between technological modernization and the preservation of Islamic scholarly traditions. Thematic cluster mapping employing VOSviewer software on literature associated with SCL, digital literacy, and virtual *da'wah* visually demonstrates that keywords such as Moodle, e-learning, and Mobile Learning are securely positioned at the epicenter of the research constellation. (Sarwoedi, 2025)

This trend confirms that the educational ecosystem is undergoing a radical metamorphosis. Dissertation research authored by scholars in Indonesia coherently validates the efficacy of the Moodle system. When the SCL learning model is integrated with a digital platform, it yields statistical significance proving drastic improvements in parameters corresponding to student motivation, scientific literacy, and learning autonomy. Collectively, this bibliometric narrative declares that the discourse surrounding the utilization of Moodle in PAI is no longer stalled at the justification of whether technology is necessary, but has decisively advanced to the methodological discourse of how to meticulously engineer such technology to shape character and cognition concurrently. (Mohammad Nabil, 2026)

3. Design and Implementation of Moodle-Based SCL in PAI

Within the architectural framework of SCL, Moodle emerges as a learning management software possessing unparalleled adaptive capabilities. Empirical experimentation across *madrasahs*, Islamic boarding schools, and universities demonstrates that the adoption of Moodle substantially elevates cognitive outputs, intrinsic motivation, and learning autonomy through the deployment of Blended Learning and Flipped Classroom models. (Nabila Khairiniza, 2026)

In a Flipped Classroom scenario—as detailed extensively in Rahmayanti's empirical research at IAIN Kediri investigating the digital transformation of distance learning in the new normal era—the mechanical flow of learning is radically deconstructed. The educator distributes essential materials, such as video demonstrations of worship rituals, historical infographics, and textual religious edicts via Moodle. Learners are expected to study these materials independently at home asynchronously, long before the synchronous interaction commences. This methodology deconstructs an inherently inefficient temporal hierarchy; the duration of the synchronous class meeting is no longer squandered on theoretical lectures. Instead, it is exclusively reserved for higher-order cognitive activities, including collaborative investigation, the analysis of contemporary jurisprudence, social ethics debates, and the clarification of theological misconceptions. (Rahmayanti, 2021)

Table 1 provides a comprehensive comparison outlining the shift in instructional paradigms from a traditional behavioristic model toward a Moodle-based SCL ecosystem, aligning perfectly with the overarching goals of the Emancipated Curriculum to foster student independence and critical thinking.

Instructional Parameter	Conventional Paradigm (Teacher-Centered)	SCL Paradigm Based on LMS Moodle
Center of Authority	The teacher acts as the sole, absolute distributor of knowledge.	The teacher acts as a learning architect, mentor, and digital curator.
Position of the Learner	A passive entity focused exclusively on rote learning and memorization.	An active constructor of knowledge, critical analyst, and producer of ideas.
Material Accessibility	Exclusive to school hours, utilizing highly limited printed textbooks.	Ubiquitous (accessible anytime, anywhere) via multimedia modules and hyperlinks.
Evaluation Mechanism	Scheduled formative and	Continuous evaluation
Instructional Parameter	Conventional Paradigm (Teacher-Centered)	SCL Paradigm Based on LMS Moodle

	terminal assessments with delayed feedback.	summative (real-time quizzes), precise analytics, and instantaneous feedback.
Dimension of Interaction	Monologic and unidirectional (teacher dominating the student).	Polylogic and communal (peer collaboration, asynchronous forums, virtual debates).

The design of blended learning utilizing Moodle completely shatters the physical boundaries of space and the equilibrium of time, thereby introducing a highly fluid continuity to religious education. The interactive modules assembled within this system offer extensive room for differentiated instruction, seamlessly adapting to the varying learning tempos and modalities of individual students. (Rahadian Zainul & Muhammad Adri, 2026) This psychological flexibility actively invites learners to replay a video explaining Qur'anic recitation rules or reread the historiography of the Prophet without the slightest intimidation of time constraints, serving as an absolute prerequisite for cultivating lifelong learning skills.

4. Optimization of Moodle Features for Holistic PAI Learning

The tactical superiority of Moodle as an SCL medium in PAI is not rooted in the sheer complexity of its programming code, but rather in the extreme plasticity of its features, which can be highly calibrated to comprehensively touch upon the three core educational domains: cognitive, affective, and psychomotor. The optimization of these technical features is descriptively synthesized below:

The Optimization of Asynchronous Discussion Forums The forum feature acts as the beating heart of the community of inquiry in digital learning. For PAI, this feature is operationalized as an arena for Problem-Based Learning concerning the dialectics of contemporary issues. A teacher can ignite a discussion by introducing a dilemmatic case study – for instance, the Islamic jurisprudence regarding digital finance or the ethics of navigating social media – and mandating that students construct arguments firmly grounded in the deductive reasoning of the Qur'an and Hadith. This forum praxis is the true representation of the spirit of social constructivism; learners are forced to read their peers' arguments, formulate antitheses, and elegantly rebut them. This latently fosters *adab al-ikhtilaf* (the ethics of respectfully disagreeing) and drastically enhances 21st-century communication competencies, fulfilling the objective of preserving the intellect (*hifz al-'aql*) through rigorous intellectual exercise. (M. Sayyidul Abrori, 2026)

The Modernization of Quizzes and Continuous Evaluation The Quiz feature within Moodle presents an evolutionary leap from standard paper-based examinations. Inside the LMS, quizzes are injected with highly interactive multimedia elements. A teacher can insert an audio fragment of a Qur'anic recitation to evaluate pronunciation articulation points, or a video clip of a Hajj simulation requiring the student to sequence the steps correctly. This directly forces the learner's brain to operate at the level of Higher-Order Thinking Skills (HOTS). More essentially, Moodle is equipped with the intelligence to respond via automated feedback. When a student answers incorrectly regarding fundamental

religious pillars, the system instantly displays an explanation of the jurisprudence or provides a hyperlink to remedial reading. Research from multiple institutions documents that this mechanism is a tangible implementation of the Mastery Learning philosophy, where the system's algorithm guarantees the thorough comprehension of religious fundamentals before allowing the learner to ascend to the next topic. (Saehu Abas & Ari Susetiyo, 2022)

The Implementation of Project-Based Assignments The assignment module serves as the primary apparatus for verifying the achievement of the psychomotor domain and affective creativity. Through the pedagogy of Project-Based Learning, PAI ceases to stop at mere textual discourse. Learners are tasked with producing digital religious artifacts—such as recording a demonstration of correct prayer procedures, curating a podcast containing positive *da'wah*, or designing an infographic promoting religious moderation. Moodle's assignment feature enables the uploading of various large-volume document formats in a highly organized manner. Conversely, the electronic rubric instrument embedded within Moodle facilitates transparent and highly measurable formative assessments by both the teacher and peers. This approach not only tests the validity of worship movements but also cultivates social responsibility and applied technological skills, perfectly mirroring the Emancipated Curriculum's emphasis on project-based competency building.

The Exploration of the Collaborative Glossary The glossary and wiki features represent the ultimate manifestation of the SCL epistemology: the communal co-creation of knowledge. The discipline of PAI is incredibly dense with Arabic lexicon, jurisprudential nomenclature, and theological terminology that are frequently entirely alien to the younger generation. Utilizing this feature, the teacher assigns students to collaboratively construct a digital encyclopedia or a decentralized mini-encyclopedic dictionary. Through this rigorous activity, learners metamorphose from passive consumers of information into sovereign producers of literacy, effectively instilling a profound sense of intellectual ownership over the learning process and strengthening Arabic text literacy competencies. Table 2 demonstrates a highly specific roadmap detailing the correlation between PAI competency dimensions, the SCL model, and the technical calibration of Moodle features.

PAI Competency Domain	Applied SCL Strategy	Execution of LMS Moodle Features	Indicated Learning Outputs
Cognitive (Textual Analysis & Contextual Comprehension)	Flipped Classroom, Discovery Learning.	Lesson, Book, Interactive Quizzes augmented with automated feedback.	Demonstrates the proficiency to critically analyze history, extract religious evidence, and proportionally position Islamic jurisprudence.
Psychomotor	Project-Based Learning, Online Practicum, Portfolio.	Assignments (uploading video/document evidence), Workshop	Accurately demonstrates <i>tajwid</i> precision and the correct procedures for

(Replication of Worship & Social Action)		(peer/cross-evaluation).	obligatory worship in accordance with Sharia.
Affective (Internalization of Morals & Moderation)	Problem-Based Learning, Thematic Discussions, Moral Reflection.	Forums (case study dialogues), Survey, Activity log tracking (discipline testing).	Implements the values of tolerance (<i>tasamuh</i>), academic honesty, and the ethics of polite communication (<i>adab</i>).

5. Internalization of Religious Moderation and Islamic Character in the Digital Space

The greatest phobia surrounding the implementation of online-based PAI is the severe risk of degrading spiritual education into a mere transfer of dry facts, entirely uprooted from its foundational mission of shaping human beings with noble character. However, the academic deconstruction of current literature proves that religious character can indeed be transmitted through the pixels of a screen. Character formation in the cyber era rests upon the trinity of the cognitive (comprehensive religious insight), the affective (conscious internalization of values), and the psychomotor (actualization of actions), all of which can be elegantly orchestrated through Moodle.

This internalization is engineered through the utilization of learning analytics wrapped in ethical values. The punctuality of login attendance and assignment submissions represents the cultivation of discipline; the prevention of plagiarism via similarity-checking plugins explicitly instills intellectual honesty; meanwhile, the grammar and ethics of interaction permanently recorded within the forum space train learners to actively practice empathy, active listening, and mutual respect in the virtual realm. Furthermore, organizing students into digitally based group projects sociologically weaves the threads of *ukhuwah Islamiyah* (communal brotherhood) and the culture of mutual assistance (*ta'awun*), contributing directly to the societal harmony dimensions of *Maqasid al-Shariah*. (Suryaningrum et al., 2026)

Regarding content, the discourse assembled within Moodle serves as the vanguard to repel the intrusion of extremism and digital radicalism. PAI e-learning teaching materials are structurally engineered by injecting the DNA of religious moderation (*wasathiyah Islam*), which acts to prevent *takfirism*—an extremist ideology that hastily labels others as infidels. Moderation articulates the values of *tawasuth* (the balanced middle path), *tawazun* (balance), *i'tidal* (fairness and firmness), *tasamuh* (multicultural tolerance), *musawah* (equality), and *islah* (constructive reform) as an ideological shield. Through dynamic case studies in the Moodle forum, learners are rigorously trained to dissect religiously clad hoaxes, investigate the validity of digital transmission chains, and critically evaluate the credibility of online sources.

This aligns perfectly with the Roadmap for Religious Moderation initiated by the Ministry of Religious Affairs (Kemenag), which emphasizes mainstreaming moderation through digital literacy modules encompassing online ethics,

responsible media usage, and respect for digital privacy. By arming students with critical information literacy, Moodle provides them with robust theological resistance. This enables them to magnanimously accept the reality of diverse viewpoints (*khilafiyah*) and maintain an inclusive sensibility within the highly pluralistic ecology of Indonesian society. Therefore, the existential function of Moodle is radically transformed; it shifts from a mere administrative visual aid into a moral immunity ecosystem that vigorously protects Generation Z from the destructive exposure of algorithmic echo chambers.

6. Challenges in TPACK, Infrastructure, and Policy Governance

While the narrative surrounding Moodle's superiority in revolutionizing PAI appears exceptionally promising, the process of transplanting it into the conventional educational system violently collides with structural realities, cultural deficits, and complex bureaucratic dualism. From an infrastructural spectrum, the severe inequality of broadband internet access and the ownership of multifunctional gadgets act as a phantom haunting schools in remote rural areas and traditional Islamic boarding schools. Research indicates that implementing the Emancipated Curriculum's digital mandates in rural regions is immensely challenging due to these systemic barriers, leading to a critique that such policies appear designed exclusively for urban centers. The Moodle application, when heavily loaded with high-resolution interactive multimedia modules, demands massive bandwidth capacity. Responding to this crisis, the foundational architecture of Moodle presents a brilliantly tactical solution; it is designed with the extreme flexibility to be configured entirely through a local server (Local Area Network / Intranet) without requiring external internet connections, ensuring that institutions with lagging infrastructure remain capable of deploying SCL. (Ardillah Abu et al., 2025)

However, a far more lethal constraint is rooted in the extreme deficit of Technological Pedagogical Content Knowledge (TPACK) within the body of PAI teachers themselves. It is frequently discovered that educators possess an extraordinary depth of religious knowledge, yet are completely illiterate regarding the operational instruments of digital platforms and paralyzed when attempting to formulate interactive pedagogical strategies. The implications are deeply tragic; an LMS of Moodle's caliber is degradingly reduced to a mere storage drawer for PDF assignments, effectively killing the potential for critical inquiry. This highlights a critical need to enhance teacher agency, as educators must reconcile emerging curriculum demands with their actual contextual constraints. Complicating the TPACK deficit is the profound structural challenge stemming from the dualism in policy governance between the Ministry of Religious Affairs (Kemenag) and the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek). While Kemendikbudristek manages the administrative status, salaries, and general school supervision of PAI teachers, Kemenag retains absolute authority over the substantive PAI curriculum, moral development, and the Teacher Professional Education (PPG) certification for religious educators. This fragmentation results in uncoordinated policies; for instance, the rapid digital

mandates of the Emancipated Curriculum driven by Kemendikbudristek are often not synchronized with the pedagogical training provided by Kemenag. Furthermore, dual supervision by general school inspectors and religious school inspectors forces PAI teachers to meet conflicting expectations, stifling their professional development and limiting their ability to innovate with platforms like Moodle. (Jasmansyah & Mustiali, 2026)

Consequently, the resolution to this total impasse absolutely requires holistic managerial and structural policy interventions. The formation of joint regulations (*joint regulation*) between Kemendikbudristek and Kemenag is an urgent necessity to eliminate the fragmentation of authority regarding teacher recruitment, training, and supervision, moving toward an integrated governance model. Concurrently, school principals and institutional leaders must reallocate budgets—not solely obsessing over assembling hardware infrastructure, but investing massively in continuous capacity building programs for the development of educators' digital literacy. This training agenda must dive sharply into the proficiencies of producing digital *da'wah* media, the tactical moderation of asynchronous classes, and the mastery of reading machine-processed learning analytics. Furthermore, the total overhaul of the curriculum in the Teacher Professional Education (PPG) program for PAI must strictly patent digital pedagogy materials as an absolute graduation requirement, ensuring a regenerated workforce of agile teachers capable of seamlessly surfing the digital ocean. (Meli Fiandini & Risti Ragadhita, 2023)

Previous studies have extensively documented the efficacy of Moodle in enhancing student engagement and academic performance in general science and humanities subjects. Furthermore, several researchers have begun exploring digital integration within Islamic Religious Education, although these studies primarily focus on students' general perceptions of e-learning or the use of basic multimedia tools. Despite these advancements, a significant research gap remains: there is a scarcity of literature that specifically addresses how Moodle's advanced architectural features can be systematically optimized to facilitate a true Student-Centered Learning (SCL) ecosystem in PAI. Most existing studies overlook the complex necessity of balancing cognitive achievement with the internalization of moral values and religious moderation in a digital environment.

To address this specific research problem, this study aims to comprehensively analyze the implementation of Moodle as an LMS to facilitate SCL in Islamic Religious Education. By mapping its technical affordances against the pedagogical needs of PAI, this research seeks to provide a strategic blueprint for educators to harmonize digital innovation with moral instruction in the contemporary era.

Conclusion

The utilization of the Moodle Learning Management System (LMS) has proven to be a strategic instrument for facilitating a paradigm shift in Islamic Religious

Education (PAI), transitioning from traditional teacher-centered approaches to an interactive Student-Centered Learning (SCL) ecosystem aligned with the Emancipated Curriculum (*Kurikulum Merdeka*). The main contribution of this study lies in formulating a comprehensive pedagogical framework that synergizes digital learning with character education. Specifically, it demonstrates how an LMS can be strategically optimized beyond basic administrative digitization to serve as a robust mechanism for internalizing Islamic values, *Maqasid al-Shariah*, and religious moderation (*wasathiyah*) to counter digital radicalism among Generation Z.

Through the integration of adaptive features—such as asynchronous forums, immediate feedback quizzes, collaborative glossaries, and project-based rubrics—Moodle successfully bridges the achievement of Higher-Order Thinking Skills (HOTS) with the evaluation of psychomotor practices and affective attitudes. Consequently, PAI instruction transcends physical classroom limitations, fostering students' self-regulated learning independence, digital literacy, and contextual understanding.

Despite these affordances, practical implementation faces challenges, including infrastructure disparities in rural areas, deficits in educators' Technological Pedagogical Content Knowledge (TPACK), and policy dualism between the Ministry of Religious Affairs and the Ministry of Education. Overcoming these barriers requires strategic interventions, such as the development of localized offline networks, the reorientation of teacher certification curricula, and the harmonization of national educational governance. Ultimately, this study concludes that with adequate institutional support, Moodle-based SCL revitalizes the philosophical substance of PAI, ensuring it remains resiliently adaptive in shaping the moral and intellectual landscape of the 21st century.

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