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Reimagining Curriculum Leadership In The Era Of Artificial Intelligence: Evidence From Islamic Higher Education

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Abstract

Purpose of the study: This study aims to map the forms, challenges, and strategies of curriculum leadership in responding to AI integration within Islamic higher education, prompted by the transformation of artificial intelligence that has reshaped curriculum management and urged a reconceptualisation of leadership practices rooted in distinctive Islamic epistemological characteristics. **Methodology**: The study uses a systematic literature review following the PRISMA protocol, searching Scopus, Google Scholar, and Sinta-indexed journals for scientific literature published between 2015 and 2026 on curriculum leadership, artificial intelligence, and Islamic higher education, yielding 25 articles that met the inclusion criteria for thematic analysis. **Main Findings**: Curriculum leadership in the AI era is shifting from an administrative role to a curative-ethical role that combines data literacy, algorithm-informed decision-making, and safeguarding maqasid al-shariah values. Key challenges include the digital divide, limited leader competence, and the risk of algorithmic bias toward Islamic epistemology. **Novelty/Originality of this study**: This study situates curriculum leadership at the intersection of artificial intelligence integration, Islamic higher education epistemology, and maqasid al-shariah principles. It advances existing knowledge by moving beyond conventional instructional and distributed leadership models, offering a hybrid curriculum leadership model that integrates AI governance with Islamic educational principles, and addressing the underexplored tension between algorithmic rationality and Islamic values in Indonesian Islamic higher education leadership practice.

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A. Introduction

Artificial intelligence has moved from a futuristic discourse into a structural force that is tangibly reshaping how universities design, deliver, and evaluate curricula. Adaptive learning systems, predictive analytics, and generative language models are now used to map learning outcomes, construct competency maps, and assist lecturers in designing instructional materials (Sposato, 2025; Tang et al., 2020). The urgency of this study lies in the fact that this change is no longer marginal; it has penetrated

the core of academic processes and the curriculum itself, thereby demanding a leadership response that can no longer rely solely on conventional administrative approaches.

This phenomenon becomes more complex in Islamic higher education institutions. As institutions carrying a dual mission transmitting general knowledge while instilling the values of tawhid, akhlaq, and adab Islamic higher education institutions face a fundamental question of how artificial intelligence can be integrated into the curriculum without reducing the spiritual and ethical dimensions of Islamic education (Achruh et al., 2024). This tension between technological efficiency and the authenticity of Islamic values is precisely what makes curriculum leadership in Islamic higher education a topic worth raising seriously in academic discourse, whether from a quantitative or qualitative standpoint.

Research on educational leadership in the AI era has in fact developed rapidly over the past decade. Sposato (2025) developed a comprehensive taxonomy of AI applications in higher education leadership encompassing ten domains, ranging from administrative efficiency to ethical AI leadership. Bond et al. (2024) conducted a meta-systematic review that affirmed the need for greater ethics, collaboration, and methodological rigor in AI research within higher education. Meanwhile, Fullan et al. (2024) highlighted the challenges and implications of artificial intelligence for school leadership, and Zawacki-Richter et al. (2019, 2024) have consistently mapped the evolving landscape of AI applications in higher education.

Meanwhile, literature on artificial intelligence and Islamic education has also begun to emerge, albeit with a different character. Achruh et al. (2024) revealed the challenges and opportunities of AI adoption in Islamic education at Indonesian Islamic higher education institutions through qualitative interviews with scholars and academics. Karim (2025) proposed a management model for AI-based Islamic curriculum development through a literature review, while Purnomo et al. (2024) explored strategic management grounded in Islamic values at pesantren-based higher education institutions. Nevertheless, nearly all of these studies are single-site case studies, descriptive-qualitative in nature, and have not yet systematically synthesised how the construct of curriculum leadership as a distinct field within educational management is transformed when confronted with artificial intelligence.

This gap constitutes the starting point of the present study. First, the literature on AI-based educational leadership is predominantly produced within secular higher education contexts in developed countries, and therefore inadequately accommodates the dimension of Islamic epistemology. Second, the literature on Islamic education and artificial intelligence generally focuses on the madrasah or Islamic primary school level rather than treating Islamic higher education as the unit of analysis. Third, no conceptual synthesis has yet explicitly linked instructional-distributed leadership theory with AI governance and the principles of maqasid al-shariah within a single, coherent curriculum leadership framework. This inconsistency and gap constitute the novelty this article addresses.

Based on this gap, the present study specifically aims to: (1) map the themes and patterns of curriculum leadership emerging in the literature on AI integration in higher education, both general and Islamic; (2) identify the specific challenges faced by curriculum leaders in Islamic higher education institutions in adopting artificial intelligence; and (3) formulate a theoretical framework for hybrid curriculum leadership that integrates AI governance with Islamic educational values. This objective differs from prior studies by addressing the cross-domain synthesis gap, rather than merely describing AI implementation at a single institution.

The central argument tested in this article is that curriculum leadership in Islamic higher education institutions in the AI era cannot fully adopt the technocratic-secular leadership model developed in the West, nor can it survive by clinging to a traditional leadership model that disregards artificial intelligence altogether. Instead, a hybrid model is required one that combines data literacy and ethical AI governance with the safeguarding of maqasid al-shariah values and collegial empowerment

among faculty and curriculum units. This study tests this proposition thematically through a synthesis of available literature.

METHOD

This study employs a Systematic Literature Review (SLR) approach following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol as developed by Page et al. (2021). This approach was chosen because it allows the researcher to identify, select, appraise, and synthesize findings from a substantial body of prior studies in a manner that is transparent, replicable, and auditable, thereby aligning with the study's aim of mapping and synthesizing patterns of curriculum leadership in the AI era within Islamic higher education.

The research procedure was carried out through five main stages. The first stage was the formulation of the research protocol based on the PICOS framework (Population, Intervention, Comparison, Outcome, Study design), adapted for a non-intervention review: Population comprising higher education institutions (both general and Islamic), the Phenomenon examined being the integration of artificial intelligence in curriculum and educational leadership, Context being higher education institutions, Outcomes being the patterns, challenges, and strategies of curriculum leadership, and Study design comprising peer-reviewed journal articles, conference proceedings, and working papers that had undergone academic review.

The second stage was the development of a search strategy using a combination of keywords and Boolean operators: ("curriculum leadership" OR "kepemimpinan kurikulum") AND ("artificial intelligence" OR "kecerdasan buatan" OR "AI") AND ("higher education" OR "perguruan tinggi" OR "Islamic higher education" OR "pendidikan tinggi Islam"). Searches were conducted across three primary sources: the Scopus database to capture reputable international literature, the Google Scholar search engine to broaden coverage, and the Sinta and Garuda accredited national journal directories to capture literature from the Indonesian and Islamic education context.

The third stage applied inclusion and exclusion criteria. Inclusion criteria comprised: (a) articles published between 2015 and 2026; (b) explicit discussion of educational leadership, curriculum management, or institutional governance intersecting with artificial intelligence; (c) journal articles indexed in Scopus or Sinta, reputable conference proceedings, or academic working papers accessible in full text (open access or through institutional subscription); and (d) written in Indonesian or English. Exclusion criteria included opinion pieces without a clear methodology, newspaper editorials, and articles that mentioned artificial intelligence only in passing without any connection to leadership or curriculum.

The fourth stage was a tiered screening and selection process following the PRISMA flow diagram, encompassing identification, title and abstract screening, full-text eligibility assessment, and the final determination of studies included in the synthesis. Two reviewers conducted this process independently to enhance selection reliability; they resolved disagreements through discussion until consensus was reached. The fifth stage was data extraction using a structured worksheet recording author names, year, institution type, original research method, and key findings related to curriculum leadership and artificial intelligence, which were then analyzed thematically following Braun and Clarke's (2006) six-step procedure: familiarization with the data, initial code generation, theme searching, theme review, theme naming, and synthesis report writing.

The entire process was carried out over eight months, as illustrated in the Gantt chart in Figure 1, to maintain the orderliness of the research stages from protocol formulation through to writing the final report.

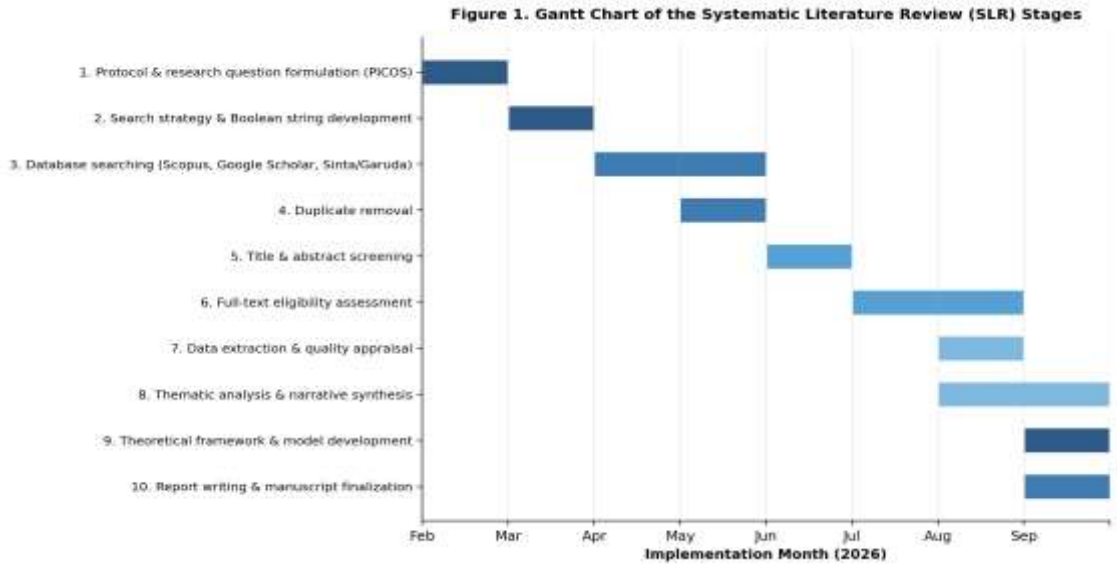


Figure 1. Gantt chart of the systematic literature review (SLR) stages in this study, structured according to an eight-month schedule from protocol formulation through to manuscript finalization.

The validity and reliability of the review findings were safeguarded through several strategies. First, the search and selection process was made transparent by documenting the PRISMA flow diagram (Figure 3), allowing other researchers to replicate the process. Second, we triangulated data sources by combining an international database (Scopus) with national databases (Sinta/Garuda) to provide both a global and an Indonesian contextual perspective. Third, dual-reviewer appraisal at the screening and data extraction stages to minimize single-researcher subjective bias. Fourth, an audit trail in the form of documented reasons for exclusion at the full-text eligibility stage, so that selection decisions can be academically accounted for.

RESULTS AND DISCUSSION

The search process, carried out in accordance with the PRISMA protocol, identified 422 records from three databases (Scopus n=186, Google Scholar n=142, Sinta/Garuda n=94), plus 15 additional records identified through citation tracking, yielding a total of 437 identified records. After duplicate removal, 358 records remained and were screened by title and abstract, resulting in 78 articles assessed for full-text eligibility. At this stage, 53 articles were excluded for the following reasons: not focused on curriculum leadership (n=20), not substantively addressing artificial intelligence (n=15), not empirical or full text unavailable (n=10), and not written in Indonesian or English (n=8). This selection process yielded 25 studies that met the inclusion criteria for thematic synthesis, comprising 17 Scopus-indexed articles and 8 articles from Sinta-accredited journals. The complete flow diagram is presented in Figure 3.

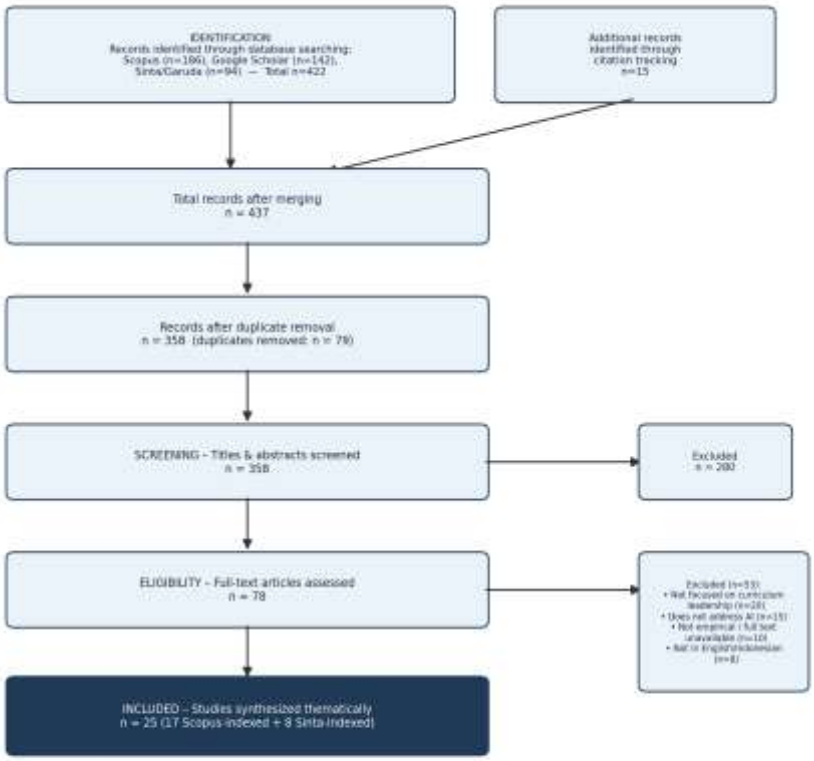


Figure 3. PRISMA Flow Diagram of Study Selection

Figure 3. PRISMA flow diagram of the identification, screening, eligibility assessment, and inclusion of studies in this study's thematic synthesis.

Thematic analysis of the 25 included studies produced five interrelated main themes, as summarized in Table 1. These five themes reflect a conceptual shift in curriculum leadership, ranging from the technical-operational aspect of data-driven planning, the ethical aspect of algorithmic governance, the shifting role and competencies of leaders, the safeguarding of Islamic epistemology, through to the structural barriers of the digital divide and institutional readiness.

THEME	THEME DESCRIPTION	F (STUDIES)	REPRESENTATIVE STUDIES
DATA-DRIVEN CURRICULUM PLANNING & PERSONALIZATION	The use of analytics and adaptive systems to design competency maps and learning materials responsive to student needs.	9	Sposato (2025); Tang et al. (2020); Essel et al. (2022); Karim (2025)
AI GOVERNANCE & ETHICS IN CURRICULUM DECISION-MAKING	The need for ethical frameworks, algorithmic transparency, and leader accountability in AI-based decisions.	7	Nguyen et al. (2022); Bond et al. (2024); Xia et al. (2022)
SHIFTING COMPETENCIES & ROLE OF	The leader's role evolves from administrator to ethical-strategic curator	6	Sposato (2025); Fullan et al. (2024); Ismaya et al. (2023)

CURRICULUM LEADERS	navigating technology and pedagogy.		
ISLAMIC EPISTEMOLOGY & VALUE SAFEGUARDING (MAQASID AL-SHARIAH)	Efforts to align AI adoption with tawhid, adab, and shariah objectives within the Islamic curriculum.	8	Achruh et al. (2024). Purnomo et al. (2024); Andriani & Sudirman (2023); Mustoip et al. (2023)
DIGITAL DIVIDE & INSTITUTIONAL READINESS	Infrastructure limitations, faculty digital literacy, and regional access gaps as structural barriers.	7	Achruh et al. (2024); Kuleto et al. (2021); Slimi (2023)

Table 1. Summary of themes derived from the thematic analysis of 25 studies included in the systematic literature review.

The first finding shows that 9 of the 25 studies highlight the use of artificial intelligence for data-driven curriculum planning and learning personalization, in which analytics systems are used to map individual learning outcomes (Tang et al., 2020; Essel et al., 2022). The second finding shows that 7 studies emphasize the importance of ethical governance, including algorithmic transparency and accountability in curricular decisions, as affirmed by Nguyen et al. (2022) and Bond et al. (2024), who called for greater ethical rigor in AI research and practice in higher education.

The third finding shows a shift in curriculum leader competencies across 6 studies, from a conventional administrative role to a curative-strategic role that demands both data literacy and pedagogical sensitivity (Sposato, 2025; Fullan et al., 2024). The fourth finding, most relevant to this study's context, shows that 8 studies, mostly drawn from Sinta-accredited journals, explicitly discuss safeguarding Islamic values in AI adoption, including concerns about potential algorithmic bias misaligned with Islamic epistemology (Achruh et al., 2024; Purnomo et al., 2024). The fifth finding identifies the digital divide and limited institutional readiness as barriers in 7 studies, particularly regarding technological infrastructure and educators' digital literacy in Islamic higher education institutions (Achruh et al., 2024; Kuleto et al., 2021).

DISCUSSION

How Is Curriculum Leadership Shifting

The findings in the results section address the study's research problem: curriculum leadership in higher education, including Islamic higher education, is shifting from an administrative-bureaucratic model toward one that is more adaptive, data-driven, and still value-grounded. This shift is consistent with the classic instructional leadership theory put forward by Hallinger and Murphy (1985), which emphasizes three main dimensions: defining the institution's mission, managing the instructional program, and creating a positive learning climate. Artificial intelligence does not replace these three dimensions; it expands their scope and complexity, as reflected in the first and third themes concerning data-driven planning and shifting leader competencies.

Spillane's (2006) distributed leadership theory reinforces this interpretation, viewing leadership not as an individual attribute but as a practice distributed among formal leaders, faculty, and curriculum units. Within the context of AI integration, this distributed practice becomes increasingly relevant because algorithm-based curricular decisions demand cross-expertise collaboration—among academic leaders who understand institutional vision, IT staff who understand AI systems, and faculty who

understand disciplinary substance as well as Islamic values. The second theme, concerning ethical governance, further affirms that curriculum leadership in the AI era can no longer be top-down but must instead be collegial and distributed, in line with the AI leadership taxonomy developed by Sposato (2025) within the "Ethical AI Leadership and Governance" domain.

Interpreting the Findings within an Islamic Epistemological Framework

The fourth theme, concerning the safeguarding of Islamic values, constitutes the most substantive contribution of this study to the existing literature. Unlike AI leadership frameworks in secular higher education, which tend to emphasize efficiency and personalization alone (Kuleto et al., 2021; Xia et al., 2022), the literature on Islamic higher education demands an additional layer in the form of safeguarding maqasid al-shariah, that is, the protection of religion, life, intellect, lineage, and property, as an ethical framework that extends beyond universal AI ethics principles such as fairness, transparency, and data privacy (Nguyen et al., 2022). This aligns with Achruh et al.'s (2024) finding that scholars and academics at Indonesian Islamic higher education institutions view AI-based learning personalization as an opportunity, while still requiring the educator to play a central role in shaping students' spiritual character. This role cannot be fully delegated to machines.

This study thereby both confirms and modifies conventional instructional-distributed leadership theory. The theory is confirmed in its emphasis on shared vision and collegial empowerment. However, it is modified by adding an ethical-theological dimension not yet explicitly addressed in mainstream educational leadership literature. This modification is what the authors formulate into the hybrid curriculum leadership theoretical framework presented in Figure 2, which integrates three pillars: instructional-distributed leadership theory, AI taxonomy and governance, and Islamic educational epistemology and values into a single hybrid curriculum leadership model.

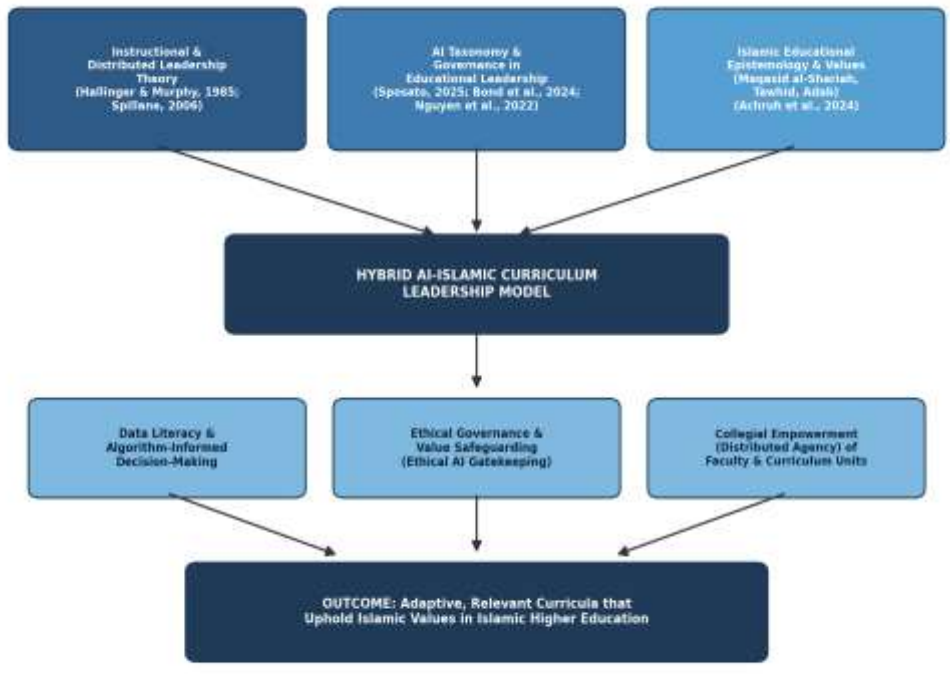


Figure 2. Theoretical Framework of Curriculum Leadership in the AI Era in Islamic Higher Education

Figure 2. Theoretical framework of curriculum leadership in the AI era within Islamic higher education, synthesized from instructional-distributed leadership theory, AI governance, and Islamic educational epistemology.

As shown in Figure 2, the hybrid AI-Islamic curriculum leadership model has three operational dimensions. First, data literacy and algorithm-informed decision-making, which requires curriculum leaders to critically read and evaluate AI system outputs rather than passively accepting them. Second, ethical governance or ethical AI gatekeeping, a safeguarding function that ensures every algorithm-based recommendation is aligned with Islamic values before being adopted into curriculum policy. Third, collegial empowerment or distributed agency, which positions faculty and curriculum units as active partners rather than mere implementers of leadership policy. Together, these three dimensions are projected to produce curricula that are adaptive to contemporary developments, relevant to labor market needs, and grounded in Islamic value integrity.

Implementation Challenges and Comparison with Prior Studies

The challenges of the digital divide and institutional readiness identified in the fifth theme align with Kuleto et al.'s (2021) finding that the success of AI adoption in higher education depends heavily on infrastructure and human resource readiness, not merely on technology availability. Within the context of Islamic higher education institutions in Indonesia, this challenge is compounded by the geographic disparity between state Islamic higher education institutions in major cities and private Islamic higher education institutions in more remote regions, as noted in Achruh et al.'s (2024) study. This comparison shows that technical challenges are universal. However, their intensity and context differ between secular and Islamic higher education, particularly because most private Islamic higher education institutions have limited research and technology development budgets.

When compared with Sposato's (2025) taxonomy identifying ten domains of AI application in higher education leadership, this study finds that the "Ethical AI Leadership and Governance" and "Diversity, Equity, and Inclusion" domains carry a qualitatively different emphasis within the Islamic context, not merely understood as procedural fairness, but also as equitable access to educational technology across regions of Islamic outreach and education. This finding enriches the otherwise generic taxonomy with a contextual Islamic layer that has not been widely addressed by mainstream AI-based educational leadership literature.

The theoretical implication is the need to extend instructional-distributed leadership theory with a religious-ethical dimension when applied to value-based education contexts such as Islamic higher education. The practical implication is that leaders of Islamic higher education institutions need to design AI governance policies that explicitly incorporate maqasid al-shariah principles as evaluation criteria, establish cross-disciplinary collegial teams for algorithm-based curricular decision-making, and invest in the ongoing development of faculty digital capacity so that infrastructure gaps do not hinder the equitable distribution of Islamic higher education quality across regions.

CONCLUSION

This study concludes that curriculum leadership in Islamic higher education institutions is undergoing a fundamental transformation as a result of AI integration, shifting from a conventional administrative role toward a curative-ethical role that combines data literacy, responsible algorithmic governance, and the safeguarding of maqasid al-shariah values. The synthesis of 25 selected studies confirms the relevance of instructional-distributed leadership theory while also showing the need to modify the theory by adding an Islamic epistemological dimension not widely addressed in mainstream educational leadership literature. The proposed hybrid curriculum leadership framework, integrating data literacy, ethical governance, and collegial empowerment, offers a conceptual roadmap for Islamic higher education institutions to respond to the AI era without compromising the authenticity of Islamic values.

This study has several limitations, including its scope being limited to fully accessible Indonesian- and English-language literature, which may overlook relevant studies in Arabic or other local languages. Furthermore, as a literature review, this study did not empirically test the proposed model. Future research is therefore recommended to empirically test this hybrid curriculum leadership framework through nationwide quantitative studies across state and private Islamic higher education institutions, as well as through in-depth multi-site qualitative case studies, in order to strengthen the external validity and practical applicability of the resulting model.

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