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ORIGINAL RESEARCH ARTICLE

Transforming Islamic Education Curriculum: Integrating Kiai Authority and Educational Technology through an Integrative Literature Review

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ABSTRACT

Islamic education faces increasing pressure to respond to technological change while preserving the religious values, pedagogical traditions, and cultural authority that characterize its curriculum. This study examines how kiai authority and educational technology can be conceptually integrated within the transformation of Islamic education curriculum. An integrative literature review was employed to synthesize scholarly publications addressing Islamic education curriculum, kiai authority, pesantren educational practices, and technology-supported learning. Relevant studies were systematically identified, screened, categorized, and interpreted through thematic synthesis to reveal relationships among curriculum orientation, religious authority, pedagogical adaptation, and technological integration. The review identifies three interconnected patterns. First, kiai authority functions as a value-oriented foundation that influences curriculum direction, legitimacy, and pedagogical adaptation in Islamic educational institutions. Second, educational technology provides opportunities for expanding learning access, instructional flexibility, and curriculum delivery, but its adoption requires contextual alignment with institutional values and pedagogical traditions. Third, sustainable curriculum transformation emerges not from replacing traditional structures with technology, but from integrating technological innovation within culturally and religiously grounded educational practices. The study proposes an integrative framework positioning kiai authority as a normative-pedagogical anchor and educational technology as an adaptive instrument for Islamic education curriculum transformation.



ABSTRAK

Pendidikan Islam menghadapi tekanan yang semakin besar untuk merespons perubahan teknologi sembari tetap mempertahankan nilai-nilai keagamaan, tradisi pedagogis, dan otoritas budaya yang menjadi ciri khas kurikulumnya. Studi ini mengkaji bagaimana otoritas kiai dan teknologi pendidikan dapat diintegrasikan secara konseptual dalam transformasi kurikulum pendidikan Islam. Tinjauan pustaka integratif digunakan untuk menyintesis berbagai publikasi ilmiah yang membahas kurikulum pendidikan Islam, otoritas kiai, praktik pendidikan pesantren, dan pembelajaran berbasis teknologi. Studi-studi yang relevan diidentifikasi, disaring, dikategorikan, dan diinterpretasikan secara sistematis melalui sintesis tematis guna mengungkap hubungan antara orientasi kurikulum, otoritas keagamaan, adaptasi pedagogis, dan integrasi teknologi. Tinjauan ini mengidentifikasi tiga pola yang saling berkaitan. Pertama, otoritas kiai berfungsi sebagai landasan yang berorientasi pada nilai, yang memengaruhi arah kurikulum, legitimasi, dan adaptasi pedagogis di lembaga pendidikan Islam. Kedua, teknologi pendidikan memberikan peluang untuk memperluas akses pembelajaran, fleksibilitas instruksional, dan penyampaian kurikulum, namun penerapannya memerlukan penyesuaian kontekstual dengan nilai-nilai lembaga dan tradisi pedagogis. Ketiga, transformasi kurikulum yang berkelanjutan tidak muncul dari penggantian struktur tradisional dengan teknologi, melainkan dari integrasi inovasi teknologi ke dalam praktik pendidikan yang berlandaskan nilai budaya dan agama. Studi ini mengusulkan kerangka kerja integratif yang menempatkan otoritas kiai sebagai jangkar normatif-pedagogis dan teknologi pendidikan sebagai instrumen adaptif bagi transformasi kurikulum pendidikan Islam.

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Kata kunci: Islamic Education Curriculum; Curriculum Transformation; Kiai Authority; Educational Technology; Integrative Literature Review.

1. INTRODUCTION

The contemporary transformation of education demands an increasingly adaptive curriculum capable of responding to technological development while maintaining the philosophical, cultural, and ethical foundations of educational institutions. Within Islamic education, this challenge is particularly complex because curriculum development does not merely concern the organization of subjects and learning activities but also involves the transmission of religious knowledge, moral formation, spiritual values, and the preservation of Islamic educational traditions. The Islamic education curriculum therefore functions as an important bridge between inherited religious values and the changing educational needs of Muslim learners. Recent scholarship has consequently emphasized the importance of developing Islamic education curricula that remain responsive to contemporary social and technological developments without losing their distinctive value orientation (Akrim, 2022; Nurdin et al., 2024). Curriculum transformation should thus be understood not as the replacement of Islamic educational traditions, but as a process of contextual adaptation through which established educational values interact with emerging pedagogical possibilities.

The rapid development of educational technology has intensified this curriculum challenge. Technology increasingly influences how educational content is organized, accessed, delivered, experienced, and evaluated. In Islamic education, technological integration provides opportunities to expand access to learning resources, develop more flexible instructional environments, diversify learning media, and strengthen interaction between learners and educational content. Syarifah et al. (2024), for example, emphasized that technology integration within the Islamic Religious Education curriculum has considerable potential to improve accessibility and student involvement while supporting curriculum objectives, instructional approaches, learning resources, and evaluation. Similarly, emerging discussions concerning artificial intelligence and coding within Islamic curriculum management demonstrate increasing scholarly attention to the possibility of integrating technological development with Islamic educational principles (Ghozali et al., 2024). Nevertheless, technology cannot automatically transform Islamic education simply through the introduction of digital devices or platforms. Its educational significance ultimately depends on how technology is positioned within curriculum objectives, pedagogical practices, institutional culture, and Islamic values.

This issue becomes particularly important in the context of *pesantren*, where curriculum development is inseparable from religious traditions and the authority of the *kiai*. Unlike conventional administrative leadership, *kiai* authority encompasses religious, moral, cultural, and pedagogical dimensions that influence the educational orientation of *pesantren*. The *kiai* occupies a strategic position in determining how religious knowledge is interpreted, how educational traditions are maintained, and how institutional changes are negotiated within the *pesantren* community. Consequently, curriculum transformation in this context cannot be adequately understood through technological considerations alone. The acceptance and contextualization of educational innovation are also connected to the normative structures through which new practices acquire religious, cultural, and pedagogical legitimacy. From this perspective, *kiai* authority constitutes an important component for understanding how Islamic educational institutions negotiate continuity and change.

The relationship between curriculum, religious authority, and technology therefore raises a fundamental question for contemporary Islamic education. On the one hand, educational technology encourages curriculum flexibility, expanded learning resources, pedagogical innovation, and new forms of educational interaction. On the other hand, Islamic educational institutions require mechanisms that ensure such transformation remains consistent with their religious orientation and educational identity. Studies available by 2024 had already demonstrated growing concern with this problem. Nurdin et al. (2024), through a systematic literature review of Islamic Religious Education curriculum development, showed that curriculum development requires contextual adjustment in learning materials, approaches, methods, media, and assessment. Syarifah et al. (2024), meanwhile, specifically positioned technology integration as an important opportunity for improving Islamic education curriculum and instruction in the digital era. These developments suggest that curriculum adaptation and technological integration had become interconnected concerns within Islamic education scholarship by 2024.

Prior research, however, has generally examined these dimensions through relatively separate scholarly perspectives. Research on Islamic education curriculum has primarily concentrated on

curriculum development, curriculum implementation, learning content, educational values, and adaptation to particular learner or institutional needs. For instance, Nurdin et al. (2024) synthesized studies concerning the development and implementation of Islamic Religious Education curricula in inclusive schools and madrasas, demonstrating the importance of adapting curriculum materials, instructional approaches, media, and assessment to learners' characteristics. In another stream, studies concerning educational technology have emphasized digital learning resources and technological integration as mechanisms for increasing flexibility, accessibility, and effectiveness in Islamic education (Syarifah et al., 2024). Meanwhile, scholarship concerning *pesantren* and *kiai* has generally positioned religious authority within discussions of leadership, tradition, institutional culture, and religious knowledge transmission. Although these bodies of literature provide important insights, their conceptual separation leaves insufficient explanation of how religious authority and educational technology simultaneously participate in curriculum transformation.

This fragmentation constitutes a critical research gap. Existing literature provides substantial discussion of **Islamic education curriculum**, **kiai authority**, and **educational technology**, yet comparatively limited attention has been devoted to synthesizing these three domains within a unified curriculum perspective. Technology-centered approaches risk reducing curriculum transformation to digital adoption, whereas authority-centered approaches may interpret *kiai* primarily through institutional leadership rather than curriculum development. Conversely, curriculum studies may discuss adaptation and innovation without sufficiently explaining the normative authority through which technological innovation is negotiated within *pesantren*. Therefore, the central problem is no longer simply whether Islamic education should preserve tradition or embrace technological modernization, but **how curriculum transformation can integrate technological adaptation with the religious and pedagogical authority that constitutes the identity of Islamic educational institutions**.

The novelty of this research lies in its integrative conceptualization of Islamic education curriculum transformation by bringing together *kiai* authority and educational technology within a single analytical framework. Unlike approaches that position technology merely as an instructional tool or *kiai* authority merely as a leadership phenomenon, this study proposes that both can be interpreted as interconnected dimensions of curriculum transformation. *Kiai* authority provides a normative and pedagogical foundation through which curriculum purposes, values, and educational changes acquire contextual legitimacy, whereas educational technology provides adaptive instruments through which curriculum content, learning experiences, resources, and pedagogical interactions can be expanded. The proposed integration therefore shifts the discussion from a binary opposition between tradition and technology toward a curriculum perspective in which religious authority can guide technological adaptation while technology can support the contextual development of Islamic educational practices.

Despite the growing literature in these areas, an additional methodological gap remains. Existing knowledge is dispersed across studies employing different contexts, concepts, methodologies, and educational settings. Consequently, individual empirical studies alone are insufficient for explaining the broader conceptual relationships among Islamic education curriculum, *kiai* authority, and educational technology. An **integrative literature review** is particularly appropriate for addressing this problem because it enables findings and theoretical perspectives from diverse

studies to be compared, categorized, and synthesized into a more comprehensive conceptual understanding. The use of literature review approaches was already established within Islamic curriculum research by 2024; for example, Nurdin et al. (2024) systematically reviewed literature concerning Islamic Religious Education curriculum development and implementation. The present study extends this literature-oriented approach by moving beyond one dimension of curriculum development and synthesizing the intersections of curriculum, religious authority, and educational technology.

Conceptually, this study positions **Islamic Education Curriculum** as its primary analytical domain, while *Kiai Authority* and *Educational Technology* function as two interconnected dimensions of curriculum transformation. Islamic education curriculum is understood as an educational framework through which Islamic knowledge, values, learning experiences, pedagogical practices, and educational objectives are systematically organized. *Kiai* authority refers to the religious, moral, cultural, and pedagogical influence through which educational orientation and institutional practices are legitimized within pesantren traditions. Educational technology, meanwhile, encompasses technological resources and digitally supported pedagogical mechanisms that can facilitate curriculum delivery, learning interaction, access to knowledge, and educational adaptation. Rather than treating these concepts as isolated variables, the study examines their conceptual relationships across the existing literature to understand how technological adaptation may occur within the normative structure of Islamic education.

The significance of this synthesis lies in repositioning curriculum as the meeting point between continuity and educational change. Islamic educational institutions cannot remain detached from technological development, yet technological modernization without sufficient consideration of curriculum philosophy and Islamic values may produce innovations disconnected from institutional educational purposes. Literature available in 2024 already indicated the potential contribution of technology to Islamic curriculum development while simultaneously emphasizing the importance of preserving Islamic educational orientation (Syarifah et al., 2024; Ghazali et al., 2024). Accordingly, a curriculum framework capable of connecting religious authority with technological adaptation is important not only for scholarly discussion but also for curriculum developers, pesantren leaders, educators, and Islamic educational institutions seeking to negotiate technological change without abandoning their foundational educational identity.

The primary objective of this research is therefore to **synthesize the existing literature concerning Islamic education curriculum, *kiai* authority, and educational technology in order to formulate an integrative framework for Islamic education curriculum transformation**. Specifically, this study investigates how *kiai* authority is conceptualized in relation to curriculum orientation and educational change, how educational technology is positioned within Islamic curriculum development and pedagogical adaptation, and how these two dimensions can be conceptually integrated within a curriculum transformation framework. Through an integrative literature review, the study seeks to identify convergences, tensions, and conceptual relationships across previous scholarship and ultimately proposes a literature-grounded framework in which *kiai* authority functions as a **normative-pedagogical anchor**, educational technology operates as an **adaptive pedagogical instrument**, and Islamic education curriculum becomes the central domain through which tradition and technological innovation are

meaningfully integrated.

2. RESEARCH METHODS

A rigorous literature-based methodology is essential for examining the multidimensional transformation of Islamic education curriculum, particularly when the phenomenon involves the intersection of religious authority, pedagogical traditions, and technological development. This study employed an Integrative Literature Review (ILR) to systematically identify, evaluate, compare, and synthesize scholarly literature concerning Islamic education curriculum, *kiai* authority, and educational technology. The integrative approach was selected because it enables the synthesis of studies with diverse theoretical perspectives and methodological designs while facilitating the development of new conceptual interpretations from existing knowledge. Rather than generating primary empirical data from students, teachers, or Islamic educational institutions, this study treats published scholarly works as the primary source of evidence. The methodological process was organized into interconnected stages consisting of problem identification, literature identification, eligibility screening, data extraction, thematic categorization, integrative synthesis, and conceptual framework development.

2.1 Research Design

The research design was structured as an Integrative Literature Review aimed at developing a comprehensive understanding of how *kiai* authority and educational technology can be positioned within the transformation of Islamic education curriculum. This design was considered appropriate because the three domains investigated in this study—Islamic education curriculum, *kiai* authority, and educational technology—have frequently developed within different scholarly conversations. The review therefore sought not merely to summarize previous studies but to identify conceptual relationships, recurring patterns, differences, and areas of convergence among these domains.

The review process consisted of six sequential stages: (1) problem formulation and determination of review questions; (2) identification of potentially relevant literature; (3) screening and eligibility assessment; (4) extraction and organization of relevant information; (5) thematic analysis and integrative synthesis; and (6) formulation of a conceptual framework for Islamic education curriculum transformation. Each stage was connected to the research questions established in the introduction, thereby ensuring consistency between the research problem, evidence selection, analytical procedure, and conceptual outcomes.

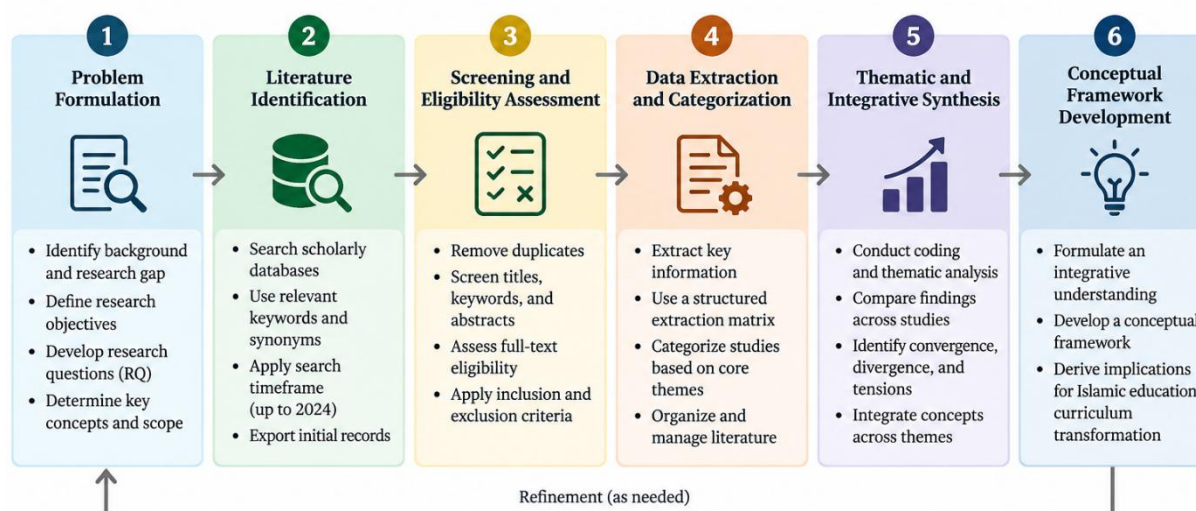


Figure 1. Visual Workflow of the Integrative Literature Review on Islamic Education Curriculum Transformation.

As illustrated in Figure 1, the review begins by defining the conceptual boundaries of Islamic education curriculum transformation and subsequently identifying literature relevant to the three principal domains. Potential publications are then evaluated according to predetermined inclusion and exclusion criteria. Eligible studies are extracted and categorized according to their substantive contribution rather than treated as quantitative observations. The resulting categories are compared through thematic synthesis to determine how religious authority and technological adaptation intersect within curriculum development. The final stage integrates these relationships into a literature-grounded conceptual framework.

2.2 Data Collection

Data collection was conducted through structured literature identification and selection rather than field-based surveys or interviews. The unit of analysis consisted of scholarly publications, particularly journal articles relevant to Islamic education curriculum, *kiai* authority and pesantren education, educational technology, digital learning, and curriculum transformation. Literature searches were organized around combinations and variations of key terms representing the central concepts of the study, including “Islamic education curriculum,” “Islamic curriculum,” “curriculum transformation,” “curriculum development,” “kiai authority,” “kiai leadership,” “pesantren curriculum,” “educational technology,” “digital learning,” “technology integration,” and related terms.

Because the study is positioned within the scholarly context available up to 2024, only literature published no later than 2024 was eligible for the final synthesis. Publications were initially identified on the basis of their titles, keywords, and abstracts. Potentially relevant studies were subsequently examined at the full-text level to determine whether their substantive findings contributed to one or more analytical domains of the review.

Table 1. Research Questions, Evidence Domains, and Analytical Focus

Research Question (RQ)	Evidence Domain	Literature Examined	Analytical Focus
RQ1: How is <i>kiai</i> authority positioned within the development and transformation of Islamic education curriculum?	<i>Kiai</i> authority and curriculum	Studies concerning <i>kiai</i> , pesantren leadership, religious authority, curriculum, and pedagogical traditions	Normative authority, pedagogical orientation, curriculum legitimacy, preservation and adaptation
RQ2: How is educational technology conceptualized and incorporated within Islamic educational practices?	Educational technology and Islamic education	Studies concerning educational technology, digital learning, technology-supported pedagogy, and Islamic education	Curriculum delivery, pedagogical adaptation, accessibility, learning resources, opportunities and challenges
RQ3: How can <i>kiai</i> authority and educational technology be integrated within a framework for Islamic education curriculum transformation?	Curriculum transformation	Literature connecting curriculum change, Islamic values, authority, pedagogy, and technological adaptation	Conceptual convergence, tensions, relationships, and framework development

As detailed in Table 1, literature collection was directly aligned with the three research questions. This strategy prevented the review from becoming a broad discussion of Islamic education or educational technology without a clear curriculum orientation. Publications that focused exclusively on technology without meaningful educational relevance, leadership without a connection to Islamic educational practices, or religious discourse without curriculum or pedagogical implications were not prioritized for synthesis.

Studies were included when they: (1) were scholarly publications available up to 2024; (2) addressed at least one of the three central domains; (3) provided conceptual, theoretical, or empirical information relevant to Islamic education curriculum transformation; and (4) contained sufficient information to permit meaningful interpretation. The final evidence base excluded duplicate records, publications outside the conceptual scope, documents without adequate scholarly information, and publications after the 2024 cut-off.

2.3 Data Analysis

Data analysis was conducted using a thematic-integrative synthesis. Unlike statistical meta-analysis, the purpose of the analysis was not to calculate pooled effect sizes or determine causal relationships among variables. Instead, the analysis sought to identify and interpret conceptual patterns across heterogeneous literature and subsequently integrate those patterns into a coherent explanation of Islamic education curriculum transformation.

The analytical process began with close examination of the selected publications to identify information related to curriculum orientation, Islamic educational values, *kiai* authority, pedagogical practices, technology integration, institutional adaptation, and curriculum transformation. Relevant information was then coded and grouped into preliminary categories. Similar categories were compared across studies and consolidated into broader themes. Particular attention was given to areas in which the literature demonstrated convergence, divergence, complementary explanations, or conceptual tensions.

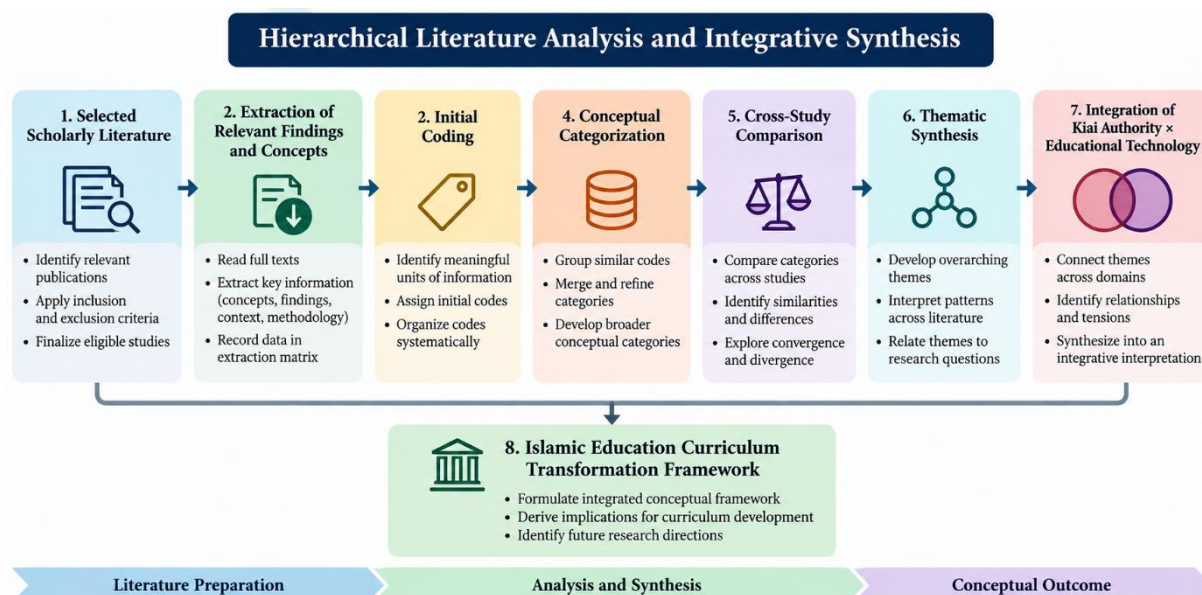


Figure 2. Analytical Pipeline for Thematic and Integrative Synthesis.

Referring to Figure 2, the analysis progressed from individual publications toward increasingly abstract conceptual categories. The first analytical dimension examined the position of *kiai* authority in shaping educational values, curriculum orientation, pedagogical legitimacy, and responses to educational change. The second examined educational technology in relation to curriculum delivery, learning resources, pedagogical flexibility, accessibility, and adaptation. The third analytical dimension brought these two strands together to determine how normative-pedagogical authority and technological adaptation could be conceptually reconciled within Islamic education curriculum transformation. Rather than interpreting the frequency of a theme as evidence of causal importance, the synthesis considered the conceptual relevance, consistency, explanatory contribution, and contextual meaning of findings across the literature. This procedure enabled the review to move beyond descriptive summarization toward the construction of an integrative interpretation.

2.4 Research Instrument

The principal research instrument was a structured literature extraction and synthesis matrix developed specifically for this review. The matrix was designed to ensure that information from each eligible publication was recorded consistently and could subsequently be compared across the literature corpus. The extraction matrix contained several analytical components: (1) bibliographic identity; (2) year of publication; (3) study context; (4) research objective; (5) methodological approach; (6) curriculum focus; (7) representation of *kiai* or religious authority; (8) educational technology dimension; (9) major findings or conceptual propositions; (10) relevance to Islamic education curriculum transformation; and (11) emerging theme. This instrument did not assign artificial numerical scores to qualitative findings. Its purpose was to establish a transparent analytical trail connecting the original scholarly sources with the themes and conceptual propositions generated through the review.

2.5 Validity and Reliability

The trustworthiness of the integrative review was maintained through transparent selection criteria, source verification, systematic extraction, comparative interpretation, and traceability between evidence and synthesis. Every conceptual proposition developed during the review was required to be traceable to relevant scholarly literature rather than generated from unsupported assumptions.

Analytical consistency was strengthened by applying the same extraction dimensions to all eligible publications and repeatedly comparing emerging themes with the original source material. Studies presenting different or contradictory perspectives were retained when relevant rather than excluded merely because they did not support the dominant interpretation. This procedure was important for reducing selective interpretation and ensuring that the resulting conceptual framework reflected both convergence and tension within the literature. Particular attention was also given to chronological validity. Because the literature synthesis represents the knowledge base available up to 2024, publications appearing after the established cut-off were not used as evidence in the analysis. Bibliographic information and publication years were checked before studies were incorporated into the final synthesis. This chronological boundary ensures that the review remains consistent with the temporal scope of the study.

2.6 Research Sources and Eligibility Criteria

Unlike field-based empirical research, this study did not involve human participants or a geographical research location. The research corpus consisted entirely of scholarly literature relevant to the transformation of Islamic education curriculum. Consequently, the terms *research subject* and *research location* used in conventional empirical studies were replaced by research sources and eligibility criteria.

The literature corpus was developed around three interconnected evidence clusters: (1) Islamic education curriculum and curriculum transformation; (2) *kiai* authority, pesantren pedagogy, and religious educational leadership; and (3) educational technology, digital pedagogy, and technological adaptation within Islamic education. Studies addressing intersections between two or more clusters received particular analytical attention because they provided stronger evidence for constructing the integrative framework. The final corpus was restricted to literature that satisfied the predetermined eligibility requirements and was available within the established temporal boundary. This study did not generate or analyze survey responses, interview transcripts, observational records, student achievement scores, institutional experiments, or other primary field data. Accordingly, the conclusions of this study represent a conceptual synthesis of the available scholarly literature, rather than claims concerning the measured effectiveness or causal impact of *kiai* authority or educational technology on learners.

3. RESULTS AND FINDINGS

The integrative literature review generated a structured body of findings concerning the transformation of Islamic education curriculum at the intersection of religious authority and educational technology. Unlike field-based empirical research, the findings reported in this section are derived exclusively from the systematic extraction, coding, comparison, and synthesis of eligible scholarly publications. The analysis

was organized according to the three research questions established in the study: the position of *kiai* authority within curriculum transformation, the function of educational technology within Islamic educational practices, and the conceptual relationship between these dimensions in constructing an integrative model of curriculum transformation. The synthesis revealed that the literature does not position curriculum transformation as a simple transition from traditional to technologically modern education. Instead, the reviewed studies collectively indicate a multidimensional process involving curriculum values, pedagogical authority, institutional context, learning practices, and technological adaptation.

3.1 Characteristics and Distribution of the Reviewed Literature

The first result concerns the intellectual structure of the literature included in the synthesis. Following eligibility screening and data extraction, the relevant publications could be organized into three major evidence domains: Islamic education curriculum and curriculum transformation; *kiai*/pesantren authority and pedagogical tradition; and educational technology and digital pedagogy. Although individual publications differed in research setting, methodological orientation, and terminology, these domains provided sufficient conceptual overlap to enable cross-study synthesis.

The literature concerning Islamic education curriculum predominantly addressed curriculum orientation, educational values, institutional adaptation, curriculum implementation, and the relationship between Islamic educational identity and changing social demands. A second cluster emphasized pesantren, religious leadership, local educational traditions, and the role of authority in maintaining or directing institutional practices. The third cluster concentrated on educational technology, digital pedagogy, online learning, technology-supported instruction, and emerging forms of digital educational adaptation. Importantly, relatively few studies explicitly connected all three dimensions. This distribution constituted an empirical result of the review itself and provided the foundation for identifying the conceptual fragmentation addressed by this study.

Table 2. Evidence Domains Identified through the Integrative Literature Review

Evidence Domain		Dominant Focus Identified in the Literature	Relationship to Curriculum Transformation
Islamic Curriculum	Education	Curriculum orientation, Islamic values, curriculum development, learning content, institutional adaptation	Establishes the substantive and normative domain of transformation
Kiai Authority and Pesantren Pedagogy		Religious authority, pedagogical guidance, tradition, legitimacy, institutional culture	Provides normative and pedagogical mechanisms for accepting and directing change
Educational Technology and Digital Pedagogy		Digital learning, technological resources, accessibility, instructional flexibility, technology-supported pedagogy	Provides adaptive mechanisms for curriculum delivery and pedagogical innovation
Cross-domain Studies		Relationships among values, institutional adaptation, pedagogy, and technological change	Provides evidence for constructing an integrative curriculum framework

Table 2 demonstrates that the evidence base is not homogeneous. Instead, curriculum, authority, and technology have largely developed as interconnected but not fully integrated scholarly domains. This pattern became the first major finding of the review: the fragmentation occurs primarily at the level of conceptual integration rather than because any of the three domains is absent from existing scholarship.

3.2 Thematic Findings on Islamic Education Curriculum Transformation

The coding and categorization process generated recurring concepts concerning the meaning of curriculum transformation in Islamic educational settings. Across the reviewed literature, transformation was not consistently represented as the replacement of an existing curriculum. Instead, recurring concepts concerned adaptation, contextualization, preservation of values, pedagogical renewal, institutional responsiveness, and integration of contemporary educational resources.

These findings produced three interconnected dimensions of curriculum transformation. The first was normative continuity, referring to the preservation of Islamic values, religious educational purposes, and institutional identity during curriculum change. The second was pedagogical adaptation, referring to adjustments in learning strategies, instructional resources, teacher–learner interaction, and curriculum implementation in response to changing educational environments. The third was technological responsiveness, referring to the incorporation of digital resources and technologically supported learning practices within curriculum processes.

Table 3. Thematic Structure of Islamic Education Curriculum Transformation

Main Theme	Recurring Concepts Identified	Curriculum Meaning
Normative Continuity	Islamic values, religious identity, moral orientation, educational tradition	Transformation maintains the normative foundation of Islamic education
Pedagogical Adaptation	Contextual learning, instructional adjustment, flexible pedagogy, learner needs	Transformation modifies how curriculum is experienced and implemented
Technological Responsiveness	Digital resources, educational technology, digital pedagogy, access to learning	Transformation expands curriculum delivery and learning possibilities
Institutional Contextualization	Pesantren culture, local conditions, institutional identity, educational authority	Transformation is adapted to the social and institutional context

The results summarized in Table 3 indicate that curriculum transformation cannot be reduced to digitalization. Technology constitutes only one component within a wider transformation process. The reviewed literature instead positions curriculum change at the intersection of values, pedagogy, institutional context, and contemporary educational resources. This distinction became particularly important when the analysis was extended to the role of *kiai* authority.

3.3 Kiai Authority as a Normative-Pedagogical Anchor

The second major finding emerged from literature addressing *kiai*, pesantren leadership, religious authority, and pedagogical traditions. The thematic synthesis indicated that *kiai* authority operates beyond conventional organizational leadership. Across the relevant literature, authority was associated with the legitimation of educational practices, preservation and interpretation of religious values, guidance of pedagogical orientation, maintenance of institutional identity, and negotiation of educational change.

Three analytical functions were identified. First, normative orientation refers to the role of religious authority in maintaining the correspondence between curriculum change and Islamic educational values. Second, pedagogical legitimation describes how educational practices and innovations gain contextual acceptance within pesantren through established structures of religious and educational authority. Third, institutional mediation concerns the position of authority in negotiating between inherited educational traditions and external pressures for educational adaptation.

The literature synthesis therefore produced an important distinction: *kiai* authority should not be conceptualized merely as resistance to modernization. The reviewed evidence instead permits its interpretation as a normative-pedagogical anchor within curriculum transformation. Such an anchor does not necessarily prevent change; rather, it provides a value-based reference through which curriculum innovations can be interpreted and contextualized.

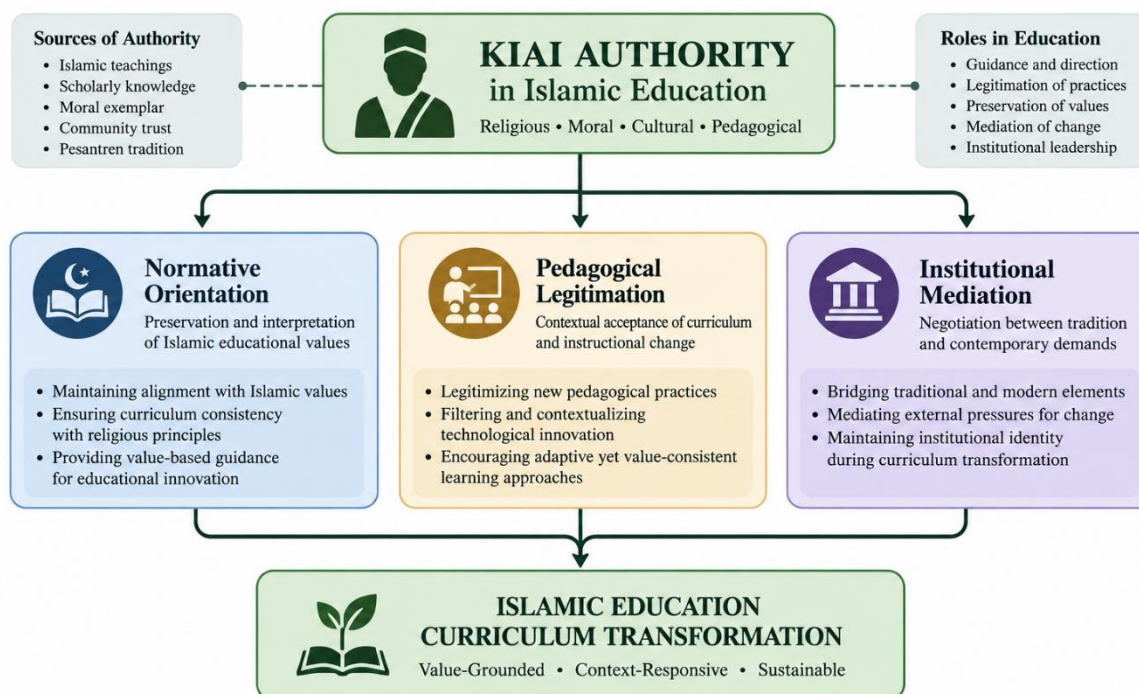


Figure 3. Thematic Configuration of Kiai Authority in Islamic Education Curriculum Transformation

Figure 3 summarizes the thematic relationships derived from the literature. The synthesis demonstrates that religious authority is relevant to curriculum transformation not primarily because it controls technological adoption, but because it participates in determining the meaning, legitimacy, direction, and contextual boundaries of educational change.

3.4 Educational Technology as an Adaptive Pedagogical Instrument

Analysis of literature concerning educational technology and digital pedagogy generated a different but complementary thematic structure. Educational technology was most consistently associated with expanded learning access, diversification of instructional resources, flexibility of learning environments, increased opportunities for interaction, and adaptation of curriculum delivery. However, the synthesis also identified an important distinction between technology adoption and curriculum transformation. The presence of digital devices, platforms, applications, or online learning environments did not in itself constitute curriculum transformation. Technology became curriculum-relevant when it altered or supported the ways curriculum content was accessed, pedagogical activities were organized, learning experiences were facilitated, or educational objectives were pursued. This distinction resulted in the conceptualization of educational technology as an adaptive pedagogical instrument rather than an independent determinant of educational modernization. Its contribution to curriculum transformation depends on the relationship between technological possibilities and the educational purposes, institutional contexts, and value orientations within which they are implemented.

Table 4. Educational Technology Functions Identified in the Literature

Technology-Related Theme	Curriculum Function
Access Expansion	Extending access to curriculum content and learning resources
Resource Diversification	Providing multiple forms and representations of educational materials
Pedagogical Flexibility	Supporting variation in instructional strategies and learning environments
Interaction Enhancement	Facilitating new forms of learner–content and educational interaction
Contextual Adaptation	Enabling curriculum delivery to respond to particular institutional and learner conditions

The findings in Table 4 demonstrate that technology has a predominantly enabling function. Accordingly, the review does not support treating technology as a substitute for Islamic educational authority, curriculum philosophy, or pedagogical relationships. Instead, its strongest conceptual position is as an instrument through which curriculum adaptation can be operationalized.

3.5 Cross-Study Synthesis: From Tradition–Technology Dichotomy to Integrative Transformation

Cross-study comparison revealed a recurring tension between the preservation of Islamic educational traditions and the adoption of contemporary pedagogical technologies. Nevertheless, the integrative synthesis showed that interpreting these dimensions as an unavoidable binary opposition inadequately represents the broader literature.

When the thematic results from the three evidence domains were compared, a complementary relationship became visible. Islamic education curriculum provides the central educational domain; *kiai* authority provides normative-pedagogical orientation; and educational technology provides adaptive pedagogical capacity. Curriculum transformation consequently emerges from their interaction rather than from the dominance of one component over another.

Three cross-domain propositions were generated from this synthesis. First, technological adaptation becomes curriculum transformation only when it is connected to educational purposes and curriculum practices. Second, religious authority contributes to transformation when it provides normative orientation and contextual legitimacy rather than functioning solely as institutional control. Third, sustainable transformation requires alignment among Islamic educational values, pedagogical adaptation, institutional context, and technological affordances.

Table 5. Cross-Domain Synthesis of the Review Findings

Dimension	Primary Contribution	Risk When Isolated	Integrative Position
Islamic Education Curriculum	Defines values, content, objectives, and learning experiences	Curriculum stagnation when disconnected from changing contexts	Central domain of transformation
Kiai Authority	Provides normative orientation and pedagogical legitimacy	Excessive preservation without adaptation	Normative-pedagogical anchor
Educational Technology	Expands pedagogical and curriculum possibilities	Technology adoption without educational meaning	Adaptive pedagogical instrument
Integration	Connects continuity and adaptation	Fragmented educational change	Context-responsive curriculum transformation

The cross-domain comparison therefore generated a more specific result than the general claim that tradition and technology can coexist. It indicates **how** their relationship can be conceptualized within curriculum scholarship: curriculum remains the organizing domain, authority provides normative direction, and technology supplies adaptive mechanisms.

3.6 Integrative Framework for Islamic Education Curriculum Transformation

The final analytical stage integrated the preceding themes into a conceptual framework. The framework was generated from the relationships identified through coding, categorization, and cross-study comparison rather than from statistical modeling or field-based causal testing. Three principal components constitute the model: Islamic Education Curriculum, Kiai Authority, and Educational Technology.

Within the framework, Islamic education curriculum occupies the central position because transformation concerns changes in educational objectives, content, pedagogy, learning experiences, resources, and implementation. *Kiai* authority functions as the normative-pedagogical anchor, maintaining the connection between curriculum transformation and Islamic educational values while providing contextual legitimacy for adaptation. Educational technology functions as the adaptive pedagogical instrument, extending possibilities for curriculum delivery, learning interaction, resources, and contextual responsiveness.

The interaction between these dimensions generates what this study terms Value-Grounded Adaptive Curriculum Transformation. This concept describes curriculum transformation in which technological adaptation is neither rejected in the name of tradition nor adopted independently of religious and pedagogical considerations. Instead, innovation is filtered, contextualized, and pedagogically integrated through the normative structure of Islamic education.

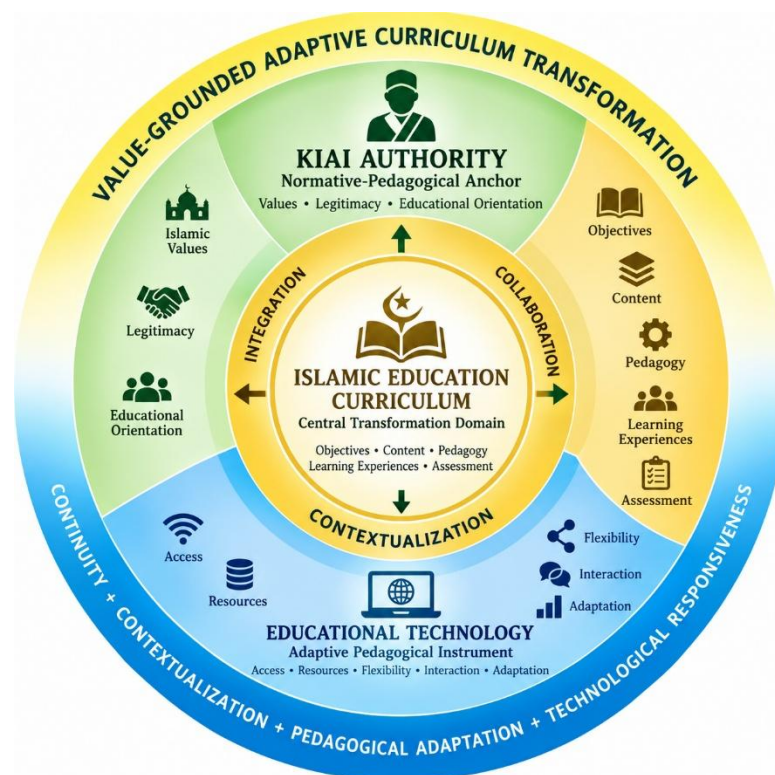


Figure 4. Integrative Framework for Value-Grounded Adaptive Islamic Education Curriculum Transformation.

The framework constitutes the principal result of the integrative review. It reframes Islamic education curriculum transformation as a process in which religious authority does not merely preserve tradition and technology does not independently produce modernization. Instead, *kiai* authority supplies normative-pedagogical grounding, educational technology supplies adaptive possibilities, and the curriculum functions as the domain in which these forces are negotiated and translated into educational practice.

4. DISCUSSION

The findings of this integrative literature review demonstrate that the transformation of Islamic education curriculum cannot be adequately explained through a conventional dichotomy between the preservation of religious tradition and the adoption of educational technology. Instead, the synthesis identifies a relational structure in which Islamic education curriculum constitutes the central domain of transformation, *kiai* authority functions as a normative-pedagogical anchor, and educational technology operates as an adaptive pedagogical instrument. This interpretation extends previous curriculum scholarship that has predominantly examined curriculum development, religious values, leadership, or technological innovation as relatively separate educational concerns. Nasir (2021), for example, emphasized curriculum development and accreditation within traditional Islamic schools, while Sirojuddin et al. (2022) demonstrated the importance of integrated curriculum management in pesantren. More recent work by Nurdin et al. (2024) similarly showed that Islamic Religious Education curriculum development requires adaptation of learning materials, methods, media, and assessment to contextual educational needs. The present synthesis confirms these adaptive characteristics but advances the discussion by identifying authority and technology as two interacting mechanisms through which such adaptation can be normatively directed and pedagogically operationalized. Thus, the principal contribution is not an argument for greater digitalization, but a reconceptualization of curriculum transformation as a value-grounded and context-responsive process.

The first major finding concerns normative continuity as an inseparable dimension of Islamic education curriculum transformation. The reviewed studies indicate that curricular change in Islamic educational institutions remains strongly connected to religious values, institutional identity, and culturally embedded educational purposes. This finding is consistent with Chanifah et al. (2021), who positioned spirituality as an important foundation for Islamic education, and Mujahid (2021), whose investigation of modern pesantren demonstrated the continuing significance of Islamic orthodoxy in character education. It is also reinforced by Mukhibat et al. (2024), who demonstrated that curriculum development and evaluation within Islamic higher education can accommodate religious moderation as an explicit educational orientation. Similarly, Zamroni et al. (2024) showed that local-content curriculum management can contribute to the formation of religious behavior. Taken together, these studies demonstrate that adaptation does not necessarily require the displacement of normative educational foundations. The current review develops this observation further by identifying normative continuity not as the opposite of transformation, but as one of its constitutive mechanisms. In Islamic education, transformation can

therefore occur through reinterpretation and contextualization while retaining the value structures that provide curriculum with educational legitimacy.

This finding provides an important answer to the first research problem concerning the position of *kiai* authority within curriculum transformation. The synthesis indicates that *kiai* authority should not be reduced to conventional administrative leadership. Faisal et al. (2022) demonstrated the continuing significance of traditional *kiai* authority in strengthening religious moderation, while Rozaq et al. (2022) identified *kiai* leadership as an important mechanism for strengthening santri's moderation attitudes. Studies of pesantren education likewise show that institutional identity, religious values, and leadership remain influential even as pesantren respond to broader social changes. Kawakip and Sulanam (2023), for example, highlighted shared values and Islamic educational identity within an East Java pesantren, whereas Abidin and Sirojuddin (2024) emphasized pesantren traditions in developing prophetic leadership. These findings support the interpretation that authority operates through value formation and pedagogical orientation rather than exclusively through organizational control.

However, the present study extends those previous findings in an important way. Earlier scholarship predominantly locates *kiai* within the conceptual domains of leadership, religious moderation, institutional culture, or social authority. The cross-study synthesis conducted here relocates *kiai* authority within the curriculum transformation process itself. Three interconnected functions emerged: normative orientation, pedagogical legitimation, and institutional mediation. Normative orientation maintains correspondence between educational change and Islamic values; pedagogical legitimation provides contextual acceptance for changing instructional practices; and institutional mediation enables negotiation between inherited educational traditions and contemporary demands. This represents a new conceptual finding because *kiai* authority is no longer interpreted simply as a contextual characteristic surrounding curriculum implementation. Instead, it becomes a normative-pedagogical mechanism operating within curriculum transformation.

The second research problem concerns the position of educational technology within Islamic educational practices. The synthesis indicates that technology contributes most meaningfully to curriculum transformation when it modifies or supports curriculum access, learning resources, pedagogical flexibility, interaction, and contextual adaptation. This interpretation is consistent with broader digital pedagogy scholarship emphasizing that technological availability alone does not determine educational quality. Rapanta et al. (2021), for instance, highlighted the necessity of balancing technology and pedagogy in post-pandemic education, while Yates et al. (2021) demonstrated that students' online-learning experiences are shaped by the interaction between technology and pedagogy. Within the Indonesian Islamic education context, Sirojuddin (2023) reported the utilization of creative and innovative learning technology, while Humammi et al. (2024) examined the effectiveness of information technology through the Merdeka Mengajar platform in Islamic Religious Education learning. Mahsusi et al. (2024) further demonstrated the relevance of digital transformation to madrasah management and Islamic culture. These studies collectively support the technological dimension identified in the present synthesis while also indicating that educational technology is embedded within broader pedagogical and institutional arrangements.

Nevertheless, this review identifies an important distinction between digital adoption and curriculum transformation. Introducing a learning platform, digital media, or technological device represents technological adoption, but it becomes curriculum transformation only when technological affordances influence how curriculum objectives, content, pedagogy, learning experiences, resources, or assessment are organized and enacted. This distinction is particularly important because technology-centered educational discourse can implicitly treat digitalization as synonymous with innovation. The evidence synthesized here does not support such an automatic relationship. Instead, technology assumes curriculum significance through its pedagogical function and contextual alignment. Accordingly, the new conceptual position generated from the review defines educational technology as an adaptive pedagogical instrument. This interpretation shifts attention from what technologies Islamic institutions possess toward how technological affordances become educationally meaningful within the curriculum.

The comparison between authority-oriented and technology-oriented literature also reveals why the tradition–technology dichotomy is analytically insufficient. Studies examining challenges faced by pesantren in contemporary society already indicate that Islamic boarding schools continually negotiate changing educational and social conditions. Lundeto et al. (2021), for example, identified challenges and learning strategies of Islamic education in pesantren during the Industrial Revolution 4.0, while Kholili (2021) discussed challenges confronting pesantren in the Society 5.0 era. Budiharso et al. (2023) demonstrated historically that the pesantren educational system itself has undergone transformation across changing political and social periods. More recently, Arif et al. (2024), through a systematic literature review of Indonesian pesantren education from 2014 to 2024, documented the continuing development and changing concerns surrounding pesantren education. These studies challenge the assumption that pesantren represents a static educational system. The present synthesis extends this insight by demonstrating that continuity and adaptation can operate simultaneously through different curriculum mechanisms: authority protects and interprets normative continuity, whereas technology expands adaptive pedagogical possibilities.

The relationship between these mechanisms produces the third and most important answer to the research questions. Cross-study comparison indicates that *kiai* authority and educational technology should neither be treated as competing forces nor simply combined as two independent components. Their relationship is mediated by the Islamic education curriculum. This means that the question is not whether religious authority accepts technology, but how normative authority influences the educational purposes for which technology is selected, contextualized, and incorporated into curriculum practices. Conversely, technology does not transform religious authority itself; it expands the pedagogical possibilities available for translating curriculum objectives and content into contemporary learning experiences. This three-way relationship—authority–curriculum–technology—is insufficiently articulated in the previous studies examined in the review and consequently constitutes the central conceptual finding of this study.

Based on this synthesis, the study proposes Value-Grounded Adaptive Curriculum Transformation as its principal conceptual contribution. The model differs from technology-driven curriculum transformation because technological responsiveness constitutes only one dimension of change. It also differs from preservation-oriented approaches because normative continuity does not require pedagogical immobility. Instead, transformation emerges from four mutually reinforcing processes: continuity, through which foundational Islamic educational values are retained;

contextualization, through which curriculum responds to institutional and sociocultural realities; pedagogical adaptation, through which teaching and learning practices evolve; and technological responsiveness, through which relevant technological affordances are incorporated into curriculum experiences. Within this model, *kiai* authority operates as the normative-pedagogical anchor, educational technology as the adaptive pedagogical instrument, and Islamic education curriculum as the central transformation domain.

This conceptualization also provides a more nuanced interpretation of institutional authority than the previous version of the argument that strong leadership can simply “overcome” technological infrastructure barriers. The literature reviewed does not provide sufficient evidence to conclude that *kiai* authority eliminates infrastructure limitations, nor would an integrative literature review permit such a causal claim. What the synthesis does support is that authority may influence legitimation, orientation, contextualization, and institutional mediation of educational innovation. Likewise, educational technology may expand pedagogical opportunities, but the review does not establish that it directly causes improvements in student competencies. This distinction is theoretically important because it moves the proposed framework away from unsupported causal determinism and toward a relational explanation of curriculum transformation.

The theoretical contribution of the study therefore lies in shifting Islamic curriculum transformation from a two-dimensional tradition-versus-modernization problem toward a three-component authority–curriculum–technology relationship. Existing studies provide substantial knowledge about Islamic curriculum, pesantren authority, and educational technology separately; the new contribution generated through the integrative review is the identification of their functional positions within a common framework. The curriculum functions as the domain where transformation occurs, authority establishes normative-pedagogical orientation, and technology expands adaptive pedagogical capacity. This framework explains why technological innovation that is disconnected from curriculum objectives may remain superficial and why preservation of values that is disconnected from pedagogical adaptation may inhibit curriculum responsiveness.

Practically, the findings suggest that Islamic educational institutions should avoid equating curriculum modernization with the procurement of digital technology. Curriculum developers should begin with educational objectives, Islamic values, learner needs, and institutional contexts before determining which technological resources are pedagogically appropriate. *Kiai* and other religious educational leaders can participate not merely as institutional approvers but as partners in articulating the normative and pedagogical boundaries of curriculum innovation. Teachers, meanwhile, remain central actors in translating these orientations into learning experiences. Technology should therefore be selected according to its ability to strengthen curriculum access, diversify resources, support pedagogical flexibility, facilitate meaningful interaction, and accommodate contextual learning needs. Such an approach allows Islamic educational institutions to become technologically responsive without positioning technological modernization as a substitute for their educational identity.

Overall, comparison with previous scholarship demonstrates that the three research questions converge on one central conclusion: Islamic education curriculum transformation is most coherently understood as value-grounded adaptive change rather than technological replacement of tradition. Previous studies provide evidence for the individual importance of curriculum development, *kiai* authority, pesantren identity, and technological adaptation. The integrative

contribution of this study is to connect these previously fragmented findings and identify their distinct functional positions within curriculum transformation. This synthesis generates a framework in which normative continuity and technological responsiveness are not contradictory endpoints but interconnected dimensions mediated through curriculum design and pedagogical practice.

5. CONCLUSION AND SUGGESTIONS

5.1 Conclusion

Future research should expand longitudinal investigations across broader multi-regional Islamic educational networks to evaluate the long-term scalability of hybrid curriculum models in diverse socioeconomic landscapes, while policymakers and institutional leaders are urged to design teacher training frameworks that harmoniously integrate computational tools with classical spiritual mentorship.

This integrative literature review examined how *kiai* authority and educational technology can be conceptually integrated within the transformation of Islamic education curriculum. The synthesis demonstrates that curriculum transformation should not be interpreted as a linear movement from traditional Islamic education toward technologically modern education. Instead, the reviewed literature reveals a multidimensional process involving normative continuity, pedagogical adaptation, institutional contextualization, and technological responsiveness. Regarding the first research question, the study identifies *kiai* authority as a normative-pedagogical anchor operating through normative orientation, pedagogical legitimation, and institutional mediation. Regarding the second research question, educational technology is identified as an adaptive pedagogical instrument whose curriculum significance lies in expanding access, resources, flexibility, interaction, and contextual adaptation rather than merely introducing digital devices or platforms. Regarding the third research question, the synthesis demonstrates that these dimensions are connected through the Islamic education curriculum as the central transformation domain.

The principal conceptual contribution of this study is therefore the Value-Grounded Adaptive Curriculum Transformation framework, which integrates four processes: continuity, contextualization, pedagogical adaptation, and technological responsiveness. Within this framework, *kiai* authority provides normative-pedagogical grounding, educational technology provides adaptive pedagogical possibilities, and curriculum becomes the space in which religious values, educational purposes, pedagogical practices, and technological innovation are negotiated and integrated. Importantly, these conclusions represent a literature-grounded conceptual synthesis rather than evidence of causal effectiveness. The study does not claim that educational technology statistically improves student competence, that *kiai* authority eliminates infrastructure barriers, or that the proposed framework has been empirically validated in particular pesantren. Instead, its contribution lies in integrating previously fragmented scholarly findings into a coherent conceptual explanation of Islamic education curriculum transformation.

5.2 Suggestions

Future research should empirically examine the proposed Value-Grounded Adaptive Curriculum Transformation framework across diverse Islamic educational contexts, including traditional and modern pesantren, madrasas, and other Islamic educational institutions. Such studies could investigate how the three functions of *kiai* authority identified in this review—normative orientation, pedagogical legitimation, and institutional mediation—operate during actual curriculum development and technological adaptation. Comparative research across different institutional and geographical contexts would also be valuable for determining which components of the framework are context-specific and which demonstrate broader applicability.

Further studies should also examine the curriculum-level consequences of educational technology rather than limiting analysis to technology adoption or user acceptance. Particular attention should be directed toward how technological resources influence curriculum objectives, content organization, pedagogy, learning experiences, and assessment while remaining aligned with Islamic educational values. Mixed-method, longitudinal, design-based, and curriculum-evaluation studies could subsequently be employed to test, refine, or challenge the framework proposed by this review.

For curriculum developers and Islamic educational institutions, technological innovation should be preceded by an assessment of educational purposes, Islamic values, pedagogical requirements, learner characteristics, and institutional context. Religious leaders, curriculum developers, teachers, and technology specialists should therefore be involved collaboratively in curriculum transformation. Through such collaboration, technological responsiveness can function as an instrument for educational adaptation while normative continuity continues to provide the value foundation of Islamic education.

6. REFERENCES

- Alam, A. (2023). Educational technology: Exploring the convergence of technology and pedagogy through mobility, interactivity, AI, and learning tools. In *Cogent Engineering* (Vol. 10, Number 2). <https://doi.org/10.1080/23311916.2023.2283282>
- Balán, L. (2023). Solar Community Hubs: how multinational ‘sustainable’ technology companies are replacing church and state in their ‘civilising and philanthropic’ educational work. *Globalisation, Societies and Education*, 24(3), 963–974. <https://doi.org/10.1080/14767724.2023.2288155>
- Berthelot, D., Carlini, N., Cubuk, E. D., Kurakin, A., Zhang, H., Raffel, C., & Sohn, K. (2020). Remixmatch: Semi-Supervised Learning With Distribution Alignment and Augmentation Anchoring. In *8th International Conference on Learning Representations, ICLR 2020*. <https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=85150642697&origin=inward>

- Bortolotti, I., Rossi, F., & Biraglia, A. (2025). The Use of Technology by Children Aged 0–6: A Study on Educational Models, Attitudes, and Media Behaviors of Educators and Teachers in the Context of the “New Normal.” In T. L. (Ed.), *Communications in Computer and Information Science: 2537 CCIS* (pp. 19–32). Springer Science and Business Media Deutschland GmbH. https://doi.org/10.1007/978-3-031-95627-0_2
- Boude, O., Acuña, N., & Vargas, A. (2025). Training of early childhood pedagogy graduates on educational technology: Systematic review. *Estudios Pedagógicos*, 51(1), 281–294. <https://doi.org/10.4067/S0718-07052025000100281>
- Cailleba, P., & Edelbloude, J. (2026). Career anchors of French chefs: keys to success in haute cuisine. *Journal of Global Mobility*, 1–30. <https://doi.org/10.1108/JGM-09-2025-0087>
- Chootongchai, S., & Maneerat, P. (2026). NextGen Talent-Driven AI Educational Agent. *International Journal of Information and Education Technology*, 16(3), 658–667. <https://doi.org/10.18178/ijiet.2026.16.3.2538>
- Cooper, M., & Rockel, J. (2025). Enacting Pedagogies of Care: Weaving Māori Indigenous Concepts of Compassion and Respect into the Curriculum for 1-Year-Olds. In *Early Childhood Pedagogical Practices Across the World: Selected Case Studies on the Role of Teachers for Learning and Care* (pp. 107–116). Springer Science+Business Media. https://doi.org/10.1007/978-981-96-2747-9_9
- Dallavalle, S., Ribeiro, L. R. B., & Moreira, S. A. S. (2026). Educating for Next-Generation BPM: A PBL-Process Mapping Blueprint Anchored in the Drifts of the Digital Era. In E. R. M., G. A., G. T., S. F., W. M., D. R.M., K. D., A. B., B. W., & R. K. (Eds.), *Lecture Notes in Business Information Processing: 565 LNBIP* (pp. 299–314). Springer Science and Business Media Deutschland GmbH. https://doi.org/10.1007/978-3-032-02936-2_21
- De Leon, J. A., San Juan, J. L., Mayol, A. P., Vicerra, R. R., Concepcion, R. S., Bandala, A., Ambata, L., Orillo, J. C., & Culaba, A. B. (2023). Educational Management Information System: A Short Review. *2023 IEEE 15th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management, HNICEM 2023*. <https://doi.org/10.1109/HNICEM60674.2023.10589235>
- Fernandez-Herrero, J., Urrea-Solano, M., & Alvarez-Herrero, J. F. (2026). Participatory evaluation of an educational augmented reality application in development using the technology acceptance model (TAM). *Discover Education*, 5(1). <https://doi.org/10.1007/s44217-026-01377-1>
- Gunawardena, S. A., Chandraratne, A., & Jayasekara, T. I. (2026). Integrating One Health in human medical curricula: A scoping review of pedagogical strategies and challenges. *Medical Teacher*, 48(6), 1069–1090. <https://doi.org/10.1080/0142159X.2025.2604244>
- Jafari, R., Sarhadi, P., Paykani, A., Refaat, S. S., & Asef, P. (2025). A TD3-Based Reinforcement Learning Algorithm With Curriculum Learning for Adaptive Yaw Control in All-Wheel-Drive Electric Vehicles. *IEEE Access*, 13, 127150–127169. <https://doi.org/10.1109/ACCESS.2025.3587938>
- Kakana, D., & Gkloumpou, A. (2025). Pedagogical Documentation as a “Bridge” Between Parents and the Early Childhood Curriculum. *Social Sciences*, 14(1).

<https://doi.org/10.3390/socsci14010007>

- Khoveyni, M., & Eslami, R. (2026). Identifying anchor points and determining adjustment bounds in data envelopment analysis with negative data. *European Journal of Operational Research*, 330(1), 182–198. <https://doi.org/10.1016/j.ejor.2025.08.001>
- Kinoshita, K., Maruyama, T., Kobayashi, N., Imanishi, S., Maruyama, M., Ohira, G., Endo, S., Tochigi, T., Kinoshita, M., Fukui, Y., Kumazu, Y., Kita, J., Shinohara, H., & Matsubara, H. (2024). An artificial intelligence-based nerve recognition model is useful as surgical support technology and as an educational tool in laparoscopic and robot-assisted rectal cancer surgery. *Surgical Endoscopy*, 38(9), 5394–5404. <https://doi.org/10.1007/s00464-024-10939-z>
- K.W., L., & L.H., W. (Eds.). (2025). 2nd International Conference on Intelligent Technology for Educational Applications, ITEA 2025. *Communications in Computer and Information Science*, 2643, CCIS. <https://www.scopus.com/pages/publications/105019672221?origin=resultslist>
- Li, A., Li, J., & Nong, L. (2025). Research on Improving Preschool Teachers' Educational Research Ability Supported by Big Data Technology. *International Journal of E-Collaboration*, 21(1). <https://doi.org/10.4018/IJeC.368067>
- McCormack, M. (2026). The community anchor model in rural development: lessons from Northern Ireland. *Social Enterprise Journal*. <https://doi.org/10.1108/SEJ-06-2025-0142>
- Milton, J., Deguara, J., Bonello, C., Camilleri, R., & Muscat, T. (2025). Reconfiguring Initial Teacher Education Through COVID-19 Times: Student Teachers' Perspectives and Experiences in Malta. In *Innovations in Pedagogical Practice and Curriculum Development in Higher Education: Contemporary Global Perspectives* (pp. 125–143). Emerald Publishing. <https://doi.org/10.1108/978-1-83549-506-320251010>
- Mohammed, A. S., Amoah, C., & Diploma, I. B. A. (2025). Technology integration on infrastructure to support educational needs in a college in Ghana. *Infrastructure Asset Management*, 13(1), 50–66. <https://doi.org/10.1680/jinam.24.00030>
- Nandiyan, A. B. D., Kurniawan, T., Bilad, M. R., Al-Obaidi, A. S. M., Farobie, O., & Hammouti, B. (2026). How to Integrate Nanotechnology into Chemical Engineering Education: A Bibliometric and Technological Review of Curriculum Standards, Research Trends, Pedagogical Challenges, and Future Prospects. *ASEAN Journal of Educational Research and Technology*, 5(2), 245–260. <https://www.scopus.com/pages/publications/105038388205?origin=resultslist>
- Opoku, M. J. (2021). Pedagogical model for decolonising, indigenising and transforming science education curricula: A case of south africa. *Journal of Baltic Science Education*, 20(1), 93–107. <https://doi.org/10.33225/jbse/21.20.93>
- Sari, N. K., & Wicaksana, M. F. (2024). Assessment of “Gemoy” Campaign Strategy: Evaluating Digital Media Instruments and Learning Technologies in Political Communication. In *Applied Observation and Pedagogical Studies Poster* (Vol. 3, Number 2, p. 1). https://scholar.google.com/citations?view_op=view_citation&hl=en&user=rOXoKHoAAA-AJ&pagesize=100&citation_for_view=rOXoKHoAAA-AJ:ldfaerwXgEUC

- Simbolon, M., Pongkondek, J. J., Henukh, A., & Ronchintaniawati, D. (2025). AI-Driven Sociocultural Interactive Digital Module for Papua: Advancing Educational Technology to Sustainable Development Goals. *International Journal of Learning, Teaching and Educational Research*, 24(2), 543–559. <https://doi.org/10.26803/ijlter.24.2.27>
- Soriano-Alcantara, J. M., Guillén-Gámez, F. D., & Ruiz-Palmero, J. (2025). Exploring Digital Competencies: Validation and Reliability of an Instrument for the Educational Community and for all Educational Stages. *Technology, Knowledge and Learning*, 30(1), 307–326. <https://doi.org/10.1007/s10758-024-09741-6>
- Su, R., Liu, C., Ma, X., Chen, R., Luo, Y., & Chen, Y. (2026). Using Artificial Intelligence to Reshape Higher Education Such That It Is in Line with Sustainability: A Systematic Review of Pedagogical and Curricular Innovations. *Sustainability (Switzerland)*, 18(5). <https://doi.org/10.3390/su18052360>
- Sun, Q., & Hsiao, I.-H. (2026). Lessons learned from an AI-assisted educational technology for environmental sustainability and waste management. *Educational Technology and Society*, 29(1), 388–407. [https://doi.org/10.30191/ETS.202601_29\(1\).SP08](https://doi.org/10.30191/ETS.202601_29(1).SP08)
- Tang, S. (2025). Technology and Education Integration’: Reconstruction of the Path of Classroom Teaching Empowered by Intelligent Educational Technology - The Rational Use of Artificial Intelligence Based Technology. *2025 International Conference on Artificial Intelligence and Education, ICAIE 2025*, 845–851. <https://doi.org/10.1109/ICAIE64856.2025.11158652>
- Yespanova, I., Turmanov, R., Niyazova, D., Appazov, N., Uaidullakzy, E., Toibazarova, A., & Zhanbekov, K. (2026). Application of Waste Recycling Technology in Educational Laboratory Research: Wastewater Treatment with Sorbent Derived from Rice Straw and Husk of the Kyzylorda Region. *Journal of Chemical Education*, 103(4), 2195–2201. <https://doi.org/10.1021/acs.jchemed.5c01402>