

The Transformation of Pesantren Education Quality Management in the Digital Era: An Integrative Literature Review

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ABSTRACT

Digital transformation is changing how *pesantren* manage learning, administration, and institutional accountability while raising concerns about the continuity of religious authority and educational traditions. This study examines the transformation of *pesantren* education quality management and formulates a context-sensitive framework for the digital era. It uses a structured integrative literature review organized through the Search, Appraisal, Synthesis, and Analysis (SALSA) framework. The final analytical corpus consisted of 27 substantive sources, including journal articles, foundational and conceptual works, and policy or institutional documents selected for their relevance, transparency, contextual fit, and verifiability. The synthesis identifies five drivers of transformation, six recurring challenges, and eight interrelated management dimensions. Spiritual and ethical values form the framework's normative foundation; value-grounded leadership, sustainable quality culture, and contextual internal quality assurance constitute its governance layer; and selective digitalization, human resource and digital competence development, curriculum integration, and strategic collaboration form its operational layer. The framework treats technology as *wasilah* (a means) for educational purposes rather than an end in itself. Because it is derived from an integrative review, the framework represents conceptual relationships rather than empirically established causal effects. Comparative empirical research is required before its effectiveness can be assessed across different *pesantren* contexts.

Keywords: *Digital Transformation, Education Quality Management, Integrative Literature Review, Islamic Education, Pesantren*

A. INTRODUCTION

A *pesantren*, an Indonesian Islamic boarding school, is among Indonesia's longest-established educational institutions. It combines the transmission of Islamic knowledge with religious practice, character formation, and communal life. Within this system, the *kiai* (a senior religious scholar and institutional leader) traditionally exercises religious and educational authority, while *santri* refers to students who live or study within the *pesantren* community. Although rooted in longstanding scholarly traditions, *pesantren* have continuously adapted their educational practices in response to social and institutional change (Azra, 2014; Dhofier, 1982; Mastuhu, 1994). Their development should therefore not be understood as a simple transition from "traditional" to "modern," but as a continuing negotiation among institutional identity, religious authority, and changing educational needs.

Digital transformation has introduced another stage in this process. In education, digital transformation involves more than the adoption of devices or online learning platforms. It may affect pedagogy, administrative services, institutional communication, data management, teacher competence, and decision-making. Digital technology can expand access to learning resources and improve administrative efficiency, but its educational value depends on institutional capacity, equitable access, pedagogical relevance, and sustainable implementation (Global Education Monitoring Report Team, 2023; OECD, 2023). These considerations are particularly important for pesantren because their educational model emphasizes direct teacher-student relationships, residential formation, disciplined religious practice, and the transmission of religious knowledge through established scholarly authority.

Existing studies indicate that pesantren respond to digitalization in different ways. Harnadi et al. (2021) found that traditional religious authority does not necessarily disappear in digital environments, but may instead be preserved and renegotiated through new forms of communication. Research on pesantren leadership and curriculum similarly shows that institutional transformation depends on how leaders balance educational modernization with religious identity (Iskandar et al., 2024). Halimah et al. (2024) demonstrate that changes in educational management can reshape the culture of religious learning while remaining dependent on institutional values, leadership, and organizational practices. Studies of digital administration and learning further suggest that technology can complement established pesantren practices when introduced selectively and supported by institutional readiness (Shofwani et al., 2025; Zuraida & Setiawan, 2025). A recent systematic analysis of pesantren learning models also documents a gradual expansion from conventional instructional practices toward blended and digitally mediated learning (Suresman et al., 2025).

These developments make education quality management an important component of pesantren transformation. Quality management connects institutional leadership, educational culture, curriculum, human resource development, information systems, internal quality assurance, stakeholder participation, and continuous improvement. General quality-management frameworks offer useful principles for planning, evaluation, and institutional improvement (Arcaro, 2024). However, their application in pesantren requires contextual interpretation. Educational quality in a pesantren is not limited to measurable academic outcomes or administrative efficiency; it also encompasses religious understanding, ethical conduct, spiritual discipline, and the institution's responsibility to its community. Consequently, digital innovation should be assessed not only in terms of technological sophistication, but also in relation to its compatibility with these educational purposes.

The available literature provides valuable evidence, but it remains dispersed across different areas of inquiry. Some studies focus on learning media and digital learning models, while others examine religious authority, leadership, curriculum transformation, or administrative modernization (Halimah et al., 2024; Harnadi et al., 2021; Iskandar et al., 2024; Shofwani et al., 2025; Suresman et al., 2025). This

fragmentation makes it difficult to explain how the principal dimensions of pesantren quality management interact within processes of digital transformation. In particular, a clearer synthesis is needed to connect leadership, organizational culture, management systems, human resource development, curriculum, quality assurance, external collaboration, and the preservation of religious values. The issue, therefore, is one of conceptual integration rather than an absence of earlier research or existing transformation models.

Accordingly, this study conducts a structured integrative literature review to examine the transformation of pesantren education quality management in the digital era. It has four objectives: to analyze the factors that make such transformation necessary; identify the principal challenges faced by pesantren; synthesize strategies for improving education quality; and formulate an integrative conceptual model that connects digital and managerial development with the educational values of pesantren. The proposed model is guided by the principle of *al-muhafazhah 'ala al-qadim al-salih wa al-akhdh bi al-jadid al-aslah*, preserving valuable established traditions while adopting better new practices. Its intended contribution is an evidence-informed conceptual framework that may guide subsequent empirical research and institutional planning. Because the framework is derived from the literature rather than direct field evidence, its practical applicability will require further testing across different pesantren contexts.

B. METHODS

This study employed a structured integrative literature review to examine the transformation of education quality management in Indonesian *pesantren*. This design was appropriate because the study sought to integrate empirical research, conceptual publications, policy documents, and foundational works rather than estimate the effect of a specific intervention or claim exhaustive coverage of all available publications. The review was organized using the Search, Appraisal, Synthesis, and Analysis (SALSA) framework described by Grant and Booth (2009). Integrative review principles were also applied to accommodate differences in the designs, contexts, and evidentiary functions of the selected publications (Snyder, 2019).

The search was conducted and updated in August 2026 and covered publications issued from January 2019 to December 2025. Earlier works were retained when they provided foundational explanations of *pesantren* traditions, leadership, educational management, or quality management. Sources were identified through Google Scholar, Crossref, the Directory of Open Access Journals, relevant Indonesian journal portals, reference-list searches, and official publisher or institutional websites. The end of 2025 was used as the publication cutoff to maintain a complete publication-year boundary. The principal search string was:

("pesantren" OR "Islamic boarding school") AND ("education quality" OR "quality management" OR governance OR leadership OR curriculum OR "quality assurance") AND (digital* OR technolog* OR transformation)

Supplementary searches combined *pesantren* with “digital literacy,” “management information system,” “internal quality assurance,” “teacher digital competence,” “religious authority,” “curriculum transformation,” and “digital learning.” The terms were adjusted to the search functions of the individual platforms. Reference lists of directly relevant publications were also examined to identify additional sources.

Sources were included when they: (1) addressed *pesantren* or a closely comparable Indonesian Islamic education context; (2) discussed educational management, leadership, curriculum, quality assurance, digital learning, digital competence, or religious authority; (3) reported an identifiable research method or presented a relevant conceptual or policy framework; (4) were available in Indonesian or English; and (5) could be traced to an official journal, publisher, institutional, regulatory, or DOI record. Sources were excluded when they discussed technology without a meaningful connection to educational management, addressed religious communication without implications for *pesantren* education, duplicated another publication, or could not be traced to a verifiable publication record.

The final body of literature consisted of 27 substantive sources: 19 journal articles, five foundational or conceptual books, and three policy or institutional documents. Three additional publications—Grant and Booth (2009), Snyder (2019), and Braun and Clarke (2022)—were used to guide the review methodology and were not treated as substantive evidence about *pesantren*. The journal literature primarily covered the 2019–2025 period, while earlier works were used for historical and conceptual interpretation.

The appraisal considered four criteria: relevance to the research objectives, transparency of the reported method, contextual fit with Indonesian Islamic education, and proportionality between the evidence and the claims presented. A numerical risk-of-bias score was not applied because the sources differed substantially in design and evidentiary function. Empirical studies were used to identify context-specific patterns, review articles supported broader developments, policy documents provided regulatory or institutional context, and foundational works informed the historical and educational interpretation of *pesantren*.

Information from the substantive sources was compared according to publication type, research context, study design, principal findings, stated limitations, and relevance to education quality management. The material was then analyzed thematically using the recursive procedures described by Braun and Clarke (2022): familiarization, initial coding, comparison of related codes, theme development, theme review, and analytical definition. Deductive categories were derived from the research objectives, while inductive categories were developed through comparison across the selected sources.

The synthesis was organized into three analytical areas. The first examined factors associated with the need for education quality-management transformation. The second identified recurring constraints on digital adaptation. The third organized the literature into eight interrelated dimensions: value-grounded leadership, sustainable quality culture, selective management and learning digitalization, human resource and digital competence

development, curriculum integration, contextual internal quality assurance, strategic collaboration, and spiritual and ethical value integration.

The review was structured and purposive rather than exhaustive. It does not claim to represent every publication on digital transformation or quality management in *pesantren*, and no PRISMA-style retrieval flow is reported because complete records of the initial search and screening stages were not available. The resulting framework is therefore interpretive and conceptual. It does not establish causal relationships, measure the prevalence or effectiveness of individual strategies, or demonstrate that the proposed dimensions are equally applicable across all *pesantren* contexts.

C. RESULTS AND DISCUSSION

The review identified three connected areas in the literature: the reasons *pesantren* need to reconsider their approaches to education quality management, the constraints that shape digital adaptation, and the institutional dimensions through which transformation may be managed. The synthesis does not imply that all *pesantren* experience the same conditions. Differences in institutional scale, educational orientation, leadership structure, location, financial capacity, and technology access produce different pathways of change.

Table 1 summarizes the traceability between the principal synthesis outputs and the literature used to construct them. The sources listed are representative rather than exhaustive because several publications contributed to more than one analytical category.

Table 1.
Traceability of the Literature Synthesis and Proposed Framework

Analytical Area	Main Synthesis Output	Principal Supporting Sources
Need for transformation	Expanded graduate digital literacy, digitally supported learning, institutional accountability, continuity of established learning practices, and preparedness for educational disruption	Suresman et al. (2025); Makhluf et al. (2023); Nafisah et al. (2024); Nuhrodin and Dhina (2021); Zafi et al. (2021); Shofwani et al. (2025); Lathifah et al. (2025); Republic of Indonesia (2019); Global Education Monitoring Report Team (2023); OECD (2023); Jamil et al. (2025)
Challenges of digital transformation	Tensions involving religious authority, unequal infrastructure and competence, depth of learning, misinformation and digital ethics, reduced direct educational interaction, and organizational resistance	Harnadi et al. (2021); Zafi et al. (2021); Jamil et al. (2025); Makhluf et al. (2023); Suresman et al. (2025); Fanaqi et al. (2025); Sari et al. (2020); Iskandar et al. (2024); Shofwani et al. (2025)
Governance layer	Value-grounded transformational leadership	Iskandar et al. (2024); Zulkarnain (2023); Shofwani et al. (2025)
Governance layer	Sustainable quality culture	Halimah et al. (2024)

Governance layer	Contextual internal quality assurance	Aimah and Nasih (2023); Lathifah et al. (2025); Republic of Indonesia (2019)
Operational layer	Selective digitalization of management and learning	Mahsusi et al. (2024); Shofwani et al. (2025); Zafi et al. (2021)
Operational layer	Human resource and digital competence development	Falloon (2020); Faizin et al. (2025); Jamil et al. (2025); Makhluif et al. (2023)
Operational layer	Curriculum integration	Iskandar et al. (2024); Suresman et al. (2025); Zuraida and Setiawan (2025)
Operational layer	Strategic collaboration	Nafisah et al. (2024); Shofwani et al. (2025)
Normative foundation	Integration of spiritual and ethical values across governance and operational dimensions	Halimah et al. (2024); Harnadi et al. (2021); Zafi et al. (2021)

Source: Authors' synthesis based on the reviewed literature. The sources listed in the final column represent the principal references contributing to each analytical category.

The three analytical areas are discussed in the following subsections. The eight framework dimensions were developed through comparison across these areas rather than adopted from a single publication.

1. The Need for Education Quality Management Transformation

Five considerations explain why education quality management has become increasingly relevant to pesantren in the digital era. First, the expected capabilities of pesantren graduates have expanded. Religious knowledge and character formation remain central, but students also need the ability to locate, evaluate, and use digital information responsibly. Studies of pesantren learning models indicate a gradual movement toward blended and digitally supported instruction, although this development is uneven across institutions (Suresman et al., 2025). Research on digital readiness and religious literacy similarly indicates that access to technology does not automatically produce the capacity to evaluate information or use digital resources for educational purposes (Makhluif et al., 2023; Nafisah et al., 2024; Nuhrocin & Dhina, 2021). Digital competence should therefore complement, rather than replace, the religious and ethical purposes of pesantren education.

Second, digital technology has altered how educational materials, communication, and institutional services are organized. At Darul Ulum Kudus, for example, digital platforms were used for communication, learning, and public engagement, but their adoption also affected established patterns of authority between the *kiai* and *santri* (Zafi et al., 2021). Evidence from Buntet Pesantren likewise suggests that digital applications can support student-data management, administration, and learning when they are integrated with institutional priorities (Shofwani et al., 2025). These cases

show that digitalization is an organizational change, not merely the acquisition of hardware or software.

Third, pesantren operate within a national education environment that increasingly emphasizes accountability and quality assurance. Indonesian Law No. 18 of 2019 on Pesantren recognizes the educational, religious, and community functions of pesantren while protecting their institutional characteristics (Republic of Indonesia, 2019). Quality assurance must therefore address public accountability without reducing pesantren education to administrative compliance. Research on quality assurance in pesantren identifies persistent concerns involving governance, resource allocation, institutional standards, and the preservation of local educational identity (Lathifah et al., 2025).

Fourth, institutional continuity depends partly on the ability to respond to students' changing learning environments. This does not mean that every traditional method has become obsolete. The recent development of pesantren learning models suggests that *sorogan*—individual recitation before a teacher—and *bandongan*—teacher-led explanation of classical texts—can coexist with digital repositories, online communication, and blended learning (Suresman et al., 2025). The management issue is therefore how to determine which practices should remain face-to-face, which activities can be supported digitally, and how both forms can contribute to stated educational outcomes.

Fifth, experiences of educational disruption have exposed differences in institutional readiness. International evidence shows that technology can support educational continuity, but its benefits depend on access, teacher competence, institutional support, and pedagogical purpose (Global Education Monitoring Report Team, 2023; OECD, 2023). In the pesantren context, low digital literacy, limited infrastructure, and the absence of clear policies have been identified as barriers to consistent technology adoption (Jamil et al., 2025). Digital preparedness should consequently be treated as one component of institutional resilience rather than as an objective in itself.

2. Challenges in Pesantren Digital Transformation

The literature points to six recurring challenges, although their severity varies among institutions. The first is the perceived tension between tradition and technological change. Pesantren education relies on personal relationships, religious authority, disciplined communal life, and direct engagement with *kitab kuning*—classical Islamic scholarly texts. Technology may broaden access to these texts, but it cannot automatically reproduce the interpretive guidance, ethical example, and social discipline provided through direct teacher–student interaction. Research indicates that digital media may renegotiate religious authority rather than simply eliminate it (Harnadi et al., 2021; Zafi et al., 2021). The relevant management question is therefore how authority and educational responsibility are maintained when communication moves partly into digital environments.

The second challenge is the digital divide. It includes unequal internet access, limited institutional budgets, differences in educators' competence, and disparities in students' access to suitable devices. These conditions make uniform digital-transformation policies impractical. Research in pesantren settings has identified infrastructure limitations and uneven digital readiness as constraints on educational technology adoption (Jamil et al., 2025; Makhluaf et al., 2023). Technology planning must therefore begin with an institutional needs assessment rather than the assumption that all pesantren have comparable resources.

The third challenge concerns depth of learning. Digital materials can increase the speed and range of access, but abundant information does not necessarily produce careful interpretation. This concern is especially relevant to religious learning, where textual understanding normally develops through guided reading, discussion, correction, and sustained practice. Suresman et al. (2025) found that pesantren learning models are becoming more digitally varied, but this development does not remove the pedagogical importance of established teacher-guided methods. Digital resources should be designed as support for structured learning rather than as substitutes for scholarly guidance.

The fourth challenge involves distraction, misinformation, and inappropriate content. Digital participation exposes students to information of highly variable quality. Studies of digital ethics and information literacy show that critical evaluation, privacy awareness, responsible communication, and the ability to recognize misleading information are distinct competencies that require instruction (Fanaqi et al., 2025; Sari et al., 2020). Restricting devices may address some immediate risks, but restrictions alone do not equip students to act responsibly outside the institution.

The fifth challenge is the possible reduction of direct educational interaction. Pesantren character education often depends on *uswah hasanah*, or exemplary conduct, in which students learn through sustained observation of teachers and senior members of the community. Digital communication can extend access and coordination, but it offers only partial support for this relational process. Management decisions should preserve sufficient face-to-face interaction for moral guidance, religious practice, feedback, and communal responsibility.

The sixth challenge is organizational resistance. Resistance should not be interpreted solely as rejection of modernity. It may reflect limited competence, uncertainty about educational benefits, concern about authority, insufficient resources, or earlier experiences with poorly implemented technology. Studies of leadership and curriculum transformation show that institutional change is more sustainable when leaders communicate its educational purpose, involve relevant stakeholders, and introduce it in stages (Iskandar et al., 2024; Shofwani et al., 2025). Accordingly, resistance should be diagnosed before it is treated as an obstacle to be overcome.

3. An Integrative Framework for Pesantren Education Quality Management

The synthesis generated eight connected dimensions. They should not be read as a fixed sequence or universally applicable implementation package. Each pesantren may

assign different priorities according to its educational orientation, resources, and institutional readiness.

1) Value-Grounded Transformational Leadership

Leadership connects religious legitimacy with institutional direction. The *kiai* remains an important source of authority, but increasingly complex educational organizations may also require distributed managerial responsibility, technology expertise, and participation by teachers and administrative personnel. Research on pesantren leadership indicates that curriculum and management transformation depend on leaders' ability to negotiate continuity and change (Iskandar et al., 2024; Zulkarnain, 2023). The Buntet case also demonstrates the role of leadership in linking institutional history, religious identity, and administrative modernization (Shofwani et al., 2025). Implementation may involve a written transformation agenda, a team representing religious and managerial expertise, staged resource allocation, and regular consultation with teachers, students, parents, and alumni. The purpose is not to replace the *kiai*'s authority with corporate management, but to provide the organizational capacity needed to translate educational vision into accountable practice.

2) A Sustainable Quality Culture

Quality culture concerns the shared practices through which institutional members define, monitor, and improve education. In a pesantren, this culture may connect continuous improvement with *ihsan* (performing one's responsibilities with excellence), *itqan* (careful and dependable work), and *amanah* (trustworthiness). These values should not be used as symbolic labels for ordinary administrative procedures. They need to be reflected in observable practices such as timely feedback, transparent responsibilities, professional learning, and follow-up on evaluation results. Studies of educational management in pesantren suggest that religious culture and organizational practice are mutually influential (Halimah et al., 2024). Quality improvement is therefore more likely to be sustained when it becomes part of routine teaching, administration, and reflection rather than an activity conducted only for accreditation.

3) Selective Digitalization of Management and Learning

Digitalization should be based on identified problems. Priority areas may include student records, finance, attendance, teacher administration, communication with parents, digital libraries, and learning-resource management. Evidence from pesantren and madrasah contexts indicates that digital systems can improve coordination and information access, but their contribution depends on leadership, system usability, and staff capability (Mahsusi et al., 2024; Shofwani et al., 2025; Zafi et al., 2021). A pesantren does not need to digitize every activity simultaneously. Administrative processes with repetitive data requirements may be addressed first, followed by learning applications that have clear pedagogical functions. Sensitive student and institutional information also requires access controls, data-protection procedures, and clearly assigned responsibility.

4) Human Resource and Digital Competence Development

Technology adoption depends on the competence and confidence of teachers and administrators. Digital competence includes more than the ability to operate devices; it

encompasses pedagogical selection, content evaluation, digital communication, learner support, ethics, and information security (Falloon, 2020). Evidence from the broader Indonesian Islamic education context also indicates that perceived usefulness, ease of use, and compatibility with religious values influence students' willingness to adopt emerging educational technologies (Faizin et al., 2025). Although this evidence comes from Muslim university students rather than pesantren, it reinforces the need to assess user acceptance before introducing new digital systems. Research on pesantren readiness identifies differences in digital experience among students and educational personnel, making one-time training insufficient (Jamil et al., 2025; Makhluaf et al., 2023). Professional development should begin with a needs assessment and proceed through staged training, mentoring, classroom experimentation, and peer support. Recruitment of digitally competent personnel may accelerate change, but internal capacity development remains necessary to prevent dependence on a small number of individuals.

5) Curriculum Integration

Curriculum transformation should connect religious learning, contemporary knowledge, and responsible digital participation. It should not be reduced to adding a computer subject or converting printed materials into electronic files. Research shows that pesantren curricula can adopt blended approaches while retaining established forms of guided textual learning (Iskandar et al., 2024; Suresman et al., 2025; Zuraida & Setiawan, 2025). Curriculum integration may include digital information literacy, source evaluation, online ethics, collaborative problem solving, and the responsible use of digital tools across subjects. Digitized *kitab kuning* can increase access, but learning should retain teacher guidance regarding language, interpretation, textual authority, and application. Assessment should likewise cover knowledge, skills, ethical conduct, and participation rather than relying solely on easily quantified online activity.

6) Contextual Internal Quality Assurance

Internal quality assurance provides a recurring process for setting objectives, monitoring educational delivery, evaluating outcomes, and implementing corrective action. In pesantren, indicators should represent both nationally recognizable educational requirements and institution-specific religious purposes. Studies of pesantren quality assurance indicate that formal quality standards require contextual adaptation to institutional identity, educational objectives, and available resources (Aimah & Nasih, 2023; Lathifah et al., 2025). Digital dashboards and learning analytics may assist monitoring, but they should not be treated as neutral substitutes for educational judgment. Quantitative indicators such as attendance, completion, and assessment results should be interpreted together with qualitative evidence concerning student development, teaching practice, and religious formation. The proposed framework therefore adapts continuous-improvement principles without assuming that all dimensions of pesantren quality can be represented numerically.

7) Strategic Collaboration

Collaboration can provide expertise and resources that are not available internally. Potential partners include universities, government agencies, pesantren associations,

libraries, alumni, civil-society organizations, and technology providers. The study by Nafisah et al. (2024), for example, shows how libraries can support technology-mediated religious literacy, while the Buntet case illustrates the importance of academic and institutional networks in management development (Shofwani et al., 2025). Collaboration should nevertheless be governed by clear educational objectives. Technology companies or external organizations should not determine curriculum priorities merely because they provide infrastructure. Agreements should specify responsibilities, data ownership, sustainability, and consistency with the institution's educational values.

8) Integration of Spiritual and Ethical Values

Spiritual and ethical values function as a criterion across the other seven dimensions rather than as an isolated program. Technology may be understood as *wasilah* (a means) rather than *ghayah* (an ultimate end). This distinction requires management to assess whether a digital practice supports learning, religious formation, responsible conduct, and institutional accountability. Value integration should be visible in policies for digital conduct, content evaluation, privacy, respectful communication, and the balance between screen-based activities and communal religious practice. It should also preserve space for *tahfiz* (Qur'anic memorization), *wirid* (regular devotional recitation), and *khidmah* (service undertaken as part of religious formation) when these practices form part of the institution's educational identity. Studies of religious authority and learning culture suggest that digital adaptation is more sustainable when it is negotiated through, rather than positioned against, established pesantren values (Halimah et al., 2024; Harnadi et al., 2021).

4. Position of the Proposed Framework

The framework does not replace TQM, ISO-based systems, or other quality-management approaches. It contextualizes selected principles for pesantren education.

Table 2.

Comparison Between General Quality-Management Principles and Their Contextual Adaptation in Pesantren

Aspect	General quality-management emphasis	Contextual adaptation for pesantren
Institutional purpose	Meeting organizational objectives and stakeholder requirements	Combining educational performance with religious, ethical, and communal purposes
Leadership	Management responsibility and strategic direction	Coordination between the kiai's religious authority and distributed managerial expertise
Process improvement	Standardization, evaluation, and continuous improvement	Improvement that preserves justified pedagogical and religious practices
Evidence	Performance indicators, documentation, and stakeholder feedback	Combining administrative indicators with qualitative evidence of learning and character formation

Technology	A tool for efficiency, communication, and process control	A selectively adopted wasilah governed by pedagogical and ethical criteria
Status of the framework	Established principles adapted to organizational settings	A conceptual synthesis requiring empirical validation across different pesantren

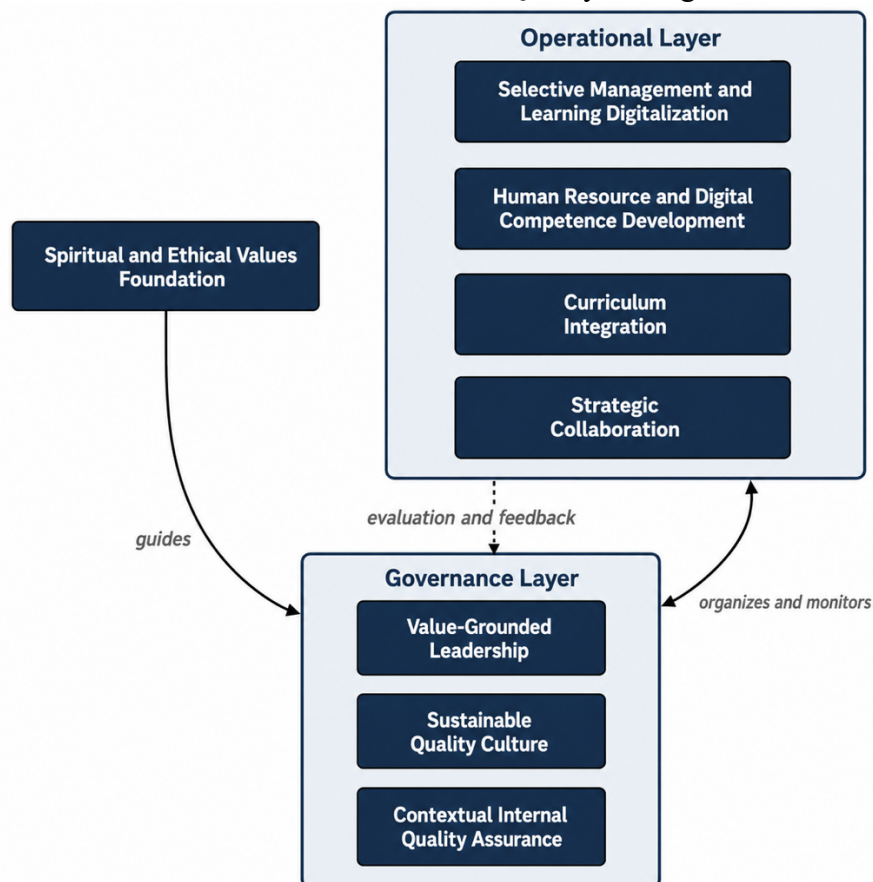
Source: *Authors' synthesis and contextual adaptation based on Arcaro (2024), Sallis (2014), and the pesantren literature reviewed in this study.*

The distinction is therefore contextual rather than ideological. General quality-management frameworks are not inherently secular or incompatible with Islamic education. Their limitations arise when they are applied without examining pesantren purposes, authority structures, learning traditions, and spiritual responsibilities. The proposed framework adds these contextual requirements while retaining useful principles of accountability, stakeholder participation, and continuous improvement (Arcaro, 2024; Sallis, 2014).

Based on the literature synthesis, the proposed framework organizes pesantren education quality management into one normative foundation, three governance dimensions, and four operational dimensions, as presented in Figure 1.

Figure 1.

Integrative Framework for Pesantren Education Quality Management in the Digital Era



Source: *Authors' conceptual synthesis based on the integrative literature review conducted in this study.*

The framework represents an analytical relationship among the eight dimensions; it does not claim that causal effects among them have been empirically established. Figure 1 positions spiritual and ethical values as the foundation of the framework. The governance layer consists of value-grounded leadership, sustainable quality culture, and contextual internal quality assurance. These dimensions guide and monitor four operational areas: selective management and learning digitalization, human resource and digital competence development, curriculum integration, and strategic collaboration. Feedback from the operational layer enables the governance dimensions to be reviewed and adjusted. The framework represents an analytical relationship among the eight dimensions; it does not claim that causal effects among them have been empirically established.

D. CONCLUSION

This integrative review shows that the digital transformation of pesantren education should be understood as an institutional and educational process rather than merely as the adoption of technology. The literature identifies five drivers of transformation and six recurring challenges, which are synthesized into eight interconnected dimensions: value-grounded leadership, sustainable quality culture, selective digitalization, human resource and digital competence development, curriculum integration, contextual internal quality assurance, strategic collaboration, and the integration of spiritual and ethical values. These dimensions are organized into one normative foundation, three governance dimensions, and four operational dimensions. The framework positions technology as *wasilah*, or a means to support educational purposes, while preserving the principle of *al-muhafazhah 'ala al-qadim al-salih wa al-akhdh bi al-jadid al-aslah*. Because the framework is derived from a structured and purposive integrative literature review, it remains conceptual and does not establish causal relationships or the effectiveness of individual strategies across all pesantren contexts. Future research should empirically test the framework across different types of pesantren and develop context-sensitive indicators for educational quality, digital competence, ethical conduct, and religious formation.

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