

Extending Juran's Quality Trilogy in Islamic Boarding Schools: Empirical Insights for Realizing SDG 4 in Indonesia

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ABSTRACT

Objective: To examine how pesantren-based schools institutionalize quality management by implementing Juran's Quality Trilogy through an embedded organizational quality culture. It addresses the limited understanding of how quality planning, quality control, and quality improvement are integrated within faith-based educational institutions. **Method:** Employing a qualitative multisite case study involving two Indonesian secondary schools integrating the national education system with the pesantren tradition. Data were collected through in-depth interviews with school leaders, teachers, administrative staff, students, parents, and education authorities, supported by observations and document analysis. The data were analyzed using within-case and cross-case thematic analysis, while triangulation and member checking ensured trustworthiness. **Results:** The findings indicate that quality planning was collaboratively developed through stakeholder participation, curriculum integration, and shared educational values. Quality control was sustained through continuous academic supervision, religious discipline, routine monitoring, and collective responsibility. Quality improvement was achieved through institutional learning, collaborative professional development, and reflective evaluation embedded in daily practices. These processes were integrated through Pesantren Quality Culture, which functioned as the organizational mechanism connecting the three dimensions of Juran's Quality Trilogy into a continuous quality management cycle. **Novelty:** Proposing a contextual quality management model for faith-based schools by extending Juran's Quality Trilogy through Pesantren Quality Culture. The model highlights the integration of shared religious values, stakeholder collaboration, continuous organizational learning, reflective evaluation, and collective commitment as key drivers of sustainable educational quality for SDG 4.

INTRODUCTION

Educational quality has become a central concern in contemporary education systems as schools are increasingly expected to demonstrate accountability, continuous improvement, and responsiveness to rapidly changing societal needs. Beyond improving students' academic achievement, educational institutions are expected to develop adaptive organizational capacities that enable sustainable quality enhancement in teaching, learning, leadership, and institutional governance. Consequently, quality management has evolved from a compliance-oriented administrative function into a strategic organizational process that integrates planning, monitoring, evaluation, and continuous improvement. Recent international scholarship further suggests that sustainable educational quality cannot be achieved solely through formal quality assurance mechanisms or managerial regulations, but requires the development of an organizational quality culture that encourages collective responsibility, shared values, collaborative learning, and continuous institutional improvement. This shift reflects a broader recognition that educational quality is fundamentally shaped by the interaction between managerial systems and organizational culture rather than by technical quality assurance processes alone.

Recent studies increasingly recognize quality culture as a critical determinant of sustainable educational improvement. Unlike traditional quality assurance approaches that emphasize compliance with standards and external accountability, quality culture integrates structural and managerial mechanisms with cultural and psychological dimensions that shape organizational behavior. Legemaate et al. (2025) argue that strengthening quality culture requires balancing technical systems, such as information management and organizational responsibilities, with social systems characterized by collective ownership, professional collaboration, and participatory decision-making. Similarly, research on organizational learning and collaborative professional development suggests that sustainable quality improvement depends on continuous knowledge sharing, reflective practice, and collective capacity building rather than isolated managerial interventions (Droissart & Tuytens, 2024; Gümüş et al., 2026; Schechter et al., 2022). Although these studies have substantially advanced understanding of quality culture, they predominantly examine higher education or general educational organizations and provide limited explanation of how quality culture operates within faith-based school settings where organizational practices are deeply influenced by shared religious values and institutional traditions.

The need to examine quality management within faith-based educational institutions has become increasingly important as international scholarship recognizes their substantial contribution to educational provision while simultaneously acknowledging their underrepresentation in mainstream educational management research. A recent global review of faith-based education demonstrates that existing studies have primarily concentrated on historical development, educational access, governance, and socio-religious issues, whereas considerably less attention has been devoted to understanding how faith-based institutions sustain organizational quality through internal management processes (D'Agostino & Asadullah, 2025). Similarly, research on quality management in faith-based organizations has shown that organizational performance depends not only on formal quality assurance systems but also on the effective integration of governance structures, monitoring mechanisms, human resource development, and institutional commitment to quality (Agyei et al., 2024). Nevertheless, current evidence remains largely derived from higher education or healthcare settings, leaving limited empirical understanding of how faith-based schools institutionalize quality management as an integrated organizational process. This gap is particularly evident in Islamic boarding school-based educational institutions (*pesantren*), where educational quality is simultaneously shaped by formal school management, religious traditions, and community-based organizational values.

Although previous studies have considerably advanced understanding of quality culture (Legemaate et al., 2025), school improvement planning (Hakouz & Zumpe, 2026), organizational learning (Gümüş et al., 2026; Schechter et al., 2022), and faith-based educational organizations (Agyei et al., 2024; D'Agostino & Asadullah, 2025), these streams of research have largely evolved independently. Consequently, limited attention has been given to explaining how quality planning, quality control, and quality improvement operate as an integrated organizational system within faith-based schools. Existing studies generally examine quality assurance mechanisms, leadership practices, organizational learning, or institutional culture as separate phenomena, providing insufficient understanding of the organizational processes that connect these dimensions into a coherent and sustainable quality management system. As a result, the contextual mechanisms through which faith-based schools continuously institutionalize

educational quality remain theoretically underdeveloped. This fragmentation indicates the need for a more integrative framework capable of explaining how organizational culture enables continuous quality management beyond compliance-oriented quality assurance practices.

Juran's Quality Trilogy remains one of the most influential frameworks for understanding continuous quality management through the interrelated processes of quality planning, quality control, and quality improvement (Juran & Godfrey, 1998). Despite its enduring influence across manufacturing, healthcare, and educational quality management, contemporary educational research has primarily applied the Trilogy as a managerial framework emphasizing systematic planning, monitoring, and continuous improvement. Comparatively less attention has been devoted to examining the organizational and cultural conditions that enable these three managerial processes to function effectively in educational settings. Recent studies increasingly suggest that sustainable quality management depends not only on formal management systems but also on organizational culture, collaborative learning, stakeholder participation, and institutional commitment (Hakouz & Zumpe, 2026; Legemaate et al., 2025). These developments indicate that Juran's framework can be further enriched by explaining the contextual mechanisms through which quality planning, quality control, and quality improvement become institutionalized as continuous organizational practices rather than isolated managerial activities.

Pesantren based schools provide a particularly valuable context for advancing educational quality management theory because they integrate formal schooling with deeply embedded religious, cultural, and communal values. Unlike conventional schools, quality management in pesantren-based institutions is not solely governed by administrative regulations or external accountability requirements but is continuously reinforced through shared religious commitments, collective responsibility, moral leadership, and long-standing organizational traditions. Consequently, managerial practices such as quality planning, quality control, and quality improvement are closely intertwined with organizational culture and everyday institutional routines. This distinctive organizational context offers an important opportunity to examine how quality management becomes institutionalized through cultural processes rather than being implemented merely as a set of managerial procedures. Investigating this context therefore contributes not only to understanding educational management within Islamic boarding schools but also to extending broader international discussions on how faith-based educational organizations sustain continuous quality improvement.

Against this background, the present study investigates how quality management is implemented in pesantren-based secondary schools through the interconnected processes of quality planning, quality control, and quality improvement as conceptualized in Juran's Quality Trilogy. Using a qualitative multisite case study, this research seeks to explain how organizational quality is continuously institutionalized within faith-based schools through the interaction between managerial practices and organizational culture. This study contributes to the educational quality management literature in three ways. First, it provides empirical evidence from faith-based secondary schools, an educational context that remains underrepresented in international quality management research. Second, it extends Juran's Quality Trilogy by demonstrating that the effective implementation of quality planning, quality control, and quality improvement depends on an organizational quality culture characterized by shared religious values, collective ownership, collaborative organizational learning,

and continuous stakeholder engagement. Third, the study proposes Pesantren Quality Culture as a contextual organizational mechanism that integrates managerial quality processes into a sustainable system of continuous educational improvement, thereby enriching contemporary discussions on quality culture, organizational learning, and educational management within faith-based educational institutions.

The remainder of this paper is organized as follows. The next section critically reviews the literature on educational quality management, organizational culture, Juran's Quality Trilogy, and faith-based educational organizations to establish the theoretical foundation of the study. This is followed by a description of the qualitative multisite case study methodology, including the research context, participants, data collection procedures, and thematic data analysis. The subsequent section presents the findings organized into three interconnected themes: quality planning, quality control, and quality improvement, followed by a cross-theme synthesis illustrating the role of Pesantren Quality Culture as the contextual enabler of Juran's Quality Trilogy. The paper concludes with a discussion of the theoretical and practical implications, limitations of the study, and recommendations for future research.

Building upon this gap, the present study extends the contextual application of Juran's Quality Trilogy by examining how the cultural characteristics of Indonesian Islamic boarding schools support the implementation of Quality Planning, Quality Control, and Quality Improvement. Rather than proposing a new quality management theory or modifying Juran's original framework, this study develops a contextually grounded conceptual understanding of how Pesantren Quality Culture strengthens the implementation of these three interrelated quality processes within faith-based educational institutions. By integrating empirical evidence from a multi-site qualitative case study with Juran's established quality management framework, the study contributes to educational quality management literature by demonstrating that the effectiveness of quality management is shaped not only by managerial processes but also by culturally embedded organizational values that influence how these processes are interpreted and enacted in practice.

Against this background, this study aims to examine how quality management is implemented in Indonesian Islamic boarding schools by using Juran's Quality Trilogy as the primary analytical framework and by exploring how the cultural characteristics of pesantren shape the contextual application of Quality Planning, Quality Control, and Quality Improvement. Drawing on a multi-site qualitative case study of two Islamic boarding schools in Indonesia, the study seeks to provide a contextually grounded understanding of educational quality management while extending the contextual application of Juran's Quality Trilogy through the conceptualization of Pesantren Quality Culture. In doing so, the study contributes to the growing literature on educational quality management, faith-based education, and quality culture by offering a conceptual framework that may inform future research and support the implementation of quality management in Islamic educational institutions and other culturally distinctive educational settings for SDG 4.

RESEARCH METHOD

Research design

This study employed a qualitative multisite case study design to explore how quality management is implemented within faith based secondary schools. A qualitative approach was selected because the study sought to understand organizational

processes, shared meanings, institutional practices, and contextual interactions that cannot be adequately explained through quantitative measurement alone. The multisite case study design enabled an in depth examination of similarities and contextual differences across two pesantren based schools while facilitating analytical generalization beyond a single institutional setting. By comparing multiple organizational contexts, the study generated a richer understanding of how quality planning, quality control, and quality improvement were continuously enacted through organizational culture and institutional learning.

The research was conducted at Darul Ulum 2 BPPT Excellent Senior High School Jombang and MAN 3 Jombang, two well established Indonesian secondary schools integrating the national education system with pesantren traditions. These schools were purposefully selected because both have demonstrated sustained commitments to educational quality while operating within distinct organizational structures characteristic of faith-based educational institutions. Their long standing implementation of quality management initiatives, combined with strong organizational cultures rooted in Islamic boarding school traditions, provided an appropriate empirical setting for examining the interaction between managerial quality processes and faith based organizational values. The inclusion of two institutional contexts further strengthened the study by enabling cross case comparison and enhancing the transferability of the findings.

Consistent with qualitative case study methodology, the study adopted purposive sampling to identify participants possessing direct knowledge and practical experience related to educational quality management. Participants included school principals, vice principals, teachers, administrative staff, students, parents, and representatives from educational authorities, thereby ensuring the inclusion of multiple organizational perspectives. Rather than seeking statistical representativeness, participant selection was guided by the principle of information richness, allowing the study to capture diverse experiences regarding quality planning, quality control, and quality improvement within the two participating schools.

Research context and participants

The study was conducted in two Indonesian faith-based secondary schools: Darul Ulum 2 BPPT Excellent Senior High School Jombang and MAN 3 Jombang. These schools were purposively selected because they represent well-established educational institutions integrating the national curriculum with the educational traditions of Islamic boarding schools (pesantren). Both institutions have demonstrated sustained commitments to educational quality through structured quality management systems, continuous professional development, academic supervision, and strong organizational cultures emphasizing religious values and collective responsibility. Despite these shared characteristics, the schools differ in their governance structures and administrative arrangements, thereby providing contrasting yet complementary organizational contexts for examining the implementation of educational quality management. The selection of two institutional settings enabled analytical comparison and strengthened the explanatory power of the multisite case study.

Participants were selected through purposive sampling, with emphasis placed on individuals who possessed direct experience and decision-making responsibilities related to educational quality management. The participants represented multiple organizational levels to ensure a comprehensive understanding of quality planning,

quality control, and quality improvement from different institutional perspectives. They included school principals and vice principals, teachers, administrative staff, students, parents, and representatives of regional education authorities. The inclusion of these diverse participant groups enabled triangulation of perspectives while capturing the interactions among leadership, professional practice, stakeholder engagement, and organizational culture that collectively shape educational quality within faith-based schools.

In total, the study involved 30 key informants across the two research sites. The first site, Darul Ulum 2 BPPT Excellent Senior High School Jombang, involved sixteen participants comprising the principal, vice principals responsible for curriculum, student affairs, infrastructure, public relations, boarding affairs, and institutional development, together with teachers, administrative staff, students, parents, and a representative of the Regional Office of the East Java Provincial Education Department. The second site, MAN 3 Jombang, involved fourteen participants consisting of vice principals, teachers, administrative staff, Islamic boarding school program coordinators, students, and parents. Participants were recruited until sufficient depth and variation of information had been achieved to address the research objectives. Rather than pursuing statistical representativeness, participant selection followed the principle of information richness, ensuring that each informant contributed substantial insights into the organizational processes underpinning educational quality management.

The selection of these participants reflects the study's theoretical orientation, which conceptualizes educational quality as a collective organizational process rather than a leadership driven activity. Accordingly, quality planning, quality control, and quality improvement were examined through the interactions of multiple organizational actors rather than from a single managerial perspective. This approach enabled the study to capture how quality management practices were interpreted, implemented, and sustained across different organizational levels while also revealing the role of Pesantren Quality Culture in coordinating shared organizational responsibility for continuous educational improvement.

Data collection

Data were collected through multiple qualitative methods, including in depth semi-structured interviews, non participant observations, and document analysis. The use of multiple data sources was intended to achieve methodological triangulation, enabling the study to develop a comprehensive understanding of educational quality management while enhancing the credibility of the findings. Rather than relying on a single source of evidence, the combination of interviews, observations, and documentary evidence allowed organizational practices to be examined from complementary perspectives and reduced the risk of interpretation based on isolated accounts.

Semi structured interviews constituted the primary data collection method because they enabled participants to explain organizational experiences, managerial practices, and institutional interpretations in their own words while allowing the researcher to explore emerging issues in greater depth. Interview questions were developed based on Juran's Quality Trilogy, focusing on quality planning, quality control, and quality improvement, while remaining sufficiently flexible to capture participants' experiences regarding organizational culture, collaborative learning, stakeholder engagement, and faith-based educational practices. Interviews were conducted with participants

representing different organizational roles, thereby generating multiple perspectives on the implementation of educational quality management within the two participating schools.

Non participant observations were undertaken to examine how quality management practices were enacted within the natural organizational setting. Observation focused on educational planning activities, classroom supervision, staff meetings, professional development programs, student disciplinary practices, and daily organizational routines reflecting the implementation of quality management. Particular attention was given to interactions among school leaders, teachers, students, and boarding school administrators in order to understand how organizational culture influenced managerial practices. Observation data provided contextual evidence that complemented interview findings by capturing organizational behaviours that might not be fully articulated during interviews.

Document analysis served as an additional source of evidence for verifying and contextualizing information obtained through interviews and observations. Documents examined included institutional strategic plans, annual work plans, quality assurance manuals, standard operating procedures (SOPs), curriculum documents, school regulations, internal evaluation reports, academic supervision records, organizational guidelines, and official documents related to the integration of school and pesantren programs. Documentary evidence was analyzed not as independent data but as contextual material used to corroborate participants' accounts, identify institutional consistency, and strengthen the overall trustworthiness of the study.

Throughout the data collection process, the three methods were implemented in an iterative and complementary manner rather than sequentially. Preliminary interview findings informed subsequent observations, while observational evidence guided further interview probing and documentary examination. This iterative process enabled continuous verification of emerging themes and facilitated deeper understanding of organizational practices across the two research sites. By integrating multiple sources of evidence throughout the fieldwork, the study developed a rich and contextualized account of how quality planning, quality control, and quality improvement were institutionalized through Pesantren Quality Culture within faith-based secondary schools.

Data analysis

Data analysis was conducted concurrently with data collection using an iterative and inductive process characteristic of qualitative case study research. This approach enabled emerging interpretations to inform subsequent interviews, observations, and document analysis, thereby facilitating continuous refinement of developing themes throughout the fieldwork. Rather than treating data analysis as a final stage of the research, the study adopted an ongoing analytical process in which data collection, coding, interpretation, and verification occurred simultaneously. This iterative strategy strengthened the depth of analysis while allowing emerging findings to be continuously validated across multiple sources of evidence.

The analysis followed the interactive model proposed by Miles et al. (2014), consisting of data condensation, data display, and conclusion drawing and verification. During the data condensation stage, interview transcripts, observation notes, and documentary evidence were systematically organized, coded, and reduced according to the study's analytical focus. Initial coding was guided by the three dimensions of

Juran's Quality Trilogy quality planning, quality control, and quality improvement while remaining open to inductively emerging concepts related to organizational quality culture, organizational learning, stakeholder participation, and faith-based institutional values. This combination of deductive and inductive coding enabled the analysis to remain theoretically informed while preserving sensitivity to contextual insights emerging from the field.

Given the multisite research design, data analysis was undertaken in two successive stages. The first stage involved within case analysis, in which each school was analyzed independently to identify its organizational characteristics, quality management practices, and contextual features. Interview, observation, and documentary evidence from each site were triangulated to construct a comprehensive understanding of quality planning, quality control, and quality improvement within the respective institutional context. This stage preserved the uniqueness of each case before any cross-case comparison was undertaken.

The second stage involved cross-case analysis, through which patterns, similarities, and contextual differences between the two schools were systematically compared. Cross case analysis focused on identifying recurring organizational processes as well as context-specific practices associated with Pesantren Quality Culture. Rather than seeking statistical generalization, the comparison aimed to generate analytical insights regarding the organizational mechanisms through which quality planning, quality control, and quality improvement were institutionalized across faith-based secondary schools. The resulting thematic synthesis formed the basis for developing the study's conceptual interpretation and theoretical contribution.

Throughout the analytical process, emerging interpretations were continuously compared across interviews, observations, and documentary evidence to ensure consistency and analytical coherence. Themes were refined through repeated examination of the data until a stable interpretation of organizational quality management had been achieved. The final themes were organized around the three dimensions of Juran's Quality Trilogy, while the interpretation of these themes was informed by the concepts of organizational quality culture, organizational learning, and faith based educational organizations. This analytical strategy enabled the study to move beyond descriptive reporting towards an explanatory understanding of how Islamic Boarding School Quality Culture functions as the contextual organizational mechanism supporting sustainable educational quality.

Table 1. Data analysis procedures

Stage	Analytical Activities	Expected Output
Data Condensation	Transcribing interviews, organizing observation notes and documents, coding, categorizing data	Initial codes and categories
Data Display	Developing thematic matrices, within-case displays, and cross-case comparison tables	Thematic patterns
Conclusion Drawing	Interpreting relationships among themes and verifying findings across multiple data sources	Final themes and conceptual interpretation
Within-Case Analysis	Independent analysis of each research site	Site-specific findings
Cross-Case Analysis	Comparison of themes across both schools	Cross-case synthesis and theoretical contribution

Trust worthiness and ethical considerations

The trustworthiness of this study was established by adopting the criteria of credibility, transferability, dependability, and confirmability proposed by Lincoln & Guba (1985). These criteria were implemented throughout the research process to ensure that the findings accurately represented participants' experiences while maintaining methodological rigor. Rather than relying on a single validation strategy, the study integrated multiple procedures to strengthen the credibility of data collection, analysis, and interpretation across the two research sites.

Credibility was enhanced through prolonged engagement in the field, methodological triangulation, and member checking. Data were collected from multiple participant groups, including school leaders, teachers, administrative staff, students, parents, and educational authorities, enabling the comparison of organizational perspectives across different institutional levels. Interview findings were continuously triangulated with observation records and documentary evidence, while preliminary interpretations were discussed with selected participants to verify the accuracy and consistency of emerging themes. These procedures ensured that the analytical interpretations remained grounded in participants lived organizational experiences.

Transferability was supported through the provision of rich contextual descriptions of the participating schools, their organizational characteristics, participant roles, and quality management practices. Detailed descriptions of the research context enable readers to assess the applicability of the findings to similar faith-based educational settings. Dependability was strengthened by maintaining a transparent research process, including systematic documentation of interview protocols, observation procedures, coding decisions, analytical memos, and cross case comparison procedures. This audit trail provides evidence of methodological consistency throughout the study.

Confirmability was established through continuous reflexive analysis and the systematic comparison of evidence obtained from interviews, observations, and institutional documents. Throughout the analytical process, interpretations were repeatedly examined against the original data to minimize researcher bias and ensure that conclusions were supported by multiple sources of evidence. The use of within-case and cross-case analysis further strengthened confirmability by allowing organizational patterns to emerge from converging evidence rather than individual participant accounts. Consequently, the study emphasizes analytical transparency and evidence-based interpretation as fundamental principles of qualitative inquiry.

Ethical principles were carefully observed throughout the research process. Prior to data collection, permission to conduct the study was obtained from the participating schools and relevant educational authorities. All participants received clear information regarding the objectives of the study, the voluntary nature of their participation, and their right to withdraw at any stage without consequence. Informed consent was obtained before interviews and observations were conducted. To protect participants' privacy and institutional confidentiality, personal identities were anonymized through the use of participant codes, and all research data were securely stored and used exclusively for academic purposes. These ethical procedures ensured respect for participants while maintaining the integrity and credibility of the research process.

RESULTS AND DISCUSSION

Quality planning through the integration of stakeholder expectations and islamic boarding school education values

The findings demonstrate that quality planning in both Islamic boarding school-based educational institutions was implemented as a strategic and participatory process that integrated stakeholder expectations with the educational values of the pesantren. Rather than functioning merely as an administrative requirement, quality planning served as the foundation for aligning institutional goals, curriculum development, educational programs, and character formation. Across both research sites, planning activities consistently involved identifying stakeholder needs, translating these needs into institutional priorities, and embedding religious values into educational decision-making. As a result, quality planning was directed not only toward improving academic performance but also toward strengthening students' religious character, discipline, and moral development. These findings indicate that the planning process reflected the three essential characteristics of Juran's Quality Planning: identifying customers, understanding their needs, and designing educational services capable of meeting those needs.

a. Evidence from site 1: Darul Ulum 2 BPPT Excellent Senior High School Jombang

At Darul Ulum 2 BPPT Excellent Senior High School Jombang, quality planning was characterized by the systematic integration of stakeholder expectations into institutional planning. The school identified students, parents, the pesantren foundation, higher education institutions, and the wider community as major stakeholders whose expectations guided educational planning. Stakeholder needs were gathered through routine meetings with parents, academic evaluations, communication between homeroom teachers and families, and continuous feedback mechanisms. Student mapping based on interests, talents, and diagnostic assessments further supported the formulation of educational programs that responded to individual learner characteristics.

Beyond stakeholder identification, the planning process emphasized the integration of multiple educational systems. National curriculum requirements were combined with pesantren learning programs and international educational standards through Cambridge Assessment International Education (CAIE). This integration was accompanied by bilingual instruction, international language certification programs, and competency development designed to prepare students for global academic competition while preserving Islamic educational identity. Consequently, quality planning was directed simultaneously toward academic excellence, international competitiveness, and religious character formation.

The findings also indicate that pesantren educational values functioned as an integral component of institutional planning rather than as complementary activities. Religious routines, character education, discipline, and moral development were incorporated into strategic planning documents and educational programs, demonstrating that institutional quality objectives were formulated through the integration of academic aspirations and Islamic Boarding School values.

b. Evidence from Site 2: MAN 3 Jombang

At MAN 3 Jombang, quality planning similarly originated from the identification of stakeholder expectations but displayed a different organizational emphasis. Planning activities were primarily oriented toward strengthening religious culture, academic supervision, institutional self evaluation (Madrasah Self Evaluation/MSE), and

continuous program evaluation. Stakeholder expectations were translated into curriculum development, student services, extracurricular activities, and institutional improvement programs that sought to balance academic achievement with character development.

Unlike Darul Ulum 2 BPPT Excellent Senior High School, which emphasized internationalization, MAN 3 Jombang focused more strongly on reinforcing Qur'anic values, academic culture, and continuous institutional evaluation. Educational planning therefore became a mechanism for integrating stakeholder expectations with Islamic values through routine evaluation, academic monitoring, and organizational learning. These practices ensured that quality objectives remained responsive to both educational policies and the evolving needs of students and the surrounding community.

c. Cross site synthesis

Comparison across the two research sites reveals substantial similarities in the overall philosophy of quality planning. Both institutions regarded quality planning as a systematic process beginning with stakeholder identification and continuing through curriculum development, institutional programming, and the integration of pesantren educational values. In both schools, educational quality was understood as encompassing academic excellence together with religious and moral development, reflecting a broader conception of educational quality than academic achievement alone.

Despite these similarities, each institution operationalized quality planning differently according to its organizational priorities. Darul Ulum 2 BPPT Excellent Senior High School emphasized internationalization through Cambridge programs, bilingual learning, and global competency development while maintaining pesantren traditions. In contrast, MAN 3 Jombang placed greater emphasis on institutional self-evaluation, academic supervision, Qur'anic character formation, and strengthening religious organizational culture. These differences illustrate that although the core principles of quality planning were shared, their implementation was adapted to the strategic orientation and organizational characteristics of each institution.

d. Summary

Overall, the findings suggest that quality planning within Islamic boarding school-based educational institutions extends beyond conventional strategic planning by integrating stakeholder expectations with pesantren educational values. Across both research sites, planning activities systematically identified stakeholder needs, translated these needs into institutional priorities, and embedded religious values into curriculum development, organizational programs, and character education. These findings demonstrate that the implementation of Quality Planning in Juran's Quality Trilogy is shaped by the cultural context of the organization, providing the first empirical foundation for understanding how quality planning is contextually enacted within Islamic Boarding based schools.

Table 1. Synthesis of theme 1: Quality planning through stakeholder integration and pesantren educational values

Analytical Dimension	SMA Darul Ulum 2 Unggulan BPPT	MAN 3 Jombang	Cross-site Interpretation
Stakeholder identification	Stakeholder mapping through parents, students, foundation,	Stakeholder identification through EDM, parents, students,	Both institutions systematically identify stakeholder expectations before planning

Analytical Dimension	SMA Darul Ulum 2 Unggulan BPPT	MAN 3 Jombang	Cross-site Interpretation
Educational planning	universities, and community Integration of National Curriculum, Pesantren curriculum, Cambridge programmes and Academic excellence, international competitiveness, Islamic character	and community Integration of National Curriculum, Madrasah curriculum, and pesantren values Academic achievement, Qur'anic character, institutional improvement	educational programmes. Educational planning combines national educational requirements with institutional characteristics.
Quality objectives			Quality objectives extend beyond academic performance to include religious and character development.
Role of pesantren values	Embedded within curriculum, school programmes, and strategic planning	Embedded within curriculum, school culture, and institutional evaluation	Religious values function as an organizational foundation for quality planning rather than supplementary activities.
Interpretation through Juran	Stakeholder needs translated into educational services	Stakeholder needs translated into institutional programmes	Both schools operationalize Juran's Quality Planning through stakeholder-oriented educational planning supported by pesantren values.

Table 1 demonstrates that both schools implemented quality planning by systematically identifying stakeholder expectations and integrating them into educational planning. Although each institution adopted different curriculum configurations and strategic priorities, both embedded pesantren values within curriculum design, organizational programmes, and quality objectives. Cross-site analysis indicates that stakeholder participation and shared religious values served as complementary mechanisms for translating stakeholder needs into institutional quality initiatives. These findings suggest that Quality Planning in Juran's Quality Trilogy is operationalized not only through strategic planning processes but also through the institutionalization of pesantren values that guide educational decision-making and long term quality development.

Quality control through academic supervision, religious discipline, and collective organizational responsibility

The cross site analysis revealed that quality control in both Islamic boarding school based educational institutions was implemented through a comprehensive system of academic supervision, religious discipline, continuous programme evaluation, and collective organizational responsibility. Rather than functioning solely as a mechanism for detecting deviations from predetermined standards, quality control was embedded within the daily organizational practices of both institutions, integrating academic monitoring with the moral and religious dimensions of educational management.

Consequently, quality control extended beyond administrative compliance to encompass continuous guidance, behavioural development, and institutional accountability.

Academic supervision emerged as the primary mechanism through which instructional quality was maintained. Both institutions implemented systematic supervision of classroom instruction, monitored curriculum implementation, evaluated students' academic achievement, and periodically reviewed educational programmes. These supervisory activities were not conducted as isolated administrative procedures but formed part of an ongoing institutional effort to ensure that teaching and learning processes remained aligned with organizational quality objectives. Programme evaluation and academic monitoring therefore functioned as complementary mechanisms for identifying strengths, detecting implementation gaps, and providing evidence for subsequent improvement initiatives.

The findings further demonstrate that quality control incorporated a strong dimension of religious discipline and character formation. Monitoring activities extended beyond instructional performance to include students' behavioural discipline, religious practices, and the implementation of pesantren values throughout school life. In both institutions, educational quality was interpreted not only through academic performance indicators but also through the consistent development of students' moral conduct, religious commitment, and disciplined behaviour. This integration of academic supervision with religious guidance illustrates that quality control operated simultaneously as an educational and character-building process rather than merely as a technical monitoring function.

Although both schools implemented similar quality control principles, the organizational approaches reflected different institutional characteristics. SMA Darul Ulum 2 Unggulan BPPT Jombang adopted a more formalized quality control system supported by ISO 9001:2015, internal quality audits, the Internal Quality Assurance Team (TPMPS), and performance monitoring using measurable quality indicators. This approach emphasized systematic documentation, periodic monitoring, and evidence-based evaluation as integral components of institutional quality assurance. In contrast, MAN 3 Jombang emphasized academic supervision, Evaluasi Diri Madrasah (EDM), continuous classroom monitoring, and personalized student guidance grounded in religious values. Rather than relying primarily on formalized quality assurance instruments, quality control in MAN 3 Jombang was strengthened through educational mentoring, character development, and sustained interaction between teachers and students.

Despite these operational differences, both institutions demonstrated a shared commitment to collective organizational responsibility in maintaining educational quality. Quality control was not viewed as the exclusive responsibility of school leaders or designated quality assurance personnel. Instead, responsibility was distributed among teachers, administrative staff, boarding school administrators, students, and other educational stakeholders through continuous communication, programme monitoring, evaluation meetings, and follow up actions. This collaborative pattern indicates that quality assurance was institutionalized as a shared organizational practice embedded within everyday school and pesantren activities rather than as a centralized managerial function.

Overall, Theme 2 demonstrates that quality control within Islamic boarding school-based educational institutions represents a multidimensional organizational process

integrating academic supervision, religious discipline, programme evaluation, and collective institutional responsibility. These interconnected practices ensured that organizational performance remained aligned with predetermined educational objectives while simultaneously reinforcing the cultural values that characterize pesantren-based education. Consequently, quality control functioned not only as a mechanism for maintaining educational standards but also as an organizational process through which quality culture was continuously enacted and sustained.

Table 2. Synthesis of theme 2: Quality control through academic supervision, religious discipline, and collective organizational responsibility

Analytical Dimension	SMA Darul Ulum 2 Unggulan BPPT	MAN 3 Jombang	Cross-site Interpretation
Academic supervision	Classroom supervision, internal audit, ISO monitoring	Classroom supervision, EDM, academic mentoring	Academic supervision functions as the principal quality control mechanism.
Programme evaluation	Internal Quality Assurance Team (TPMPS), ISO evaluation	Routine programme evaluation and academic review	Evaluation provides evidence for organizational improvement.
Student discipline	Academic discipline integrated with pesantren regulations	Religious discipline integrated with student guidance	Quality control incorporates behavioural and religious dimensions.
Organizational responsibility	Quality shared among leaders, teachers, staff, and foundation	Collective responsibility involving all stakeholders	Quality assurance is institutionalized through collaborative organizational responsibility.
Interpretation through Juran	Performance monitoring supported by formal quality systems	Performance monitoring supported by organizational culture	Quality Control extends beyond monitoring toward culturally embedded organizational practices.

Table 2 illustrates that both schools implemented Quality Control through continuous academic supervision, programme evaluation, student discipline, and collective organizational responsibility. Although SMA Darul Ulum 2 Unggulan BPPT emphasized formal quality assurance mechanisms, including ISO monitoring and the Internal Quality Assurance Team (TPMPS), MAN 3 Jombang relied more on organizational culture through Madrasah Self Evaluation (EDM), academic mentoring, and routine programme reviews. Despite these contextual differences, both institutions demonstrated that quality control extends beyond monitoring educational performance to include behavioural regulation, religious discipline, and collaborative responsibility among school stakeholders. These findings indicate that Juran's Quality Control is operationalized as a culturally embedded organizational process that continuously maintains and strengthens educational quality through both formal systems and shared institutional commitment.

Quality improvement through continuous institutional learning and collaborative professional development

The findings indicate that quality improvement in both pesantren-based schools was conceptualized as an ongoing institutional learning process rather than as a series of isolated improvement projects. Improvement initiatives were embedded within everyday organizational practices and supported by continuous evaluation, professional development, technological innovation, and collaborative participation among educational stakeholders. This orientation demonstrates that educational quality was regarded as a dynamic organizational capability requiring constant adaptation to changing educational demands while remaining aligned with the institutions' religious values and educational mission.

Continuous professional development emerged as the most significant strategy for sustaining educational quality. Both institutions invested consistently in improving teachers' competencies through workshops, academic training, professional learning communities, curriculum development activities, and subject teacher forums. Professional development was not limited to enhancing pedagogical knowledge but also included strengthening teachers' instructional innovation, technological competence, and capacity to respond to evolving curriculum requirements. These activities enabled teachers to continuously refine their instructional practices while maintaining consistency with institutional quality objectives.

Institutional learning was further reinforced through systematic evaluation and organizational reflection. Programme implementation, academic achievement, supervision outcomes, and stakeholder feedback were continuously reviewed to identify areas requiring improvement. Rather than functioning as a mechanism for fault-finding, evaluation served as an organizational learning process that generated information for future planning, resource allocation, and instructional refinement. Consequently, quality improvement was driven by evidence collected through routine organizational activities instead of sporadic reform initiatives. This pattern illustrates that continuous improvement had become institutionalized within the managerial routines of both schools.

The two institutions nevertheless demonstrated different strategic emphases in implementing quality improvement. SMA Darul Ulum 2 Unggulan BPPT Jombang prioritized educational internationalization through bilingual instruction, foreign language certification, robotics education, international academic programmes, and technology-supported learning. These initiatives reflected the institution's commitment to preparing students for broader global educational competitiveness while maintaining its pesantren identity. In contrast, MAN 3 Jombang emphasized strengthening academic culture through teacher workshops, Musyawarah Guru Mata Pelajaran (MGMP), digitalization of educational administration, instructional supervision, and the continuous development of teachers' professional competencies. Improvement initiatives therefore focused primarily on enhancing organizational learning capacity and strengthening instructional effectiveness within the madrasah environment.

Infrastructure development also constituted an important dimension of continuous quality improvement. Both institutions continuously upgraded educational facilities, expanded learning resources, strengthened information and communication technology, and improved instructional support systems to facilitate more effective teaching and learning processes. These investments were closely integrated with human resource development, indicating that institutional improvement was understood as the

simultaneous enhancement of organizational capacity, technological infrastructure, and professional competence rather than as separate managerial initiatives.

Across both cases, collaborative participation emerged as a defining characteristic of quality improvement. Improvement initiatives involved school leaders, teachers, administrative personnel, pesantren authorities, and other educational stakeholders working collectively to identify institutional priorities, implement innovation, and evaluate organizational performance. This collaborative approach strengthened organizational commitment to continuous improvement while fostering shared responsibility for sustaining educational quality. The findings therefore suggest that collaborative professional development functioned not merely as a mechanism for improving individual teacher competence but also as an organizational process through which institutional knowledge, shared learning, and quality culture were collectively constructed.

Overall, Theme 3 demonstrates that quality improvement in pesantren-based schools operates as a continuous institutional learning process integrating professional development, organizational reflection, technological advancement, infrastructure enhancement, and collaborative participation. Rather than treating improvement as an episodic response to performance deficiencies, both institutions embedded continuous learning within their organizational culture, enabling educational quality to evolve systematically while preserving the distinctive religious values that characterize Islamic Boarding School.

Table 3. Synthesis of theme 3: Quality improvement through continuous institutional learning

Analytical Dimension	SMA Darul Ulum 2 Unggulan BPPT	MAN 3 Jombang	Cross site Interpretation
Teacher development	International training, bilingual learning, robotics	MGMP, workshops, curriculum development	Continuous professional development strengthens institutional capability.
Innovation	International programmes and technology integration	Digital administration and instructional innovation	Innovation supports sustainable quality improvement.
Organizational learning	Programme evaluation and institutional reflection	Continuous evaluation and collaborative learning	Organizational learning becomes an institutional routine.
Infrastructure	ICT development and international learning facilities	Educational facilities and digital systems	Infrastructure development complements human resource improvement.
Interpretation through Juran	Continuous improvement through innovation	Continuous improvement through organizational learning	Quality Improvement is implemented as continuous institutional learning.

Table 3 demonstrates that both schools implemented Quality Improvement through continuous professional development, organizational innovation, institutional learning, and infrastructure enhancement. While SMA Darul Ulum 2 Unggulan BPPT emphasized international training, bilingual education, robotics programmes, and advanced ICT facilities, MAN 3 Jombang focused on teacher professional communities (MGMP), curriculum development, digital administration, and collaborative learning. Despite these contextual differences, both institutions viewed continuous learning and innovation as essential mechanisms for sustaining educational quality. The cross-site findings indicate that Juran's Quality Improvement is operationalized not merely as incremental change but as an ongoing organizational learning process that integrates human resource development, educational innovation, reflective evaluation, and infrastructure improvement to achieve sustainable institutional excellence.

Cross theme synthesis: Pesantren quality culture as the contextual enabler of Juran's quality trilogy

The cross theme analysis demonstrates that the implementation of Juran's Quality Trilogy in the two Islamic boarding school based educational institutions cannot be understood as three independent managerial activities. Instead, Quality Planning, Quality Control, and Quality Improvement were consistently interconnected through a shared organizational environment characterized by religious values, collaborative governance, stakeholder participation, institutional commitment, and continuous organizational learning. These interconnected organizational characteristics collectively formed a distinctive quality culture that supported the implementation of quality management throughout the institutions.

Across both research sites, Quality Planning was implemented through systematic stakeholder engagement, strategic curriculum planning, institutional vision alignment, and the integration of pesantren educational values into organizational planning. Institutional planning was therefore not limited to administrative decision-making but represented a collaborative process involving school leaders, teachers, boarding school administrators, students, parents, and external stakeholders in establishing shared educational priorities. This planning process created the organizational foundation upon which subsequent quality management activities were developed.

The findings further indicate that Quality Control functioned as a continuous organizational process integrating academic supervision, programme evaluation, religious discipline, behavioural monitoring, and collective institutional responsibility. Rather than relying solely on formal monitoring systems, both institutions embedded quality control within everyday educational practices through continuous supervision, character development, organizational coordination, and shared accountability. Consequently, quality control became an integral component of institutional culture rather than merely an administrative quality assurance procedure.

Similarly, Quality Improvement was consistently implemented through continuous institutional learning supported by professional development, technological innovation, organizational reflection, infrastructure enhancement, and collaborative participation. Improvement initiatives were not undertaken as isolated corrective actions but were institutionalized through routine evaluation, evidence-informed decision-making, teacher learning, and continuous organizational adaptation. This pattern demonstrates that improvement activities functioned as an ongoing organizational capability embedded within the daily operation of both educational institutions.

When considered collectively, these three themes reveal that the implementation of Juran's Quality Trilogy was enabled by a broader organizational environment that consistently reinforced institutional commitment to educational quality. Throughout the planning, control, and improvement processes, organizational practices were guided by shared religious values, mutual trust, collective responsibility, stakeholder collaboration, and a sustained commitment to educational excellence. These organizational characteristics were evident across both research sites despite differences in governance structures, managerial approaches, and institutional priorities. The consistency of these patterns suggests that quality management was sustained not only through formal managerial systems but also through the organizational culture that shaped everyday educational practices.

Based on this cross-theme synthesis, the present study identifies Pesantren Quality Culture as an empirically grounded conceptual interpretation describing the organizational context within which Juran's Quality Trilogy operates in Islamic boarding school based educational institutions. Within this study, Pesantren Quality Culture refers to the integration of religious values, collaborative organizational practices, stakeholder engagement, shared institutional responsibility, and continuous organizational learning that collectively support the implementation of Quality Planning, Quality Control, and Quality Improvement. This concept emerged inductively from the convergence of findings across both research sites rather than from the application of a predetermined theoretical construct.

Overall, the cross theme synthesis demonstrates that educational quality management within pesantren-based schools is sustained through the interaction between structured managerial processes and culturally embedded organizational practices. While the three components of Juran's Quality Trilogy provided the managerial architecture of quality management, Pesantren Quality Culture functioned as the contextual organizational environment that enabled these processes to operate cohesively and continuously. This synthesis provides the empirical foundation for the subsequent discussion on how the findings extend the contextual application of Juran's Quality Trilogy within faith based educational organizations.

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Discussion

Reinterpreting quality planning through the contextual lens of Juran's quality trilogy

The findings demonstrate that quality planning in pesantren-based secondary schools extends beyond the conventional managerial interpretation proposed by Juran's Quality Trilogy. While Juran conceptualizes quality planning as a systematic process of identifying customer needs, designing products or services, and developing organizational processes capable of meeting those needs (Juran & Godfrey, 1998), the present study indicates that quality planning is simultaneously embedded within institutional culture and collective organizational values. Across both research sites, planning activities were characterized by the active involvement of school leaders, teachers, pesantren administrators, parents, and external educational authorities in identifying stakeholder expectations and translating them into strategic educational programs. These findings suggest that quality planning functions not merely as an administrative process but as a collaborative organizational practice grounded in shared institutional commitment.

This finding is consistent with recent work by Hakouz & Zumpe (2026), who argue that effective school improvement planning should be understood as a continuous organizational process rather than a compliance-oriented administrative requirement. Their study demonstrates that meaningful planning depends upon continuous monitoring, stakeholder participation, and the ability of school leaders to reconcile external policy demands with internal organizational needs. Similar patterns emerged in the present study, where planning was undertaken through recurring consultations among multiple stakeholders rather than through isolated annual planning exercises. However, the present study extends Hakouz and Zumpe's argument by demonstrating that, within pesantren-based schools, stakeholder engagement is reinforced not only by managerial responsibility but also by shared religious values, collective accountability, and long established traditions of deliberation (*musyawarah*). Consequently, planning becomes both a managerial and a socio-cultural process.

The findings also reinforce the argument advanced by Legemaate et al. (2025) that sustainable quality culture requires the integration of technical systems and social systems. The technical dimension was evident through structured strategic plans, annual work programs, quality objectives, and formal organizational procedures. Simultaneously, the social dimension was reflected in mutual trust, shared ownership, collaborative decision-making, and collective commitment among organizational members. Nevertheless, the present study provides an important theoretical refinement by showing that these two dimensions are integrated through Pesantren Quality Culture, where religious norms, institutional traditions, and moral responsibility continuously shape organizational planning processes. Thus, planning is not driven solely by managerial systems but also by values that strengthen organizational cohesion and long term commitment to educational quality.

Another important contribution of this study concerns the relationship between quality planning and faith-based educational organizations. Previous research has acknowledged that organizational values influence institutional quality management, yet empirical evidence explaining this relationship remains limited. Agyei et al. (2024) emphasize that quality management within faith-based institutions depends upon aligning governance structures with institutional values and stakeholder expectations. Similarly, D'Agostino & Asadullah (2025) argue that research on faith-based education has predominantly focused on educational access and governance while paying

comparatively little attention to internal quality management processes. The present study addresses this gap by demonstrating that faith-based organizational values do not merely coexist with managerial planning but actively shape the way planning priorities are established, organizational consensus is achieved, and quality objectives are sustained. In this respect, faith-based institutional identity becomes an enabling condition for effective educational quality planning rather than an external contextual characteristic.

Taken together, these findings confirm the continuing relevance of Juran's Quality Planning while simultaneously extending its application within culturally embedded educational organizations. Rather than viewing quality planning as a linear managerial activity, this study conceptualizes it as a dynamic organizational process emerging from the interaction of strategic management, organizational quality culture, stakeholder collaboration, and faith-based institutional values. Accordingly, the study proposes that Pesantren Quality Culture functions as the contextual organizational mechanism through which quality planning is continuously institutionalized. This interpretation represents a theoretical extension of Juran's Quality Trilogy by demonstrating that the effectiveness of quality planning depends not only on managerial capability but also on the organizational culture that sustains collective ownership, shared responsibility, and continuous institutional commitment to educational excellence.

Reinterpreting quality control through pesantren organizational practices

The findings indicate that quality control within pesantren-based secondary schools extends beyond the traditional managerial function of monitoring organizational performance. Consistent with Juran's Quality Trilogy, quality control was implemented through systematic supervision of teaching and learning, continuous monitoring of institutional programs, performance evaluation, and corrective actions designed to maintain educational standards (Juran & Godfrey, 1998). However, the empirical evidence demonstrates that these managerial activities were embedded within daily organizational practices characterized by collective responsibility, professional collaboration, and shared commitment to institutional values. Consequently, quality control operated not only as a formal managerial mechanism but also as a socially embedded organizational practice through which educational quality was continuously maintained and reinforced.

These findings support the argument advanced Legemaate et al. (2025) that sustainable quality management depends upon the interaction between technical systems and social systems. In the participating schools, technical systems were reflected in structured supervision schedules, performance monitoring, internal evaluation procedures, academic reporting, and quality assurance documentation. At the same time, the social dimension was evident through collegial supervision, collaborative problem-solving, reciprocal feedback, and shared accountability among school leaders, teachers, and pesantren administrators. Nevertheless, the present study extends Legemaate et al.'s framework by demonstrating that these technical and social systems are strengthened through Pesantren Quality Culture, where religious values encourage mutual trust, moral responsibility, and collective commitment to maintaining educational quality. Thus, quality control becomes an organizational process sustained simultaneously by managerial structures and institutional values.

The findings also resonate with Dallasheh (2026) who argues that effective quality management requires participatory governance, decentralized decision-making, and

systematic stakeholder involvement rather than relying exclusively on hierarchical administrative control. Similar patterns emerged across the two research sites, where monitoring and evaluation were not concentrated solely in formal leadership positions but involved teachers, boarding school administrators, students, and parents as active contributors to organizational quality. However, the present study advances this perspective by illustrating that stakeholder participation is not merely an administrative strategy but an institutionalized organizational norm rooted in pesantren traditions. Through regular consultation, collective reflection, and shared responsibility, quality control evolves into a participatory organizational process that continuously reinforces institutional effectiveness.

A further contribution of the present findings concerns the relationship between quality control and professional collaboration. Droissart & Tuytens (2024) demonstrate that collaboration among educators' functions as an important mechanism for strengthening quality culture through shared professional learning and collective responsibility. The present study similarly found that supervision, monitoring, and evaluation were accompanied by collaborative discussions, professional feedback, mentoring, and reflective dialogue among teachers and school leaders. These collaborative activities enabled quality control to function not merely as an evaluative mechanism but as a continuous learning opportunity that supported instructional improvement and organizational development. Consequently, quality control became closely connected with professional learning rather than being perceived as an instrument of bureaucratic compliance.

Taken together, these findings reaffirm the central role of quality control within Juran's Quality Trilogy while providing a broader organizational interpretation of its implementation in faith-based schools. Rather than conceptualizing quality control as a sequence of inspection and corrective actions, the present study demonstrates that its effectiveness depends upon organizational practices characterized by collaboration, shared ownership, continuous professional dialogue, and culturally embedded moral commitment. Accordingly, Pesantren Quality Culture functions as the organizational mechanism through which managerial quality control is transformed into a participatory and sustainable process of institutional quality assurance. This interpretation extends Juran's original framework by demonstrating that quality control is most effective when managerial procedures are continuously reinforced through organizational culture, professional collaboration, and faith-based institutional values.

Reinterpreting quality improvement as continuous institutional learning

The findings demonstrate that quality improvement within pesantren-based secondary schools should be understood as a continuous process of organizational learning rather than as a sequence of isolated improvement initiatives. Consistent with Juran's Quality Trilogy, quality improvement was reflected in systematic efforts to strengthen teaching quality, enhance staff competencies, refine institutional programs, and respond proactively to emerging educational challenges Juran & Godfrey (1998). However, the present study indicates that these improvement efforts were sustained not primarily through periodic managerial interventions but through ongoing collaborative learning, reflective evaluation, and collective organizational commitment. Consequently, quality improvement functioned as an adaptive organizational capability continuously embedded within the daily practices of the participating schools.

These findings closely align with the concept of Organizational Learning Mechanisms (OLMs) proposed by Schechter et al. (2022), who argue that sustainable school improvement depends upon institutional arrangements enabling organizations to acquire, share, interpret, and utilize knowledge collectively. Across both research sites, continuous improvement was facilitated through regular professional discussions, reflective evaluation meetings, mentoring activities, curriculum review, and collaborative problem-solving among school leaders, teachers, and pesantren administrators. Rather than treating improvement as a reactive response to organizational deficiencies, both schools institutionalized learning-oriented routines that enabled educational practices to evolve continuously. Nevertheless, the present study extends Schechter et al.'s framework by demonstrating that these learning mechanisms are reinforced through Pesantren Quality Culture, where shared religious values encourage openness, mutual support, and collective responsibility for organizational development.

The findings also reinforce recent research emphasizing the relationship between collaborative professional learning and sustainable educational quality. Droissart & Tuytens (2024) argue that professional collaboration serves as a central mechanism through which organizational quality culture promotes continuous improvement by encouraging educators to exchange knowledge, reflect collectively, and strengthen instructional practice. Similar organizational dynamics emerged in the present study, where quality improvement was closely associated with teacher collaboration, peer mentoring, professional development activities, and collective reflection on educational outcomes. These collaborative practices transformed quality improvement from an individual responsibility into an organizational learning process shared across the institution. As a result, improvement initiatives became institutionalized through collective participation rather than depending solely on formal leadership directives.

The present findings further complement the work of Hakouz & Zumpe (2026) and Dallasheh (2026), both of whom emphasize that sustainable educational improvement requires continuous evaluation, stakeholder engagement, and adaptive organizational decision making. In the participating schools, quality improvement was not implemented as a fixed annual program but evolved through continuous monitoring, stakeholder feedback, organizational reflection, and iterative refinement of educational strategies. This adaptive approach enabled both schools to respond effectively to changing educational expectations while preserving their institutional identity as faith-based educational organizations. Accordingly, continuous improvement emerged as a cyclical organizational process characterized by learning, adaptation, and collective innovation rather than by episodic managerial reform.

Taken together, these findings reaffirm the importance of quality improvement within Juran's Quality Trilogy while simultaneously broadening its theoretical interpretation. Rather than conceptualizing quality improvement as the final stage of a managerial cycle, the present study demonstrates that it operates as a continuous process of institutional learning sustained through collaboration, organizational reflection, stakeholder participation, and culturally embedded values. Within this perspective, Pesantren Quality Culture functions as the organizational environment that transforms improvement initiatives into enduring institutional capabilities. This interpretation extends Juran's original framework by demonstrating that sustainable quality improvement depends not only on systematic managerial action but also on the

organizational learning processes through which educational institutions continuously create, share, and apply knowledge to achieve long-term educational excellence.

Extending the contextual application of Juran's quality trilogy through pesantren quality culture

The findings of this study collectively demonstrate that the implementation of Juran's Quality Trilogy cannot be fully understood as a sequence of managerial activities operating independently of organizational context. While quality planning, quality control, and quality improvement remain essential managerial processes, their effectiveness within the participating schools was consistently shaped by organizational values, collaborative relationships, shared responsibility, and continuous institutional learning. Across the two research sites, these organizational characteristics were not peripheral conditions but constituted the institutional environment through which managerial quality processes became sustainable organizational practices. Consequently, the present study suggests that the contextual conditions surrounding quality management deserve greater theoretical attention than has generally been acknowledged within traditional interpretations of Juran's Trilogy.

This interpretation is consistent with the growing body of literature emphasizing that educational quality emerges from the interaction between managerial systems and organizational culture rather than from compliance-oriented quality assurance alone. Legemaate et al. (2025) argue that sustainable quality culture requires the continuous integration of technical systems and social systems, whereas Droissart & Tuytens (2024) demonstrate that collaborative professional learning strengthens organizational quality through collective ownership and professional engagement. Similarly, Hakouz & Zumpe (2026) highlight the importance of continuous planning cycles and stakeholder participation in sustaining school improvement, while Schechter et al. (2022) emphasize organizational learning as the mechanism through which schools transform experience into institutional knowledge. Collectively, these studies support the proposition that sustainable quality management depends upon organizational capabilities extending beyond formal managerial procedures.

However, the present study advances these perspectives by demonstrating that, within faith-based secondary schools, organizational culture is not merely a supporting organizational variable but functions as the primary mechanism through which quality management is institutionalized. Unlike most previous studies conducted in secular educational settings or higher education institutions, the participating schools embedded managerial quality processes within religious values, collective moral responsibility, deliberative decision-making (*musyawarah*), mutual trust, and long-established traditions of community participation. These culturally embedded organizational practices created an institutional environment in which planning, monitoring, evaluation, and improvement were continuously reinforced through shared organizational commitment rather than through administrative control alone. In this respect, Pesantren Quality Culture represents a distinctive organizational capability emerging from the interaction between faith-based institutional values and continuous quality management.

The findings also contribute to the emerging literature on faith-based educational organizations. While previous studies acknowledge the importance of institutional values in shaping educational governance, research has provided only limited theoretical explanation of how these values influence the implementation of quality

management systems. Agyei et al. (2024) argue that effective quality management within faith-based organizations depends upon aligning governance structures with institutional values and stakeholder expectations, whereas D'Agostino & Asadullah (2025) identify a significant gap concerning internal organizational processes within faith-based education. The present study addresses this gap by demonstrating that faith-based values influence educational quality not simply by shaping institutional identity but by continuously reinforcing collaborative planning, participatory quality control, and organizational learning. Thus, religious values become operational organizational resources supporting sustainable educational quality rather than symbolic institutional characteristics.

Accordingly, this study proposes Pesantren Quality Culture as a context-specific theoretical extension of Juran's Quality Trilogy. Rather than replacing Juran's framework, the proposed interpretation complements it by explaining the organizational conditions under which quality planning, quality control, and quality improvement become sustainable organizational capabilities. Within this extended framework, Pesantren Quality Culture functions as the contextual organizational enabler integrating managerial quality processes, organizational learning, collaborative professional practice, stakeholder participation, and faith-based institutional values into a coherent system of continuous educational improvement. This conceptualization contributes to educational quality management theory by demonstrating that sustainable educational quality is achieved not solely through effective managerial procedures but through the interaction between managerial systems and culturally embedded organizational processes.

From a broader theoretical perspective, the present study shifts the discussion of Juran's Quality Trilogy from a predominantly managerial model toward a culturally embedded organizational framework. The study therefore argues that educational quality management should be interpreted as an organizational capability emerging from continuous interactions among organizational culture, institutional learning, stakeholder collaboration, and strategic management rather than as a linear sequence of planning, control, and improvement activities. This perspective provides a more comprehensive explanation of how educational quality is sustained within faith-based educational organizations and offers a transferable conceptual framework for future research examining quality management in culturally distinctive educational contexts for SDG 4.

CONCLUSION

Fundamental Finding: This study demonstrates that Juran's Quality Trilogy remains a relevant framework for understanding educational quality management in faith-based schools. The findings show that quality planning, quality control, and quality improvement are implemented not merely as managerial procedures but as interconnected organizational processes embedded within Pesantren Quality Culture. Through collaborative leadership, stakeholder participation, organizational learning, and shared institutional values, the two pesantren-based schools successfully institutionalized sustainable quality management practices. The study further reveals that the effectiveness of Juran's Quality Trilogy depends not only on managerial competence but also on the organizational culture that supports continuous learning, collaboration, and institutional commitment to quality. **Implication:** The study contributes theoretically by extending the contextual application of Juran's Quality

Trilogy within faith-based educational organizations through the concept of Pesantren Quality Culture as an organizational enabler of sustainable quality management. Practically, the findings provide school leaders and educational policymakers with evidence that strengthening organizational culture, collaborative leadership, stakeholder engagement, and continuous organizational learning is essential for sustaining educational quality improvement. The study also supports the achievement of Sustainable Development Goal 4 (SDG 4) by demonstrating that quality management embedded within institutional culture can strengthen inclusive, equitable, and high-quality education through continuous school improvement and professional learning. **Limitation:** This study was conducted in two pesantren-based secondary schools in Indonesia using a qualitative multi-site case study design. Therefore, the findings reflect the organizational characteristics of faith-based educational institutions and may not be directly generalizable to other school types or educational systems. In addition, the study focused on institutional quality management processes without examining their long-term impact on student learning outcomes. **Future Research:** Future studies are encouraged to examine the proposed contextual interpretation of Juran's Quality Trilogy across different educational levels, school types, and cultural settings using comparative or mixed-methods approaches. Longitudinal research is also recommended to investigate how organizational quality culture influences the sustainability of educational quality improvement over time. Furthermore, future research may explore the integration of digital quality management systems, data-driven decision-making, and organizational innovation to strengthen continuous quality improvement in diverse educational contexts.

AUTHOR CONTRIBUTIONS

Matnasir contributed to the conceptualization of the study, literature review, research design, methodology development, data collection, field investigation, formal analysis, data interpretation, visualization, preparation of the original manuscript draft, project administration, and final approval of the manuscript. **Sujarwanto** contributed to the literature review, manuscript review and editing, critical revision of the manuscript, academic supervision, research guidance, validation of the research findings, theoretical refinement, and final manuscript approval. **Nunuk Hariyati** contributed to the literature review, manuscript review and editing, critical revision of the manuscript, academic supervision, research guidance, validation of the research findings, conceptual refinement, and final manuscript approval.

CONFLICT OF INTEREST STATEMENT

The author declares that there are no financial, professional, or personal conflicts of interest that could have influenced the research process, interpretation of the findings, or the preparation of this manuscript.

STATEMENT ON THE USE OF AI OR DIGITAL TOOLS IN WRITING

The author acknowledges the use of AI-assisted writing tools, including ChatGPT (OpenAI), during the preparation of this manuscript. These tools were used solely to assist with language refinement, grammar correction, manuscript organization, and improvement of academic writing clarity. All research design, data collection, data analysis, interpretation of findings, and final conclusions were conducted independently by the author. All AI-assisted outputs were critically reviewed, verified,

and revised to ensure the accuracy, originality, and academic integrity of the manuscript. The author takes full responsibility for the content and conclusions presented in this article.

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