



Implementation of Total Quality Management in Secondary Education: Challenges and Institutional Quality Transformation

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Abstract: This study investigates the implementation of Total Quality Management (TQM) in improving educational quality at SMA Negeri 4 Pekalongan by examining leadership commitment, stakeholder involvement, and continuous improvement practices. A qualitative case study design was employed involving 15 participants, including the principal, teachers, administrative staff, students, and parents. Data were collected through semi-structured interviews, observations, and document analysis, and analyzed using the Miles and Huberman interactive model with triangulation to ensure trustworthiness. The findings indicate that TQM implementation remains in a transitional stage and has not yet been fully institutionalized as an organizational culture. Although school leadership demonstrates strong commitment through planning, supervision, and evaluation, follow-up actions remain limited and largely procedural. Stakeholder participation is still concentrated on operational activities, while continuous improvement is constrained by weak data utilization and fragmented evaluation systems. This study contributes empirical evidence on TQM implementation in Indonesian secondary schools and highlights the importance of participatory governance, evidence-based decision-making, and sustainable quality culture to strengthen institutional effectiveness

Abstrak: Penelitian ini bertujuan menganalisis implementasi *Total Quality Management* (TQM) dalam meningkatkan mutu pendidikan di SMA Negeri 4 Pekalongan dengan menelaah komitmen kepemimpinan, keterlibatan pemangku kepentingan, dan praktik perbaikan berkelanjutan. Penelitian menggunakan pendekatan kualitatif dengan desain studi kasus yang melibatkan 15 partisipan, terdiri atas kepala sekolah, guru, tenaga kependidikan, siswa, dan orang tua. Data dikumpulkan melalui wawancara semi-terstruktur, observasi, dan studi dokumentasi, kemudian dianalisis menggunakan model interaktif Miles dan Huberman dengan triangulasi untuk menjamin keabsahan data. Hasil penelitian menunjukkan bahwa implementasi TQM masih berada pada tahap transisi dan belum sepenuhnya terinternalisasi sebagai budaya organisasi sekolah. Meskipun kepemimpinan sekolah menunjukkan komitmen kuat melalui perencanaan, supervisi, dan evaluasi, tindak lanjut masih bersifat prosedural. Partisipasi pemangku kepentingan masih terbatas pada kegiatan operasional, sedangkan perbaikan berkelanjutan terkendala pemanfaatan data yang belum optimal. Penelitian ini menegaskan pentingnya tata kelola partisipatif, pengambilan keputusan berbasis data, dan penguatan budaya mutu untuk mendukung peningkatan mutu pendidikan secara berkelanjutan.

A. Introduction

Improving educational quality has become a strategic priority as educational institutions face increasing global competition and growing demands for highly competent human resources. Schools are expected not only to deliver effective teaching and learning but also to establish sustainable management systems that promote accountability, stakeholder satisfaction, and continuous organizational improvement. In response to these expectations, Total Quality Management (TQM) has emerged as a comprehensive management philosophy that emphasizes customer satisfaction, teamwork, continuous improvement, and organizational effectiveness (Sallis, 2014; Tam, 2001). Within educational settings, TQM seeks to cultivate a quality-oriented organizational culture through systematic planning, implementation, evaluation, and continuous refinement of institutional processes.

The implementation of TQM is supported by several complementary theoretical perspectives. One of the most influential frameworks is the Deming Cycle, commonly known as Plan-Do-Check-Act (PDCA), which conceptualizes quality improvement as a continuous and cyclical process involving planning, implementation, evaluation, and corrective action (Deming, 1986). In educational organizations, the PDCA cycle enables schools to maintain quality standards while continuously improving institutional performance through evidence-based evaluation. Furthermore, Transformational Leadership Theory emphasizes the pivotal role of visionary leadership, motivation, collaboration, and shared commitment in fostering organizational change and quality enhancement (Fullan, 2016). Likewise, Continuous Improvement Theory argues that sustainable organizational excellence can only be achieved when improvement practices become embedded within institutional culture rather than being implemented as isolated administrative activities (Oakland, 2014).

Despite the recognized importance of TQM, its implementation in educational institutions—particularly at the secondary school level—continues to face considerable challenges. In Indonesia, many schools still struggle with ineffective instructional practices, inadequate infrastructure, fragmented evaluation systems, and suboptimal school management. These conditions indicate that quality management principles have not yet been fully institutionalized within everyday educational practices (Rahman et al., 2023). Consequently, quality assurance initiatives are frequently implemented merely to satisfy accreditation or administrative requirements rather than serving as strategic mechanisms for continuous educational improvement.

Previous studies consistently demonstrate the positive contribution of TQM to educational quality. For example, Nasim et al (2020) reported that TQM enhances institutional accountability and organizational performance in higher education. Similarly, Saparina et al (2020) found that TQM implementation improves student learning outcomes and parental satisfaction in primary education. Bouranta et al (2020) further confirmed through a systematic literature review that quality management practices in primary and secondary schools consistently enhance institutional performance and stakeholder

satisfaction. Setyowati (2023) demonstrated that TQM adoption in senior high schools strengthens quality service delivery and school management effectiveness. More recently, Kurniawan et al (2024) concluded that TQM strengthens organizational effectiveness and strategic management in educational institutions, while Rini et al (2024) emphasized its contribution to improving teaching quality and learning environments. In addition, Rahman et al (2023) argued that TQM reinforces school management systems and educational service quality.

However, several important research gaps remain. First, existing studies have predominantly focused on higher education institutions or primary education, leaving empirical evidence regarding TQM implementation in Indonesian secondary schools relatively limited. Second, previous research has generally examined TQM from managerial or administrative perspectives, with limited attention to the dynamic interaction among leadership commitment, stakeholder participation, and continuous improvement practices within actual school management processes. Third, although numerous studies acknowledge the importance of quality culture, few have explored how TQM principles become institutionalized as part of everyday organizational practices rather than remaining procedural compliance mechanisms. These limitations indicate that the practical institutionalization of TQM in Indonesian secondary schools remains insufficiently understood.

The secondary school context deserves particular attention because it represents a critical transitional stage between compulsory education and higher education or employment. At this level, schools encounter increasingly complex challenges, including curriculum reform, technological transformation, stakeholder expectations, and heightened accountability demand. Consequently, understanding how TQM is implemented in secondary schools is essential for strengthening institutional effectiveness and ensuring sustainable educational quality improvement.

Within this broader context, SMA Negeri 4 Pekalongan provides an appropriate setting for investigating TQM implementation. Although the school has adopted various quality assurance mechanisms, inconsistencies remain between quality planning and its practical implementation. Existing quality initiatives are generally procedural and have yet to evolve into an organizational culture that consistently promotes continuous improvement. This condition illustrates a clear discrepancy between formal quality standards and their realization in everyday school practices.

Another challenge concerns educators' understanding of TQM principles. Many teachers continue to perceive quality management primarily as an administrative obligation rather than as a strategic approach to improving teaching and learning processes. This finding is consistent with previous studies emphasizing that successful TQM implementation requires organizational awareness, leadership commitment, and active stakeholder participation (Kurniawan et al., 2024; Nasim et al., 2020). Furthermore, organizational resistance to change and relatively rigid institutional cultures continue to

inhibit innovation and collaborative quality improvement initiatives (Bakır & Altunay, 2025).

Resource limitations further complicate TQM implementation. Constraints related to infrastructure, financial support, professional development opportunities, and data-driven evaluation systems reduce the effectiveness of quality improvement initiatives. Moreover, the absence of integrated quality management systems limits schools' ability to conduct systematic monitoring, evidence-based evaluation, and continuous organizational learning (Astuti et al., 2025).

Nevertheless, SMA Negeri 4 Pekalongan also demonstrates several organizational strengths that support TQM implementation. School leadership exhibits a strong commitment to educational quality through strategic planning, academic supervision, and routine evaluation. Leadership plays a crucial role in fostering a shared vision, organizational commitment, and collaborative relationships among stakeholders (Setiyadi & Rosalina, 2021). In addition, teachers, students, and parents actively participate in various school programs, while the school has begun integrating evidence-based decision-making into several managerial processes (Ul Nisa et al., 2025). However, these strengths have not yet been integrated into a coherent quality management system capable of sustaining continuous improvement across the institution.

Based on these conditions, the present study addresses the identified research gap by examining how leadership commitment, stakeholder participation, and continuous improvement practices interact in shaping the implementation of TQM within an Indonesian secondary school.

The novelty of this study lies in its comprehensive investigation of TQM implementation as an organizational culture rather than merely an administrative management system. Unlike previous studies that primarily examined isolated managerial dimensions or conceptual aspects of TQM, this study integrates leadership commitment, stakeholder participation, and continuous improvement into a single analytical framework to explain how these dimensions collectively influence institutional quality transformation in a real secondary school context.

Based on the identified research gap, this study investigates how Total Quality Management (TQM) is implemented at SMA Negeri 4 Pekalongan by examining the roles of leadership commitment, stakeholder involvement, and continuous improvement practices in improving educational quality. Furthermore, the study explores how these three dimensions interact within the school management system and identifies the organizational strengths and challenges that influence the effectiveness of TQM implementation. Through this comprehensive analysis, the study seeks to provide empirical evidence on the institutionalization of TQM as a quality-oriented organizational culture in Indonesian secondary schools, thereby contributing to the development of more participatory, evidence-based, and sustainable educational quality management.

B. Method

This study employed a qualitative approach using a case study design to investigate the implementation of Total Quality Management (TQM) in improving educational quality at SMA Negeri 4 Pekalongan. A qualitative case study was considered appropriate because it enabled an in-depth exploration of TQM implementation within its real-life educational context, particularly regarding leadership commitment, stakeholder involvement, and continuous improvement practices (Yin, 2018). The study was guided by the Deming Cycle (Plan-Do-Check-Act), Transformational Leadership Theory, and Continuous Improvement Theory, which served as analytical lenses for examining quality planning, implementation, evaluation, and improvement within school management.

The research was conducted at SMA Negeri 4 Pekalongan from January to March 2026. The school was selected purposively because it had implemented several quality management initiatives and demonstrated ongoing efforts to improve educational quality through strategic planning, academic supervision, and stakeholder participation. Participants were selected using purposive sampling based on their direct involvement in quality management activities. The study involved 15 participants, consisting of one principal, six teachers, two administrative staff members, four students, and two parents. These participants represented multiple perspectives on leadership, educational services, and stakeholder engagement.

In qualitative inquiry, the researcher served as the primary research instrument, supported by semi-structured interview guides, observation checklists, and document analysis sheets. Interviews were designed to explore participants' experiences and perceptions of TQM implementation, while observations focused on leadership practices, supervision, stakeholder interactions, and school culture. Documentary evidence included strategic plans, supervision reports, meeting minutes, evaluation reports, and quality assurance documents.

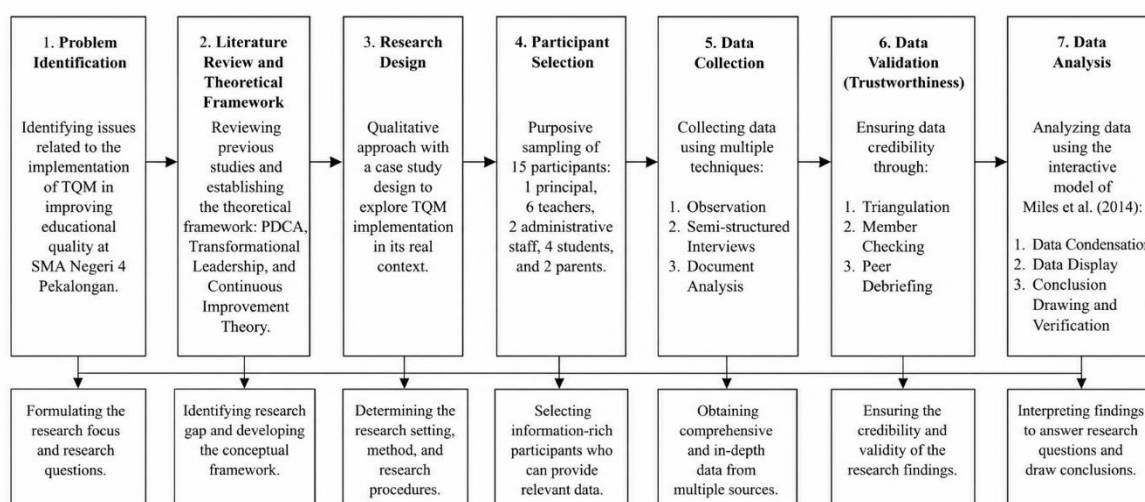
Data were collected through three complementary techniques: non-participant observation, semi-structured interviews, and document analysis. Observations were conducted during routine school activities to understand management practices in their natural setting. Individual interviews, lasting approximately 30–60 minutes, were audio-recorded with participants' consent and subsequently transcribed for analysis. Documentation was examined to corroborate information obtained from interviews and observations.

The credibility of the findings was enhanced through methodological triangulation, member checking, and peer debriefing. Data were analyzed using the interactive model proposed by Miles et al (2014), consisting of data condensation, data display, and conclusion drawing and verification. The analytical process was iterative, allowing emerging themes to be continuously refined until data saturation was achieved. This approach ensured a comprehensive understanding of how leadership commitment, stakeholder participation, and continuous improvement collectively influenced the implementation of TQM within the school.

Table 1. Research Participants

Participants	Number	Role in Research
Principal	1	Leadership and policy implementation
Teachers	6	Teaching and quality management practices
Administrative Staff	2	Administrative support and school services
Students	4	Educational service recipients
Parents	2	Stakeholder participation
Total	15	–

As presented in Table 1, the participants represented diverse stakeholder groups directly involved in school management and educational quality improvement, enabling the study to capture multiple perspectives on the implementation of Total Quality Management (TQM). Following participant selection, the research proceeded through several systematic stages, including data collection, trustworthiness verification, data analysis, and interpretation of findings. The overall research procedure is illustrated in Figure 1.

**Figure 1.** Research Flow

C. Result

Overview of TQM Implementation at SMA Negeri 4 Pekalongan

The findings of this study indicate that the implementation of Total Quality Management (TQM) at SMA Negeri 4 Pekalongan has been formally initiated but has not yet been fully institutionalized as an organizational culture. Based on observations, interviews, and documentation analysis, the school has implemented several quality management practices, including strategic planning, routine evaluations, academic supervision, and internal quality assurance mechanisms. However, these practices are still largely procedural and administrative in nature. The principal explained that quality

improvement programs had been integrated into the school's annual work plans and evaluation meetings:

"We already have quality programs and regular evaluations every semester, but sometimes the follow-up is still not optimal because of limited time and resources." (Principal/P1).

Similarly, several teachers stated that quality management activities were often perceived as administrative obligations rather than continuous improvement efforts:

"Quality management activities are often conducted only to fulfill administrative requirements." (Teacher/T3)

"Most teachers focus on completing teaching administration rather than discussing long-term quality improvement." (Teacher/T5).

Observation findings further revealed that academic supervision and evaluation meetings were conducted regularly as part of the school's quality assurance activities. Nevertheless, documentation analysis indicated that the outcomes of these evaluations were rarely translated into systematic follow-up actions. Most evaluation reports primarily documented completed activities and administrative achievements, while measurable improvement targets, performance indicators, and action plans for subsequent implementation were limited. This finding suggests that evaluation functions have not yet been fully integrated into a continuous quality improvement cycle.

A cross-analysis of interview, observation, and documentation data identified three recurring themes that consistently emerged across participants: (1) the procedural implementation of TQM, (2) limited stakeholder participation in quality management processes, and (3) weak utilization of data to support evaluation and decision-making. These interrelated themes indicate that, although the school has established fundamental quality management practices, TQM implementation remains at a developmental stage. Overall, SMA Negeri 4 Pekalongan is gradually transitioning from a traditional administrative management approach toward a more quality-oriented management system, although stronger institutionalization and evidence-based continuous improvement are still required.

Table 2. Initial Themes of TQM Implementation

Theme	Findings	Evidence
Procedural implementation	TQM activities focus on administration	Interview T3, T5
Limited institutionalization	Quality culture not fully embedded	Observation O2
Weak follow-up system	Evaluation lacks measurable action	Documentation D4
Transitional management system	Shift toward quality-oriented practices	Interview P

Leadership Commitment in Quality Improvement

The findings show that school leadership demonstrates commitment toward educational quality improvement through strategic planning, supervision, and routine evaluation activities. The principal actively conducts coordination meetings, classroom supervision, and program evaluations involving teachers and administrative staff. Interview data indicate that leadership commitment is reflected in planning orientation and monitoring activities:

"Every semester we conduct supervision and evaluate learning implementation."
(Principal/P1)

"The principal often reminds teachers about improving learning quality and discipline."
(Teacher/T2)

Observation findings revealed that school leaders regularly attended evaluation meetings and supervised school programs directly. Documentation analysis also showed the existence of annual strategic plans and supervision schedules.

However, interview data revealed several limitations related to follow-up mechanisms and participatory management practices. Some teachers stated that evaluations were rarely followed by concrete improvement actions:

"After supervision, feedback is usually general and not followed by structured mentoring."
(Teacher/T4)

"Teachers are informed about decisions, but not always involved in determining them."
(Teacher/T1)

The findings also indicate that decision-making processes remain relatively centralized. Several staff members stated that quality initiatives still depended heavily on leadership direction rather than collective collaboration.

Table 3. Leadership Commitment Themes

Theme	Findings	Evidence
Strategic planning	Leadership develops quality programs	Interview P1
Supervision practices	Routine monitoring conducted	Observation O3
Limited follow-up	Feedback not systematically implemented	Interview T4
Centralized leadership	Decision-making remains top-down	Interview T1

Stakeholder Involvement

The findings indicate that stakeholder involvement has been initiated through teacher participation, student activities, parental meetings, and collaborative school programs. Teachers participate actively in curriculum implementation and school activities,

while students engage in extracurricular programs and classroom activities. One teacher stated:

"Teachers are involved in school programs, especially academic activities and curriculum implementation." (Teacher/T2)

Parents also acknowledged their involvement in school meetings:

"Parents are invited to meetings and informed about school programs regularly." (Parent/PR1)

However, deeper analysis reveals that stakeholder participation remains partial and not fully collaborative. Teachers' participation is still concentrated on operational tasks rather than strategic quality management processes. Several teachers explained:

"We mostly implement programs that have already been decided." (Teacher/T6)

"Parents usually only attend meetings but are rarely involved in planning programs." (Administrative Staff/A1)

Observation data showed that interaction between stakeholders was generally program-based and occasional rather than continuous and institutionalized. Furthermore, documentation analysis revealed no formal feedback management system for collecting and analyzing stakeholder input systematically.

Table 4. Stakeholder Involvement Themes

Theme	Findings	Evidence
Teacher participation	Active in instructional activities	Interview T2
Limited strategic involvement	Teachers not fully engaged in decision-making	Interview T6
Passive parental participation	Parents mainly attend formal meetings	Interview A1
Weak feedback system	No systematic stakeholder evaluation	Documentation D5

Continuous Improvement Practices

The findings reveal that SMA Negeri 4 Pekalongan has initiated several continuous improvement efforts, including teacher evaluations, curriculum reviews, and student assessment systems. Academic supervision and periodic evaluations are conducted regularly to monitor teaching and learning activities. The principal stated:

"We routinely evaluate teaching performance and student learning outcomes every semester." (Principal/P1)

Teachers also acknowledged that curriculum adjustments were implemented according to national policies:

“Curriculum development is discussed regularly, especially after policy changes.”
(Teacher/T3)

However, observations and interview findings indicate that improvement initiatives are not yet fully supported by systematic data analysis. Evaluation activities often focus on reporting rather than identifying root causes and strategic improvements. One teacher explained:

“Data are collected, but usually not analyzed deeply for long-term improvement.”
(Teacher/T5)

Another participant stated:

“Most evaluations stop at documentation without clear follow-up action.” (Administrative Staff/A2)

Observation findings further revealed that performance indicators and measurable targets were not clearly integrated into school improvement programs. This condition resulted in fragmented improvement practices and inconsistent implementation.

Table 5. Continuous Improvement Themes

Theme	Findings	Evidence
Evaluation practices	Routine monitoring implemented	Interview P1
Curriculum adjustment	Programs adapted to policy changes	Interview T3
Weak data utilization	Limited analysis of evaluation data	Interview T5
Fragmented improvement	Follow-up actions inconsistent	Interview A2

Strengths of TQM Implementation

The study identified several strengths in the implementation of TQM at SMA Negeri 4 Pekalongan. One major strength is leadership commitment toward quality improvement. School leaders consistently conduct evaluations, supervision, and strategic planning activities.

Another strength is the existence of collaborative school programs involving teachers and students. Observation findings also indicate growing awareness among teachers regarding the importance of educational quality improvement.

In addition, the school has begun utilizing evaluation data in several decision-making processes, reflecting initial movement toward evidence-based management practices.

Table 6. Strengths of TQM Implementation

Strengths	Empirical Evidence
Leadership commitment	Routine supervision and evaluation
Quality-oriented planning	Strategic annual programs
Teacher participation	Active curriculum implementation
Initial data utilization	Evaluation reports used in meetings

Weaknesses and Challenges

Despite these strengths, several weaknesses and challenges were identified. One major issue is the limited understanding of TQM principles among teachers and staff. A teacher explained:

“Some teachers still think quality management is only administrative work.” (Teacher/T4)

Another challenge relates to resistance to organizational change:

“Not all school members are ready to adapt to new systems and innovations.” (Administrative Staff/A2)

Resource limitations were also identified as barriers to effective implementation:

“Infrastructure and training opportunities are still limited.” (Teacher/T1)

Observation findings revealed that the school lacked an integrated quality management system connecting planning, implementation, evaluation, and follow-up processes. Furthermore, documentation analysis showed limited use of performance indicators and data analysis in strategic decision-making.

D. Discussion

The first research question examined how Total Quality Management (TQM) is implemented at SMA Negeri 4 Pekalongan. The findings reveal that TQM has been formally implemented through strategic planning, academic supervision, routine evaluation, and internal quality assurance activities. However, these initiatives have not yet been fully institutionalized as a quality-oriented organizational culture. Instead, most quality management practices remain procedural and are primarily directed toward fulfilling administrative and accreditation requirements rather than fostering continuous organizational improvement. This finding suggests that the school's principal challenge is not the absence of quality management mechanisms but the limited integration of quality values into everyday organizational practices.

This phenomenon can be explained through the perspective of TQM, which emphasizes that sustainable quality improvement depends on the institutionalization of quality principles throughout the organization rather than on the implementation of isolated

managerial procedures (Sallis, 2014). Similarly, Deming (1986) Plan-Do-Check-Act (PDCA) cycle argues that organizational quality can only improve when planning, implementation, evaluation, and corrective actions operate as an integrated and continuous process. In the present study, although planning and evaluation activities were conducted regularly, the limited evidence of systematic follow-up indicates that the **Act** phase of the PDCA cycle has not yet been optimally implemented. Consequently, quality management remains compliance-oriented rather than improvement-oriented.

These findings both support and extend previous research. Rahman et al (2023) reported that TQM strengthens school management and educational service quality, while Nasim et al (2020) and Kurniawan et al (2024) concluded that TQM enhances organizational effectiveness. The present study, however, demonstrates that the existence of quality management structures alone does not automatically produce meaningful institutional transformation. Rather, TQM becomes effective only when quality principles are embedded within organizational culture. This interpretation is consistent with Dahlgard et al (2019), Hietschold et al (2014), and Kaiseroglou & Sfakianaki (2020), who argue that cultural transformation represents the most challenging stage of TQM implementation because it requires changes in organizational values, professional routines, and institutional behavior. This view is further supported by Zohriah et al (2024), who found that TQM institutionalization in Islamic educational institutions depends on sustained commitment to quality values rather than mere procedural compliance.

The second research question investigated how leadership commitment influences the implementation of TQM. The findings indicate that school leadership demonstrates a strong commitment to quality improvement through strategic planning, academic supervision, and routine evaluation. Nevertheless, leadership practices remain predominantly managerial, emphasizing monitoring and administrative control rather than empowering teachers and other stakeholders to participate actively in organizational improvement. As a result, leadership functions more as an operational management mechanism than as a driver of organizational transformation.

This finding can be understood from the perspective of Transformational Leadership Theory, which emphasizes that effective educational leadership extends beyond administrative management to inspire a shared vision, professional collaboration, and continuous learning (Bush, 2020; Fullan, 2016). Although leadership commitment was evident throughout the study, its influence was constrained by limited participatory decision-making and inconsistent follow-up mechanisms. Therefore, leadership commitment alone is insufficient to sustain educational quality improvement unless it is accompanied by collaborative governance and systematic organizational learning. While Setiyadi & Rosalina (2021) reported that leadership significantly improves school performance through strategic direction, the present study demonstrates that the effectiveness of leadership depends largely on its ability to transform commitment into collective organizational action.

The third research question explored stakeholder involvement in TQM implementation. The findings show that teachers, students, parents, and administrative staff participate in various school activities; however, their involvement remains largely operational rather than strategic. Teachers primarily implement predetermined programs, while parents participate mainly through formal meetings and school communication activities. Consequently, stakeholder participation contributes more to program implementation than to planning, evaluation, or decision-making processes.

This pattern reflects [Harvey & Green \(1993\)](#) concept of limited participation, in which stakeholders are consulted but are not substantially empowered to influence institutional decisions. The persistence of this condition can also be attributed to the centralized governance structure commonly found in Indonesian schools, where authority is concentrated at the leadership level. Such organizational arrangements restrict opportunities for collaborative decision-making and distributed leadership. Consequently, stakeholder participation tends to emphasize compliance rather than shared ownership. These findings extend those of [Nasim et al \(2020\)](#), who argued that stakeholder engagement is essential for successful TQM implementation, by demonstrating that participation without meaningful decision-making authority contributes only marginally to organizational improvement. This interpretation is further supported by [Lucander & Christersson \(2020\)](#), who emphasize that genuine stakeholder engagement is achieved when participants actively influence institutional quality development.

The fourth research question examined how continuous improvement practices are implemented within the school. The findings indicate that evaluation activities, academic supervision, and curriculum reviews are conducted regularly. However, evaluation results are rarely analyzed systematically to identify performance gaps, establish measurable improvement targets, or guide strategic interventions. Consequently, improvement initiatives tend to be reactive, fragmented, and insufficiently supported by evidence-based decision-making.

From the perspective of the PDCA cycle, these findings indicate that schools have implemented the **Plan**, **Do**, and **Check** stages more consistently than the **Act** stage, where evaluation findings should be translated into corrective actions and sustainable improvement. This condition supports [Tam \(2001\)](#), [Psomas & Antony \(2017\)](#), and [Antony et al \(2018\)](#), who argue that effective TQM depends on systematic data utilization and continuous evaluation. The present study further suggests that limited use of evaluation data is not merely a technical issue but also reflects an organizational culture that views evaluation primarily as an accountability requirement rather than as a learning process. Consequently, schools collect substantial amounts of information but seldom transform it into strategic knowledge for institutional improvement.

The final research question focused on identifying the strengths and challenges of TQM implementation. The findings reveal several organizational strengths, including strong leadership commitment, active teacher participation, increasing awareness of educational quality, and initial efforts toward evidence-based management. These strengths

provide an important foundation for strengthening quality management within the school. Nevertheless, several challenges continue to hinder effective implementation, including limited understanding of TQM principles, resistance to organizational change, inadequate follow-up mechanisms, and the absence of integrated quality management systems.

These challenges are consistent with Kotter (2012) theory of organizational change, which explains that resistance frequently emerges when individuals perceive uncertainty, increased workload, or disruption to established routines. In educational settings, bureaucratic traditions and compliance-oriented management further reinforce resistance to innovation. Consequently, continuous improvement is often regarded as an additional administrative responsibility rather than an integral component of professional practice. The findings therefore suggest that sustainable TQM implementation requires organizational transformation that aligns leadership practices, stakeholder empowerment, evidence-based decision-making, and continuous improvement within a shared quality culture.

Overall, this study contributes to the TQM literature by demonstrating that successful implementation in secondary education depends not only on the existence of formal quality management structures but also on the interaction among leadership commitment, stakeholder empowerment, continuous improvement, and organizational culture. These dimensions are mutually reinforcing and should be implemented as an integrated quality management system rather than as isolated managerial practices. Practically, the findings imply that schools should move beyond compliance-oriented quality assurance by strengthening participatory governance, institutionalizing evidence-based decision-making, and fostering a sustainable culture of continuous improvement. Such efforts are essential for transforming TQM from an administrative requirement into a strategic approach to institutional quality transformation in secondary education.

E. Implication

The findings of this study have important theoretical and practical implications for the implementation of Total Quality Management (TQM) in secondary education. Theoretically, this study reinforces the view that successful TQM implementation depends not only on the adoption of formal quality management structures but also on the institutionalization of a quality-oriented organizational culture supported by transformational leadership, stakeholder empowerment, and evidence-based continuous improvement. These findings enrich the existing TQM literature by demonstrating the interdependence of these dimensions in shaping sustainable institutional quality transformation. Practically, the study suggests that school leaders should move beyond compliance-oriented quality management by strengthening participatory decision-making, establishing systematic follow-up mechanisms after evaluation, and promoting the use of data to guide strategic planning and continuous improvement. Furthermore, educational policymakers should support schools through capacity-building programs, leadership development, and integrated quality assurance systems that encourage organizational learning rather than administrative compliance. Collectively, these efforts can facilitate the

transformation of TQM from a procedural management practice into a sustainable strategy for improving educational quality and institutional effectiveness in secondary schools.

F. Limitation and Suggestion for Further Research

Despite its contributions, this study has several limitations that should be acknowledged. First, the research was conducted in a single secondary school, limiting the transferability of the findings to other educational settings with different organizational cultures, leadership characteristics, and institutional contexts. Second, the study adopted a qualitative case study design, which provided an in-depth understanding of TQM implementation but did not allow for the measurement of its direct impact on educational outcomes such as student achievement, teacher performance, or institutional effectiveness. In addition, the analysis focused primarily on leadership commitment, stakeholder participation, and continuous improvement practices, while other potentially influential factors, including organizational climate, digital transformation, resource availability, and external policy support, were beyond the scope of this study.

Building upon these limitations, future research is encouraged to employ mixed-methods or longitudinal designs to examine the long-term effectiveness of TQM implementation and its measurable influence on educational quality. Comparative studies involving multiple schools, educational levels, or regional contexts would also provide broader insights into how institutional characteristics shape quality management practices. Furthermore, future investigations should explore the integration of digital quality management systems, data analytics, and artificial intelligence to strengthen evidence-based decision-making and continuous improvement processes. Such studies would contribute to the development of more comprehensive and sustainable TQM models capable of supporting institutional quality transformation in secondary education.

G. Conclusion

This study concludes that the implementation of Total Quality Management (TQM) at SMA Negeri 4 Pekalongan has progressed beyond the establishment of formal quality management structures but has not yet been fully institutionalized as a sustainable organizational culture. Although the school has implemented strategic planning, academic supervision, routine evaluation, and stakeholder involvement, these practices remain largely procedural and have not been consistently supported by evidence-based decision-making and systematic follow-up mechanisms. The findings demonstrate that effective TQM implementation is determined not only by leadership commitment but also by the interaction among stakeholder participation, continuous improvement practices, and the institutionalization of quality values within daily school management.

This study contributes to the existing TQM literature by providing empirical evidence from the context of Indonesian secondary education and by demonstrating that sustainable institutional quality transformation requires an integrated approach combining

transformational leadership, collaborative governance, and continuous organizational learning. Practically, the findings highlight the importance of strengthening participatory management, data-driven evaluation, and continuous improvement systems to move beyond compliance-oriented quality assurance. Ultimately, TQM should be viewed not merely as an administrative management framework but as a strategic approach for achieving sustainable educational quality and long-term institutional effectiveness.

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