



The Implementation of Total Quality Management (TQM) to Improve Learning Quality in Schools

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Abstract :

This study aims to describe and analyse the implementation of Total Quality Management (TQM) in improving learning quality. Using a qualitative, descriptive case study design, the research explored how TQM principles were integrated into school management and instructional practices. Data were collected through interviews, observations, and documentation involving the principal, six teachers, one administrative staff member, and two parents. The findings reveal that TQM is implemented through participatory Leadership, teacher empowerment, effective management of learning facilities, and continuous evaluation based on the Plan–Do–Check–Act (PDCA) cycle. Leadership plays a crucial role in coordinating teacher collaboration and sustaining school improvement. Teacher empowerment is fostered through training, mentoring, and reflective discussions. The management of learning facilities and infrastructure demonstrates adaptive use of limited resources supported by community involvement. Evaluation is conducted systematically to ensure continuous feedback and improvement. The study concludes that implementing TQM has created a culture of collaboration, accountability, and innovation. The research implies that TQM principles can be effectively adapted in resource-limited schools through participatory management, reflective evaluation, and community partnerships to strengthen sustainable quality assurance in education.

INTRODUCTION

Education plays a crucial role in shaping human resources capable of facing global challenges and technological transformation (Ivaldi et al., 2022; Sun & Jung, 2024; Tavares et al., 2023). In the current era of rapid change, schools are required not only to provide knowledge but also to ensure that learning quality continuously improves (Fernández et al., 2023; Wolde, 2021; Yu, 2023). The government has implemented various programs (Dangouloff et al., 2021), such as the Merdeka Curriculum and school quality assurance systems (Astuti et al., 2024), to strengthen the accountability and performance of educational institutions. However, the success of these programs largely depends on how schools implement effective management practices that focus on continuous improvement, participation, and innovation.

In this context, the concept of Total Quality Management (TQM) becomes highly relevant to the management of educational institutions (Efendi, 2022; Teixeira-Quiros et al., 2022; Yusuf, 2023). TQM emphasizes a systematic and participatory process that integrates planning, implementation, evaluation, and improvement to achieve excellence. According to Nadeem (2024), quality in education must be built through collective commitment involving all stakeholders, including school leaders, teachers, students, and parents. Similarly, Ahsan (2025) emphasizes that quality improvement in

organizations requires Leadership that inspires change and a culture of collaboration. These principles are compatible with the values of Islamic education, which uphold cooperation (*ta'awun*), continuous effort (*mujahadah*), and consultation (*musyawarah*) as foundations for achieving success.

Several studies have discussed the application of TQM in educational institutions. Research indicates that integrating TQM into educational management enhances Leadership effectiveness and teacher professionalism (El-Kassem, 2024; Kazem, 2024; Qingyan et al., 2023). Other studies have shown that collaborative planning and continuous evaluation significantly improve teacher competence (Dahri et al., 2021; Fang et al., 2021; García-Martínez et al., 2021). Koh (2021) also reported that limited infrastructure does not hinder quality improvement when schools apply adaptive management supported by community participation. Although these studies provide valuable insights, they mainly focus on *pesantren* and Islamic-based institutions, while studies in public primary schools implementing TQM remain limited.

Although previous studies have provided valuable insights into TQM implementation in Islamic educational institutions, most focus on *pesantren* and madrasah contexts with distinct organisational cultures and resources. Research on TQM practices in public elementary schools remains limited, especially those that integrate the principles of participatory Leadership, teacher empowerment, and continuous evaluation in resource-constrained environments. This study offers novelty by presenting an empirical model of TQM implementation in a public school setting, highlighting how systematic management, collaborative culture, and stakeholder involvement can sustain learning quality despite infrastructural limitations.

Therefore, the main objective of this research is to analyse the implementation of Total Quality Management (TQM) to improve learning quality at SD Negeri 01 in North Pontianak District. Specifically, the study focuses on four aspects: (1) Leadership in school quality management, (2) teacher empowerment and collaborative planning, (3) management of learning facilities and infrastructure, and (4) evaluation and continuous improvement mechanisms. The results are expected to provide a practical reference for educational leaders and policymakers to strengthen school-based quality assurance through participatory and sustainable management practices.

RESEARCH METHOD

This study used a qualitative, descriptive case study design to describe and analyse the implementation of Total Quality Management (TQM) to improve learning quality at SD Negeri 01 in North Pontianak District (De Rosa et al., 2022; Perez et al., 2023; Villamin et al., 2025). A qualitative design was chosen to understand in depth how Leadership, teacher empowerment, facilities, and evaluation work together to enhance educational quality. The case study was conducted because the school had applied TQM principles consistently and demonstrated significant progress in managing its learning process. The research was conducted at SD Negeri 01 in North Pontianak District, West Kalimantan Province. The school was selected purposively based on its relevance to the research objectives and its active efforts in implementing continuous improvement programs. Data sources consisted of the principal, teachers, administrative staff, and parents who were directly involved in the planning, implementation, and evaluation of school quality programs.

Data were collected through observation, interviews, and documentation. Observations were conducted to identify how the principal and teachers applied TQM principles in daily learning activities and management routines. Interviews were conducted using semi-structured guidelines to gather information on Leadership, teacher collaboration, facilities management, and evaluation systems. Documentation was used to verify information obtained from interviews and observations, including school programs, meeting minutes, reports, and quality improvement records.

Data were analyzed using an interactive approach comprising three stages: data condensation, data display, and conclusion drawing or verification (Bingham, 2023; Jenkins et al., 2023). The data condensation process involved organizing and coding field findings based on themes of Leadership, teacher empowerment, learning facilities, and evaluation. The data display was presented in narrative and tabular forms to facilitate interpretation. Conclusion drawing was conducted by comparing, linking, and verifying data among sources. To ensure data validity, triangulation was applied through cross-checking between observation, interview, and documentation results. The participants of this study are shown in Table 1.

Table 1. Research Informants

Position/Role	Number	Description of Involvement
Principal	1	Responsible for Leadership, planning, coordination, and supervision of TQM-based school programs.
Teachers	6	Participate in lesson planning, classroom implementation, internal training, and evaluation meetings.
Administrative Staff	1	Manage documentation, reporting, and administrative records related to school quality assurance.
Parents	2	Provide feedback on student progress and participate in evaluation and school–community collaboration activities.

RESULT AND DISCUSSION

Result

Implementation of Total Quality Management (TQM)

The implementation of Total Quality Management (TQM) at SD Negeri 01 in North Pontianak District reflects a systematic effort to foster a culture of continuous improvement in teaching and learning. Field data from interviews, observations, and documentation show that the principal and teachers have internalized TQM as a framework that connects Leadership, planning, evaluation, and stakeholder participation. The principal emphasized, "Quality is not achieved through inspection but through consistent collaboration." This statement captures the school's vision: that quality improvement must involve every component, including teachers, staff, students, and parents, working together in harmony.

Observation data reveal that TQM is applied through structured routines such as collaborative lesson planning, periodic evaluation, and reflective discussions. Teachers integrate digital media, adjust lesson objectives, and review outcomes at the end of each learning cycle. The school's *Quality Plan* documentation shows clear performance indicators and measurable targets aligned with the national curriculum. Each plan specifies strategies for teaching improvement, student engagement, and moral development. This approach ensures that the concept of TQM is not limited to management but extends to the core of the learning process.

The principal's Leadership style embodies participatory management. Decision-making is carried out through collective forums such as teacher meetings and committee consultations. One teacher stated, "We are encouraged to give ideas, and our input is always considered before decisions are made." This inclusiveness fosters a sense of ownership among staff, strengthening motivation and accountability. The principal also ensures that each improvement program is accompanied by reflection, evaluation, and documentation. This approach aligns with the Kaizen principle in TQM, which emphasizes incremental, continuous progress.

The integration of Leadership, planning, and collaboration represents the foundation of the school's quality management system. Teachers understand that every process from curriculum design to assessment is interconnected. Through this mindset, SD Negeri 01 has built a learning environment that prioritizes discipline, teamwork, and responsibility. The implementation of TQM, therefore, becomes not only a managerial strategy but also a cultural transformation that nurtures commitment, reflection, and shared vision among all members of the school community. The figure below illustrates the interconnected system of TQM implementation in the school. Leadership, planning, and collaboration serve as the three main pillars that sustain continuous improvement. Leadership is represented through the principal's vision, teacher meetings, and committee consultations. Planning encompasses the school's quality plan, performance indicators, and measurable targets. Collaboration involves the participation of teachers, staff, students, and parents. Together, these elements form an integrated quality management cycle that ensures every school activity contributes to educational excellence and shared accountability.



Figure 1. TQM-Based Learning Quality Model

Teacher Empowerment and Collaborative Planning

Teacher empowerment is a central component of Total Quality Management (TQM). The school views teachers as agents of change who drive learning quality through creativity, reflection, and collaboration. The principal ensures that each teacher has the opportunity to contribute ideas, develop skills, and participate in decision-making. This approach is evident in the school's internal training programs, held twice a year, which focus on active learning, classroom management, and the use of digital tools. One teacher

remarked, “We are encouraged to learn together, not only to teach better but to manage learning quality more effectively.” Such empowerment helps teachers internalize the spirit of continuous improvement and accountability.

Collaborative lesson planning has become a routine practice among teachers. Every week, teachers from each grade level meet to design, review, and evaluate lesson plans based on student progress and classroom observations. These meetings serve as platforms for sharing experiences, identifying challenges, and finding collective solutions. Observation notes indicate that teachers actively exchange strategies to improve student engagement and adapt to diverse learning needs. A Grade 2 teacher shared, "When we plan together, we can see what works and what needs to be changed. It helps us avoid repeating mistakes." This statement reflects how collaboration strengthens both confidence and consistency in instructional practice.

The culture of collaboration also enhances professional growth. Teachers who have attended external training are encouraged to mentor their peers through in-house workshops. This mentoring system creates a sustainable cycle of learning where experienced teachers guide others in implementing innovative methods. Documentation from the school’s training agenda shows that peer mentoring has improved teacher performance, particularly in lesson evaluation and classroom management. The principal added, “We want every teacher to feel like a leader in their own classroom. Leadership is not about position, but about initiative and responsibility.” Such a statement captures the essence of TQM, which emphasizes empowerment as the foundation for quality development.

Table 1. Teacher Empowerment and Collaborative Planning

Stage	Description	Expected Output
Training	Teachers participate in internal and external professional development programs focusing on pedagogy, classroom management, and digital learning.	Improved teaching competence and readiness for innovation.
Collaborative Planning	Teachers from each grade level work together to design lesson plans, set learning goals, and identify potential challenges.	Consistent lesson planning and shared understanding of objectives.
Implementation	Teachers apply planned strategies in the classroom and integrate digital tools to enhance student engagement.	An active and student-centered learning environment.
Reflection	Teachers evaluate lesson effectiveness through peer discussions, student feedback, and observation notes.	Identification of strengths and areas for improvement.
Feedback	Findings from reflection are discussed in staff meetings and used to adjust instructional practices.	Continuous improvement and alignment of teaching quality.
New Training	Results of evaluation inform new training topics, completing the continuous learning cycle.	Sustained professional development and enhanced instructional quality.

Strong communication channels within the school support collaborative practices. Regular coordination meetings, WhatsApp discussion groups, and shared digital folders allow teachers to exchange materials and feedback efficiently. These systems ensure transparency and shared responsibility among staff members. The participatory environment fosters a sense of belonging and collective ownership of

results. Through these mechanisms, SD Negeri 01 has successfully established a culture of teamwork that aligns with the principles of continuous improvement and stakeholder involvement. The empowerment process follows a continuous cycle that begins with professional training and proceeds through planning, implementation, reflection, and feedback. The outcomes of this process then form the basis for new training programs. This systematic cycle sustains teacher growth, strengthens collaboration, and ensures continuous improvement in instructional quality, as displayed by Table 1.

Learning Facilities and Infrastructure

The learning facilities at SD Negeri 01 in North Pontianak District play an important role in supporting the implementation of Total Quality Management (TQM). Observation results show that the school has made systematic efforts to maintain, utilize, and optimize available facilities. Classrooms are generally clean, well-organized, and equipped with learning aids created by teachers. The use of displays and thematic boards makes the classroom atmosphere more interactive and encourages student motivation. A staff member explained, "We try to ensure that classrooms remain comfortable so that students can focus and teachers can teach effectively." This finding shows that facility management is seen as part of the overall quality improvement process.

The school also provides access to digital learning tools to strengthen technology integration in the classroom. These facilities include several computers, two LCD projectors, and a wireless internet connection available to all teachers. Teachers have gradually adapted to digital learning platforms by using PowerPoint, educational videos, and online quiz applications during lessons. However, some teachers still face challenges in using these tools due to limited technical skills and time constraints. As one teacher stated, "We want to use more technology, but sometimes internet access is unstable, and the equipment must be shared." Despite these constraints, the school continues to make efforts to enhance digital infrastructure to support the quality of teaching and learning.

Another aspect that supports learning quality is the school's collaboration with community organizations and local stakeholders. Documentation shows that it has received assistance from education foundations and social organizations that donated laptops, books, and multimedia devices. These contributions have helped reduce disparities in access to learning resources. The principal emphasized that external partnerships are important to strengthen the school's capacity, stating, "We build cooperation because education cannot be managed alone; it requires community participation." This partnership strategy applies TQM principles to resource management, particularly through stakeholder engagement and shared responsibility.

Although progress has been made, several challenges remain in maintaining and developing infrastructure. The main issues are limited classrooms, inadequate ventilation in some buildings, and unstable internet connectivity. Some students also come from families who cannot afford digital devices, creating inequality in access to online learning. To overcome this, the school has established a schedule for using available devices and provides offline materials for students who cannot join digital sessions. These adaptive strategies show the school's commitment to ensuring equitable access to quality education. The findings related to learning facilities and infrastructure management are summarized in Table 2.

Table 2. Research Findings on Learning Facilities and Infrastructure

Category	Finding
Learning Facilities	Classrooms are clean, organized, and decorated with teachers' thematic learning aids.
	Teachers use display boards, posters, and student work to create an engaging classroom environment.
	Learning media are developed independently using simple and low-cost materials.
	Students respond positively to the visual and interactive classroom environment.
Infrastructure	The school has limited digital infrastructure, including two LCD projectors, several computers, and shared Wi-Fi.
	Internet connectivity is unstable and does not reach all classrooms.
	Teachers experience challenges in ICT use due to limited devices and technical competence.
	Collaboration with local educational foundations and community organizations provides additional resources such as books and devices.
	Some classrooms lack adequate ventilation and lighting, particularly in older buildings.
	The school implements a device-sharing schedule to ensure equal access among teachers and students.

The findings in Table 2 indicate that it has systematically developed and maintained learning facilities that support student-centered education. The visual and thematic arrangement of classrooms encourages active participation and creates a favorable learning climate. Teachers' initiatives in producing independent learning media demonstrate creativity and adaptability despite limited resources. On the other hand, infrastructure management still faces several challenges, particularly in the adequacy of digital devices and internet connectivity. These constraints affect the optimal use of ICT in classroom activities, although teachers have adopted adaptive strategies such as device sharing and the use of offline materials. The collaboration with local educational foundations and community organizations reflects the school's commitment to resource optimization and stakeholder participation.

Evaluation

The evaluation system at SD Negeri 01 in North Pontianak District reflects a structured, participatory approach aligned with Total Quality Management (TQM) principles. The process is designed to ensure that every educational activity undergoes systematic planning, monitoring, and improvement. Evaluation is conducted periodically at the class, program, and school levels. Each teacher is responsible for recording student progress through assessment forms, observation notes, and performance reports. These data are then discussed during coordination meetings involving the principal, teachers, and school committee members. The principal emphasized, "Evaluation is not only to find mistakes but to identify areas for improvement together." This statement illustrates that evaluation is perceived as a collective learning process rather than an inspection.

The school applies the Plan–Do–Check–Act (PDCA) cycle as a foundation for continuous improvement. In the planning stage, targets for learning achievement and program effectiveness are determined. During implementation, teachers apply the lesson plan's teaching strategies and gather data on student performance. The checking stage involves analyzing results and identifying gaps between targets and outcomes. Finally, in the acting stage, the school formulates corrective actions, which may include revising lesson plans, modifying teaching methods, or organizing follow-up training. This process is documented in the school's Quality Evaluation Report, ensuring that every improvement is evidence-based and traceable.

Parents and community members are also included in the evaluation process. Regular parent meetings are held to collect feedback on student attitudes, discipline, and learning motivation. The school provides communication channels via WhatsApp groups and suggestion boxes to encourage ongoing stakeholder input. A parent noted, "We feel involved because the school often asks for our opinions about our children's progress." This open and inclusive evaluation model strengthens the relationship between school and community, reinforcing the principle of shared responsibility for educational quality.

Evaluation outcomes demonstrate positive impacts on teaching and learning. Teachers become more reflective in assessing their performance and more responsive to student needs. Students show improved engagement, particularly when remedial and enrichment programs are implemented after evaluation. Alumni feedback also confirms the school's progress in developing disciplined and confident graduates. Despite limited infrastructure, the culture of evaluation and reflection has become a key driver of continuous improvement.

Discussion

The findings of this study confirm that Total Quality Management (TQM) has been effectively integrated into the school's management and instructional practices. The results show that Leadership, teacher empowerment, learning facilities, and evaluation are interrelated components that form a continuous cycle of quality improvement. This aligns with Samuel & Farrer (2025), which emphasizes systematic planning, execution, evaluation, and revision in achieving educational quality. The participatory Leadership practiced by the principal strengthens teachers' roles as partners rather than subordinates. This finding supports Anastasiou & Ntokas (2024), who assert that effective TQM in education requires inclusive management, a shared vision, and a collaborative culture among school stakeholders.

Teacher empowerment is a central element that reinforces the TQM framework. The study reveals that internal training, collaborative lesson planning, and peer mentoring activities contribute to teachers' professional growth and institutional accountability. This aligns with the study of Rode et al. (2022), which emphasizes that the heart of quality improvement lies in continuous human resource development. The empowerment practices demonstrate that capacity building is not merely an administrative activity but a strategy to sustain innovation and collective responsibility. Similar patterns were found in research by Tadesse et al. (2024), who concluded that teacher involvement in collaborative planning increases pedagogical competence and enhances student engagement.

Learning facilities and infrastructure also play a significant role in sustaining educational quality. Despite limited digital resources, teachers' creativity and community collaboration have compensated for infrastructural constraints. The finding is consistent with Berhanu & Gobie (2023), who found that limited facilities do not hinder quality improvement when schools apply adaptive management and stakeholder participation. In this study, the school's ability to engage local educational foundations and social organizations in supporting resources reflects the TQM principle of external collaboration for continuous improvement. This practice shows that the school's commitment to quality is not dependent on material sufficiency but on managerial innovation and community trust.

The evaluation system further validates the school's adherence to TQM philosophy. The use of the PDCA cycle ensures that evaluation is continuous, evidence-based, and reflective. Teachers' involvement in data analysis and corrective action planning indicates a shift from hierarchical supervision to collaborative evaluation. This finding resonates with Komljenovic et al. (2025), who argue that continuous feedback and data-driven improvement are core dimensions of educational excellence. The inclusion of parents and alums in the evaluation process demonstrates the democratization of school management, a principle that reflects Islamic educational values emphasizing *musyawarah* (consultation) and shared accountability.

In the broader context, this study reinforces the relevance of TQM as a transformative model for improving the quality of primary education in Indonesia. The case of SD Negeri 01 illustrates that quality management, when implemented through participatory Leadership and collaborative culture, can produce sustainable improvement even in resource-limited settings. The integration of managerial principles with moral and cultural values creates a holistic framework for school development. Therefore, the findings contribute not only to the theoretical discourse on TQM but also to practical insights for policymakers and educational leaders who seek to promote quality assurance in line with national and Islamic educational standards.

CONCLUSION

The implementation of Total Quality Management (TQM) at SD Negeri 01 in North Pontianak District demonstrates that continuous improvement in education can be achieved through participatory Leadership, teacher empowerment, effective resource management, and structured evaluation. The integration of these components forms a sustainable system that links planning, implementation, reflection, and action. The findings show that TQM has been successfully internalized as both a managerial framework and a cultural value, fostering collaboration, accountability, and innovation among teachers and stakeholders. This model ensures that quality is not treated as an external target but as a collective commitment embedded in every school activity.

Practically, the study provides evidence that TQM principles can be effectively adapted in primary schools with limited infrastructure, provided that Leadership is inclusive and evaluation is continuous. Schools are encouraged to strengthen internal collaboration through regular reflection forums, peer mentoring, and partnerships with local communities. Policymakers should support schools in developing consistent but straightforward quality assurance mechanisms that integrate managerial standards with local values and educational ethics. Future research is recommended to expand this study by examining how digital transformation and community-based Leadership further enhance the sustainability of TQM in the Indonesian education context.

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