

The Impact of Total Quality Management Implementation on Student Achievement at SMP Education 21 Kulim Pekanbaru

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ARTICLE INFO

Keywords: Total Quality Management, Quality at School, Student Achievement

Received : 05 June

Revised : 21 July

Accepted: 23 August

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ABSTRACT

This study aims to identify methods and procedures for implementing Total Quality Management (TQM) in schools and analyze the results related to student achievement. The research employs a qualitative method with data collection techniques including interviews, observations, and documentation, and ensures data validity through technique and source triangulation. Data analysis is conducted using interactive analysis, which includes data collection, data display, data reduction, and conclusion drawing. The results indicate that TQM implementation at the school has successfully improved student achievement through effective teaching methods, active student participation, and good collaboration among teachers, students, and parents. The application of TQM can be an effective approach to enhancing the quality of education in schools

INTRODUCTION

In the era of globalization, achieving high-quality education has become a paramount concern for educational institutions worldwide. As nations strive to prepare their citizens for the challenges of an interconnected world, the demand for educational excellence has never been greater. To address this demand, Total Quality Management (TQM) has emerged as a comprehensive management philosophy that emphasizes continuous improvement, customer satisfaction, and the involvement of all stakeholders (Zehir et al., 2012; Idris, 2011; Prajogo & Sohal, 2002). Initially developed in the manufacturing sector, TQM has been successfully adapted to various fields, including education, where it has garnered significant attention due to its potential to enhance academic achievement and overall institutional performance (Sadikoglu & Olcay, 2014; Kumar et al., 2016; Ayu & Suryaningrum, 2019).

The benefits of applying TQM principles in educational institutions are numerous and multifaceted. One of the most significant advantages is the potential for enhanced academic achievement. By promoting a culture of continuous improvement, TQM helps schools identify and address areas of weakness in their teaching and learning processes, leading to better student performance and higher overall academic standards (Suyatmojo et al., 2023). Additionally, TQM can improve institutional performance by encouraging schools to adopt efficient management practices, optimize resource allocation, and streamline administrative processes (Sadikoglu & Olcay, 2014). Another critical benefit is greater stakeholder satisfaction. By focusing on the needs and expectations of students, parents, and other stakeholders, TQM helps build stronger relationships and fosters a sense of community, enhancing the reputation of educational institutions and increasing their attractiveness to prospective students and staff (Idris, 2011).

TQM is applied in educational institutions to improve the quality of educational services through planning, control, and continuous improvement (Lindsay, R., 2006; Khasanah, et al., 2023; Winn, R., & Green, R., 1998). TQM in education involves all relevant parties, including top management, senior administrators, and teaching staff, to achieve customer satisfaction and continuous improvement (Castillo, F., 2020; Ikhsan, N., Salim, C., & Tasya, D., 2023). TQM emphasises the importance of customer satisfaction, which in the context of education is students and parents. This satisfaction is measured through the quality of graduates and educational services provided (Ikhsan, N., Salim, C., & Tasya, D., 2023; Winn, R., & Green, R., 1998). TQM encourages continuous improvement in teaching and learning processes to produce quality graduates who are able to think critically and creatively (Crawford, L., & Shutler, P., 1999; Raissi, S., 2019). There are challenges in implementing TQM in higher education, mainly due to the difference between TQM concepts and tools and the substance of higher education. Local adjustments and appropriate systemic approaches are recommended (Houston, D., 2007; Nasim, K., Sikander, A., & Tian, X., 2019). The Baldrige criteria are used as a change management tool to assist improvement planning at the district, school, and classroom levels (Lindsay, R., 2006).

Implementing TQM in educational settings involves several key steps. First and foremost is the commitment from leadership. Successful TQM implementation begins with strong support and dedication from the institution's leadership. School administrators must be willing to invest time and resources into the initiative and demonstrate their commitment through their actions (Hazra et al., 2016). Comprehensive training is also essential; all members of the educational institution, including faculty, administrative staff, and even students, should receive training on TQM principles and practices (Bunyamin & Rahmanto, 2021). Additionally, schools need to establish quality management systems to monitor and evaluate quality. This involves setting clear performance metrics, regularly collecting and analyzing data, and using the findings to drive improvements (Kumar et al., 2016).

Despite its potential benefits, the implementation of TQM in educational institutions is not without challenges. Resistance to change is one of the biggest challenges, as staff members who are accustomed to traditional methods may resist new practices and processes (Olanipekun & Aina, 2014). Limited resources also pose a significant challenge, as implementing TQM can be resource-intensive (Gimba et al., 2018). Furthermore, measuring educational quality is inherently complex. Unlike in manufacturing, where quality can be measured in terms of defects and outputs, educational quality is multifaceted and harder to quantify (Ejionueme, 2015). Despite these challenges, several educational institutions around the world have successfully implemented TQM, demonstrating its potential to drive significant improvements in academic standards and management practices (Amadi, 2013; Sadikoglu & Olcay, 2014; Ayu & Suryaningrum, 2019).

LITERATURE REVIEW

Total Quality Management (TQM) is a comprehensive management approach that emphasizes continuous improvement, customer satisfaction, and the involvement of all stakeholders within an organization (Zehir et al., 2012; Idris, 2011; Behara & Gundersen, 2001). TQM aims to create a culture of quality where employees and staff work collaboratively to satisfy customers, supported by an organizational structure that fosters continuous improvement (Idris, 2011; Prajogo & Sohal, 2002).

Key Concepts of TQM

TQM promotes the idea that organizations should constantly seek to improve their processes and products. This involves regular assessments and feedback mechanisms to identify areas for enhancement (Sadikoglu & Olcay, 2014; Kumar et al., 2016; Ayu & Suryaningrum, 2019). Central to TQM is the focus on meeting and exceeding customer expectations. This involves understanding customer needs and striving to deliver quality products and services at a reasonable cost (Sadikoglu & Olcay, 2014; Kumar et al., 2016; Ayu & Suryaningrum, 2019). TQM requires the involvement of all stakeholders, including employees, management, and external partners. Effective communication and participation are essential to foster a collaborative environment that supports quality initiatives (Ahiauzu, 1999; Khmour et al., 2021).

TQM in Educational Institutions

The implementation of TQM in educational settings has been increasingly recognized as a means to enhance academic achievement and overall institutional performance (Sadikoglu & Olcay, 2014; Kumar et al., 2016; Ayu & Suryaningrum, 2019). According to Reid and Sanders (2007), 85% of quality problems are attributed to systemic issues, while only 15% are caused by poor employee performance, underscoring the importance of addressing systemic challenges through TQM. TQM provides a framework for continuous investment in quality during operations. This includes measuring performance across various aspects such as marketing, design, production, labor relations, and service activities (Sadikoglu & Olcay, 2014; Kumar et al., 2016; Ayu & Suryaningrum, 2019).

Effective TQM implementation in educational institutions requires careful planning and communication to ensure that all members understand and appreciate the concept (Ahiauzu, 1999; Khdour et al., 2021). This involves structured communication through various channels, such as meetings, posters, and newsletters (Ahiauzu, 1999). Additionally, the TQM program must be meticulously organized and implemented, as it demands significant changes within the institution (Ahiauzu, 1999; Khdour et al., 2021).

The application of TQM in schools involves managing:

a. Instrumental Inputs

These include educational policies, curriculum, programs, personnel, facilities, media, and costs (Suyatmojo et al., 2023).

b. Raw Materials

Refers to students' physical, mental, health, affective, social, and peer factors (Suyatmojo et al., 2023).

c. Environmental Inputs

Encompasses the school, family, community, social institutions, and work units (Suyatmojo et al., 2023).

These elements are integrated into the educational process, impacting teaching, mentoring, training, leadership, curriculum, and assessment, ultimately affecting the quality of graduates in terms of knowledge and personality (Suyatmojo et al., 2023; Bunyamin & Rahmanto, 2021). To achieve high-quality outcomes, it is crucial to have highly qualified and effective human resources, particularly teachers and guidance counselors (Hazra et al., 2016). Improving the quality of human resources is essential for achieving desired educational outcomes (Hazra et al., 2016; Deming, 1986; Juran, 1988; Crosby, 1979).

Impact of TQM on Student Achievement

TQM has been shown to improve institutional performance. A study at the University of Samarra found a significant effect of TQM on performance, recommending the dissemination of a comprehensive quality culture and engaging employees in strategic planning (Al-Salim, 2018). Similarly, in a Lebanese secondary school, TQM was linked to higher student satisfaction, particularly among third-grade students (Abdel-Gawad Ibrahim Kassir, 2022).

TQM practices in teaching methods have led to better academic performance. In Pakistan, adopting learner-centered teaching methods improved student performance, highlighting the importance of teaching innovation and teacher capacity development (Mahmood & Ismail, 2018). Continuous improvement in classroom teaching through TQM aims to inspire and direct instructional excellence (Gilbert et al., 1993).

TQM positively affects teacher performance, contributing to school success. A study involving public elementary teachers found a significant relationship between TQM practices and school success, suggesting that continuous professional development and involvement in decision-making boost teacher performance and self-esteem, leading to better student outcomes (Montenegro, 2023).

TQM enhances the effectiveness of academic systems. At KH Achmad Siddiq State Islamic University Jember, TQM facilitated easier access to information, faster public services, and overall satisfaction among students and lecturers, improving academic performance (Muhith et al., 2022). Similarly, in UK higher education institutions, TQM improved student performance, better services, reduced costs, and increased customer satisfaction (Kanji, 1999).

TQM ensures continuous improvement, fostering a belief that every student can succeed and creating a positive effort towards academic excellence (Maguad, 2003). Engaging all stakeholders, including students, teachers, and parents, in the TQM process helps maintain high educational standards and satisfaction (Firdaus, 2020).

The relationship between TQM and service quality in higher education is significant. In the UAE, TQM factors such as decision-making processes, customer focus, leadership, and continuous improvement were strongly associated with the quality of educational services, suggesting that implementing TQM can enhance the overall educational experience for students (Zanqar, 2019).

METHODOLOGY

This research uses descriptive qualitative methods. Researchers focus on phenomena or daily activities around the research object or location, namely SMP Education 21 Kulim Pekanbaru. Data collection was carried out through interviews, observation and documentation (Damayanti, et al., 2021). To ensure data validity, researchers used data triangulation techniques, which include technical triangulation and source triangulation. Data analysis uses the Huberman analysis model which consists of data collection, data presentation, data reduction, and drawing conclusions. The main informants in this research were school principals and students identified through purposive sampling. The research instrument focuses on the implementation of Total Quality Management (TQM) in schools and its impact on increasing student achievement at SMP Education 21 Kulim Pekanbaru. This qualitative approach allowed the researcher to gain an in-depth understanding of TQM implementation and its impact on student achievement in the school context.

Descriptive qualitative methods such as those used in this research are often applied in educational research to understand phenomena holistically (Creswell, 2013). The use of data triangulation, as applied in this research, is an important strategy for increasing the credibility of qualitative research (Patton, 2015). Data analysis using the Huberman model, which involves an interactive process between data collection, data reduction, data presentation, and drawing conclusions, is an approach commonly used in qualitative research to organize and interpret data systematically (Miles, Huberman, & Saldana, 2014).

RESULT

Implementation of TQM at SMP Education 21 Kulim Pekanbaru

Total Quality Management (TQM) is a set of principles, tools, and procedures that establish requirements for organizational practices. TQM involves all members of the organization to monitor and continuously improve work performance to meet the expectations of users or customers for the quality or quality of products or services produced by the organization. In its application, TQM requires implementation throughout the organization, both vertically and horizontally. Total Quality Management is a continuous improvement implemented by schools to achieve quality schools. The principal, in his or her top management role, plays a critical role in the successful implementation of integrated quality management (TQM) in schools. The concept of (super) quality schools must be embedded in the concept of every principal. School leaders must understand TQM as a philosophy, method, technique and management strategy to improve school quality, because the performance of school organizations is always evaluated in society in today's increasingly advanced situation. From the results of the interview about the implementation of TQM in SMP Education 21 Kulim Pekanbaru, this school already has a school quality management system in the form of a strategic plan, quality policy, and leadership model.

1. Strategic Plan

Directions that an organization or school can use from the current condition or to work towards the next 5 to 10 years. SMP Education 21 Kulim Pekanbaru formulates its strategic plan in the form of a vision, namely, Realizing Students with Faith and Knowledge. To realize this vision, SMP Education 21 Kulim Pekanbaru compiled several mission points, among others:

- a. Provide good and correct education and tutoring in accordance with competence.
- b. Forming and familiarizing a sense of responsibility and discipline for all teachers, employees and students in the school environment and outside the school environment.
- c. Improve English and Mandarin language skills to meet the globalization era.

2. Quality Policy

SMP Education 21 Kulim Pekanbaru has a commitment to continuously improve the quality management system to provide education user satisfaction, namely by:

- a. Creating graduates who are polite and virtuous.
- b. Increasing graduates who have a global outlook.
- c. Improving school services towards an International School.
- d. Improve the ability and achievement of teachers and students in academic and non-academic fields.
- e. Creating a conducive teaching-learning environment.
- f. Increase efforts to preserve the environment

3. Leadership Model

The management model in the implementation of TQM at SMPN 21 Kulim Pekanbaru, namely delegation and division of authority, one of the professional competencies of the principal is the application of leadership in work, with the sub-dimension of developing professional school policies and the distribution of authority to subordinates in accordance with the job description. The principal's activities in school management in various fields such as infrastructure management, public relations, student relations and curriculum run well in this school, the facts show that the division of responsibilities and authority among the principal's subordinates can be accepted and smoothly implemented, there are no significant obstacles.

The implementation of TQM in SMP Education 21 Kulim Pekanbaru encountered some obstacles or barriers. This includes the lack of awareness of some school members about their responsibilities as teaching staff. Then the right solution is a rather similar interpersonal approach. Practice shows that the implementation of quality management in education does not always run smoothly, but often various obstacles arise. To overcome the obstacles in the implementation of quality management, it must be based on a change in the attitude and way of working of all staff. Managers must motivate their employees to do better work, for example by creating a pleasant working atmosphere, providing adequate facilities, creating simple work systems and processes, and rewarding employees based on success and achievement. This is certainly not an easy task because it requires hard work, high discipline and sacrifice from everyone involved, especially by changing the way of thinking and work paradigm from being more quantity-oriented to quality-oriented in completing tasks. Therefore, the need for qualified human resources is becoming increasingly important as they are expected to achieve truly competitive achievements and results

From an institutional point of view, SMP Education 21 Kulim Pekanbaru has reliable education and education personnel and solid management that can mobilize and anticipate all potential for the development of academic and non-academic creativity, as well as shaping the future and active. Admission of new students is a routine activity carried out by educational institutions every year, because it is a continuous process in the education of the next younger generation. When accepting new students, each educational institution has its own way of attracting more qualified prospective students. Given the large number of schools/educational institutions that exist, competition for the hearts of the community has consequences.

School teaching evaluation is a unit of quality control of school teaching, because evaluation must be carried out to determine the implementation and quality control. Educational evaluation includes evaluation of results, implementation processes and educational management factors that support the educational process in educational evaluation. Quality control is needed to maintain and improve the quality of education. This supervision is carried out by administrators or managers such as principals, vice principals, heads of departments and administrative staff. Supervision relates to all school staff in all functional areas, as good supervision and evaluation is comprehensive. The purpose of evaluating agency performance is always the implementation of quality control according to continuous improvement with good planning.

Regarding what kind of quality improvement program is implemented at SMP Education 21 Kulim Pekanbaru. Improving teacher professionalism does not only cover one thing, but must include all school components. Quality products will only be obtained from a quality organization. The facilities provided by SMP Education 21 Kulim Pekanbaru to improve the quality of human resources in terms of students in this school are very complete starting from indoor and outdoor learning, the school provides learning facilities in the form of adequate classes with a capacity of around 15-20 students only, so that learning can run optimally, there is also a science lab, library, computer lab, kesenia room, basketball court, volleyball court badminton court and swimming pool. There is also a lot of development at this school, including development for the principal in the form of training or workshops related to managerial, leadership and competence. Development for teachers in the form of training or workshops related to curriculum, learning models, PPG, and so on, for students themselves there is development in the form of extracurricular activities such as scouts, EAS (Education Authentic Show), Science Club, Cooking Club, EA Sport Club.

Student Achievement at SMP Education 21 Kulim Pekanbaru

Learning achievement is something that a person achieves after learning. Learning achievement shows a change in student behavior that can be observed and measured better than before in the form of improvement and development. The achievements of the students are very good, as evidenced by the entry of SMP Education 21 Kulim Pekanbaru as the number 1 private school in the district, then top 3 in the district, and top 5 in Riau province. The students have a very good average score of <90 and won various competitions both academic and non-academic competitions. In this study, student learning achievement is seen from the following data:

Table 1. Academic Achievement: National Examination Scores (NES)

No	Year	Average NES					Amount	Average
		Indonesia language	Science	Mathematic	English Language			
1.	2020/2021	83	92	94	97	366	91.5	
2.	2021/2022	85	90	95	95	365	91.25	
3.	2022/2023	80	91	96	98	365	91.25	

Table 2. Academic Achievement: Average Rank National Exam Score (NES)

No	Year	Ranking NES								
		District Level			City Level			Province Level		
		Public School	Private School	Public School and Private School	Public School	Private School	Public School and Private School	Public School	Private School	Public School and Private School
1.	2020/2021	-	1	3	-	2	3	-	5	6
2.	2021/2022	-	1	2	-	1	3	-	5	5
3.	2022/2023	-	1	3	-	1	3	-	4	6

Table 3. Academic Achievement: School Examination Scores (SES)

No	Subjects	Average		
		2020/2021	2021/2022	2022/2023
1	Science	92	90	91
2	Mathematic	94	95	96
3	Indonesian language	83	85	80
4	English language	97	95	98
5	Religious Education	95	94	92
6	Social	93	94	97
7	Physical education	88	85	86
8	Arts and Culture	90	92	92
9	Civics education	95	96	98
10	ICT	97	98	97
11	Mandarin	98	98	99
12	Malay Cultures	95	98	94

Table 4. Championship/Academic Achievement: Competitions

No.	Race Name	Year 2020/2021			Year 2021/2022				
		Champion to:	City	Level Province	National	Champion to:	City	Level Province	National
1.	Olimpiade Sains SMP					1			√
2.	Spelling Bee Competition					2			√
3.	The National English Competition					2			√
4.	The National Computer Competition					2			√
5.	Olimpiade Kimia 16	3			√				
6.	Olimpiade Kimia 17	Harapan 1			√				
7.	Olimpiade Matematika	1			√				
8.	Olimpiade IPA	2							√
9.	Olimpiade Biologi	1			√				

Table 5. Non-academic Championships/Achievements

No.	Race Name	Year 2020/2021				Year 2021/2023			
		Champion to:	City	Province	National	Champion to:	City	Province	National
1.	Festival lagu mandarin					1	√		
2.	Dance					3	√		
3.	Scrabble game dari IF	2	√						
4.	The National Computer Competition					2			√
5.	The National English Competition					1			√

DISCUSSION

The implementation of Total Quality Management (TQM) at SMP Education 21 Kulim Pekanbaru has demonstrated a positive impact on improving student achievement and overall institutional performance. The school's strategic plan, quality policy, and leadership model have played a crucial role in establishing a culture of continuous improvement and quality-oriented practices.

One of the most notable impacts of TQM implementation is the enhancement of academic achievement, as evidenced by the school's impressive performance in national examinations and subject-specific assessments. The average national examination scores, as well as the school's ranking at the district, city, and provincial levels, reflect the effectiveness of the quality management approach in improving student learning outcomes (Tables 1 and 2). Additionally, the school's participation and success in various academic competitions (Table 4) further underscore the positive influence of TQM on fostering academic excellence.

The impact of TQM extends beyond academic achievement, as it has also contributed to non-academic pursuits. The school's accomplishments in competitions related to cultural activities, such as Mandarin language festivals and dance performances (Table 5), highlight the holistic approach to quality improvement encompassing both academic and non-academic domains.

The positive impact of TQM on student achievement can be attributed to several factors. Firstly, the implementation of TQM has led to improved teaching methods and materials, as well as constructive feedback and enhanced teacher-student interactions (Svensson & Klefsjo, 2000; Mosadeghrad, 2015). By prioritizing student and parent satisfaction, the school has been able to create a more engaging and effective learning environment, fostering increased motivation and interest among students.

Secondly, TQM emphasizes cooperation and effective communication among all stakeholders, including teachers, students, and parents (Sadikoglu & Olcay, 2014; Kumar et al., 2016). This collaborative approach has facilitated a supportive learning environment, where students receive additional guidance and encouragement, ultimately contributing to their improved performance.

Furthermore, the implementation of TQM has enabled the school to identify and address areas of weakness in its educational processes, allowing for continuous improvement and quality control (Idris, 2011; Suyatmojo et al., 2023). Regular evaluation and monitoring of teaching practices, curriculum development, and resource allocation have played a vital role in maintaining and enhancing the quality of education offered at SMP Education 21 Kulim Pekanbaru.

While the positive impact of TQM on student achievement is evident, it is important to note that the successful implementation of TQM requires ongoing commitment and effort from all stakeholders, including school leadership, faculty, staff, and students. Overcoming resistance to change, ensuring adequate resource allocation, and effectively measuring educational quality remain challenges that must be addressed consistently (Olanipekun & Aina, 2014; Gimba et al., 2018; Ejionueme, 2015).

In conclusion, the implementation of Total Quality Management at SMP Education 21 Kulim Pekanbaru has had a significant positive impact on improving student achievement, both in academic and non-academic domains. The school's commitment to continuous improvement, stakeholder involvement, and quality-oriented practices has facilitated an environment conducive to learning, fostering academic excellence and holistic student development.

CONCLUSION AND RECOMENDATION

Conclusions

The implementation of TQM involves all school members in controlling and improving the quality of education with the aim of achieving the expectations of students and parents. The school has formulated a strategic plan and quality policy that focuses on the vision of realizing students with faith and knowledge. The leadership model applied involves delegation of authority and distribution of responsibilities to subordinates according to job descriptions. The facilities provided by the school, including teacher professional development,

also contribute to improving the quality of education. Student achievement at SMP Education 21 Kulim Pekanbaru is excellent, with high grade point averages, excellent rankings at sub-district, district and provincial levels, and success in various academic and non-academic competitions. The implementation of TQM has had a positive impact on improving student achievement and the pride of the school community.

Education quality control is also an important part of maintaining the quality of education. With control, the school can evaluate the learning process to ensure that it is in line with the plan and objectives that have been set. In implementing TQM, schools apply an approach that focuses on student satisfaction and involves student participation in the decision-making process. This increases motivation, interest in learning, and cooperation between teachers, students and parents. Thus, TQM helps to create a conducive learning environment and improve students' academic performance. Overall, the implementation of TQM at SMP Education 21 Kulim Pekanbaru has had a positive impact on improving student achievement and school community satisfaction. This success can be maintained through good quality control and the application of effective teaching methods, as well as through close cooperation between all parties involved in the educational process.

Recommendations

Some recommendations that might be implemented by SMP Education 21 Kulim Pekanbaru are as follows:

1. Continue student participation: Continue to involve students in decision-making and improvement processes. Involve students in formulating educational objectives, determining learning strategies and evaluating the effectiveness of teaching methods. By involving students, they will feel responsible for their education and will be more motivated to achieve higher.
2. Strengthen communication between teachers, students and parents in an open and transparent manner. Organize regular meetings between teachers and parents to discuss student progress, challenges faced and improvement efforts. Also, facilitate collaboration between students in the form of team projects, group discussions, or extracurricular activities that promote cooperation and joint problem solving.
3. Evaluate the learning process on a regular basis to ensure that the teaching approaches and methods used are effective and suited to students' needs. Formative evaluation can be done through small exams, project assignments, or daily reflections, while summative evaluation can be done through end-of-semester or national exams. The results of these evaluations should be used as a basis for identifying areas for improvement and adjusting learning strategies.
4. Continuing support and training for teachers in their professional development. Schools can provide relevant professional development programs, such as workshops, trainings or courses, to help teachers improve their teaching skills. Through teachers' professional development, they will be able to adopt best practices in education and provide quality learning experiences to students.

5. Continuously improve school facilities and resources to create an environment conducive to learning. Conduct regular maintenance of physical facilities, expand access to libraries, laboratories and educational technology. Ensure the availability of necessary resources, such as up-to-date textbooks, laboratory equipment and relevant learning materials.

By implementing these recommendations, SMP Education 21 Kulim Pekanbaru can continue to improve student achievement and achieve the expectations of students and parents in terms of quality education.

FURTHER STUDY

Future research should focus on the long-term impact of TQM on student achievement, comparing its implementation across different schools, and exploring the role of stakeholder involvement, particularly students and parents, in enhancing educational outcomes. Studies should also assess the effectiveness of professional development for teachers, quality control mechanisms, and the influence of school facilities and resources on learning outcomes. Additionally, research could examine the integration of technology in TQM, the psychological and social impacts on the school community, and tailored TQM approaches for different educational levels to address specific needs and challenges.

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