

Impact of Total Quality Management Toward Education Quality at Vocational School

Venny Wismayanti¹, Isjoni², Azhar³

¹ Universitas Riau, Pekanbaru, Indonesia; venny.wismayanti7686@grad.unri.ac.id

² Universitas Riau, Pekanbaru, Indonesia; isjoni@lecturer.unri.ac.id

³ Universitas Riau, Pekanbaru, Indonesia; azhar@lecturer.unri.ac.id

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ABSTRACT

In response to global challenges, education systems must develop high-quality human resources capable of competing internationally. Total Quality Management (TQM) is proposed as a strategic approach to improve educational outcomes, particularly in Vocational High Schools (SMK). This qualitative study employed a case study method involving three informants: a school principal, a teacher, and an administrative staff member. Data were gathered through interviews, observations, and document analysis. The data were analyzed using data reduction, data presentation, and conclusion-drawing techniques. The findings indicate that TQM implementation contributes to enhancing education quality in vocational schools. The evaluation focused on three key indicators: leadership management, teacher performance, and school administration. Leadership and teacher management were found to be well-executed, particularly in teaching and learning activities. However, administrative functions were only categorized as adequate, highlighting the need for improvement in this area. The application of TQM demonstrates positive impacts on school management and instructional practices. While leadership and teaching practices align with quality standards, administrative processes require further development to support comprehensive school improvement. TQM can effectively enhance educational quality in vocational high schools, but successful implementation depends on strengthening administrative management alongside instructional and leadership practices.

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Corresponding Author:

Venny Wismayanti

Universitas Riau, Pekanbaru, Indonesia; venny.wismayanti7686@grad.unri.ac.id

1. INTRODUCTION

In the face of the global era of 5.0, where technology, innovation, and interconnectedness dominate, countries worldwide are required to develop human resources capable of competing internationally. This evolution necessitates a paradigm shift in education systems, with quality education becoming a crucial foundation for sustainable development. Education is not merely the responsibility of schools or the state but a shared obligation involving families, communities, local

governments, and national authorities (Koslowski, 2006). Despite collective efforts, many countries still struggle to produce graduates who meet global standards or the expectations of modern society.

In Indonesia, the quality of education continues to be a critical issue. Various indicators reveal persistent gaps, particularly concerning graduate competency, employability, and alignment with industry needs. The situation is more evident in vocational high schools (*Sekolah Menengah Kejuruan*, SMK), which are designed to prepare students for specific careers. However, these institutions often fall short of equipping students with the competencies demanded by the labor market. This discrepancy results in an oversupply of graduates who are not job-ready, further contributing to the nation's unemployment problem. According to data from the Central Statistics Agency (Badan Pusat Statistik [BPS]), as of February 2022, Indonesia's open unemployment rate reached 8.40 million people. Vocational school graduates made up the largest portion of this figure, with an unemployment rate of 10.38%—higher than that of general high school or university graduates (CNBC Indonesia, 2022).

This alarming statistic suggests that vocational schools are not effectively bridging the gap between education and employment. The competencies of graduates often do not match the evolving demands of the business and industrial sectors (Dunia Usaha dan Dunia Industri, DU/DI). Two primary factors contribute to this challenge: (1) the competencies taught in schools are either below industry standards or outdated, and (2) limited employment opportunities align with the skills offered by vocational schools. In essence, the system fails to deliver quality education that meets both student potential and labor market needs.

Moreover, the development of human resources through the educational system is not only lacking in terms of professional competency but also in aspects of character, such as morality, ethics, and national identity. This holistic inadequacy compromises the nation's capacity to advance and uphold its cultural and moral foundations. The shortcomings in graduate outcomes highlight deeper systemic issues, including inadequate school leadership, underperforming teachers, incomplete infrastructure, and poorly managed administrative functions.

In response to these multidimensional problems, the Indonesian government has taken various strategic steps to enhance educational quality. One such initiative is the encouragement of Total Quality Management (TQM) implementation within educational institutions. TQM, originally developed in the manufacturing and business sectors, emphasizes a culture of continuous improvement, customer satisfaction, stakeholder involvement, and systematic quality assurance (Sallis, 2012). The concept has been adapted for the education sector to drive institutional reform and ensure the consistent delivery of high-quality education.

According to Risa, Abdul, and Muhtarom (2020), TQM in education aims to optimize internal processes by engaging all stakeholders—including principals, teachers, students, parents, and administrative staff—in efforts to improve learning outcomes. TQM is not a one-time initiative but a cultural shift that requires sustained commitment and integrated practices across all levels of the institution. When effectively implemented, TQM transforms schools into dynamic, responsive organizations capable of adapting to changes and meeting the needs of their "customers," including students and the broader society.

Sallis (2021) outlines several core components of TQM in the educational context: continuous improvement, determination of quality standards (quality assurance), cultural transformation, and organizational restructuring—often referred to as creating an "upside-down organization." This model decentralizes authority and empowers educators and staff at all levels, fostering a collaborative environment where quality becomes a shared responsibility. These principles align closely with the objectives of Indonesia's National Education Standards (SNP), established under Government Regulation No. 19 of 2005, which seeks to create a consistent framework for achieving quality national education.

Despite the clear theoretical and policy foundations for TQM, practical implementation remains a challenge. Based on observations at a vocational high school in Pekanbaru, several issues undermine the quality of education: the school leadership has yet to implement an effective management system

fully, teacher performance lacks consistency and measurable outcomes, facilities are incomplete or outdated, and administrative systems are disorganized. Rather than focusing on improving educational quality, the institution has prioritized increasing student enrollment and enhancing teacher competence. This narrow focus has led to fluctuating enrollment trends and limited improvements in graduate outcomes. These challenges highlight the urgent need for a holistic, structured quality management system like TQM.

The application of TQM in education involves four strategic principles: (1) improving the student admission process to ensure better alignment with educational goals, (2) ensuring customer (student and parent) satisfaction through relevant, engaging, and effective instruction, (3) fostering continuous improvement across teaching, administration, and leadership, and (4) actively involving all stakeholders in school governance and development (Fahrudin, 2020). These principles reinforce the idea that quality is not a fixed destination but an ongoing process requiring commitment, collaboration, and innovation.

Riyadi, Subekti, and Hidayat (2021) further emphasize that TQM involves the integration of all elements within the educational environment. This includes school leaders who are vision-driven, teachers who are performance-focused, support staff who understand quality service, and students who are engaged in their learning. When implemented consistently, TQM can raise institutional performance levels and improve stakeholder satisfaction.

Given the urgent challenges faced by vocational schools and the promising framework provided by TQM, this research aims to explore the impact of TQM implementation on the quality of education in vocational high schools. By examining the practical application of TQM principles, this study seeks to uncover both the strengths and barriers within school systems and provide recommendations for improvement. Ultimately, the findings are expected to contribute meaningfully to the discourse on educational reform and support the advancement of vocational education in Indonesia.

2. METHODS

This research uses a descriptive qualitative approach with a case study method. This approach is used with the consideration that the author can examine in more depth the symptoms and things that occur as a result of a method or procedure in the environment being studied, in this case, related to the implementation of Total Quality Management at SMK Dwi Sejahtera Pekanbaru. The research was carried out in three stages, namely (1) the preparation stage, namely initial observation and proposal writing; (2) the implementation stage, consisting of data collection and data reduction; (3) and the final stage, namely data analysis, writing down research results and drawing conclusions.

Informants or research subjects are school principals, teachers/educating staff and administrative staff. Then, the data collection technique was carried out in three stages: documentation, observation, and interviews. (1) documentation in this research is in the form of (a) Foundation Decree; (b) Vision, mission and goals; (c) Standards and guidelines; (d) Principal work program; (e) Organizational Structure; (f) School policies; (g) Follow-up report on the results of the implementation of Total Quality Management; and (h) monitoring and evaluation. (2) observation, carried out to see the suitability or suitability between the available documents and school conditions. (3) interviews. Interviews are conducted in depth to gather information from informants or people who are considered knowledgeable about the problems being discussed in the research related to documentation and observations that have been carried out previously. Furthermore, the data analysis techniques used are data reduction or data collection, data presentation and drawing conclusions. Then, a decision-making technique was carried out based on the findings of this research using the categories: very good, good and quite good.

3. FINDINGS AND DISCUSSION

From the research results, the author found that the implementation of Total Quality Management in improving the quality of education can be said to have had a positive impact or is already in the good category. This can be seen from the management of the school principal in carrying out his function as leader and manager, who received a positive response, even though the work program was perfect for implementation. Likewise with teacher management, by the Independent Curriculum which is currently being promoted, there has been an extraordinary response from teachers to become more developed and professional. Continuous improvements are made so that teacher competence is honed and directed according to school demands to improve the quality of education. Even for school administration, the movement is fast, with the help of administrative staff from teachers, so the management and archiving of school documentation is better and clearer.

3.1 Managerial Leadership in the Implementation of Total Quality Management

The findings of this study indicate that school principals demonstrate effective leadership in implementing Total Quality Management (TQM), placing them in the "good" category of managerial competence. This assessment is based on their ability to carry out core management functions: planning, organizing, actuating, and controlling. These capabilities reflect intelligent leadership practices that align with the principles of TQM.

Data analysis reveals that school leaders actively develop strategic plans for school activities, including the formulation of the institution's vision, mission, and goals. Additionally, principals are involved in designing programs that aim to enhance school quality, such as school development plans and initiatives specifically aligned with TQM standards.

The organizational capabilities of the principals are evident in the establishment of a well-structured organizational hierarchy, the formulation of clear policies, and the strategic utilization of human resources. In the implementation phase, principals guide the school's operations according to established Standard Operating Procedures (SOPs) and foster a collaborative environment that supports the professional growth of teachers and staff. This collaborative approach is rooted in the goal of continuous school improvement through the application of TQM.

Furthermore, principals consistently seek to enhance the competence of teaching staff by involving them in professional development activities such as workshops and training sessions. As managers, they effectively execute their roles by clearly delegating responsibilities and dividing tasks among educators and administrative personnel. This clarity in role distribution contributes to the efficient functioning of the school and supports the overarching objective of improving educational quality through structured quality management practices.

The managerial leadership of SMK Dwi Sejahtera Pekanbaru is oriented towards the management of the educational process, which is carried out in short-term, medium-term and long-term plan work programs which include planning, implementation, organizing and supervision. I also want to be able to act as a leader and manager of human resources management (HRM), which aims to prepare personnel who will manage the educational process, whether teachers or teaching staff, who focus on good school governance work systems. Carried out in accordance with the core needs for continuous improvement, what will be revised and the strategies implemented related to improving the quality of school education.

The principal plays a key role in the progress of an educational institution. Liebowitz and Porter (2019) and Hallinger & Lee (2013), state that principals as school leaders hold a position that has a large role in maintaining and improving the quality of learning in schools. In carrying out their duties, the principal plays the role of educator, manager, administrator, supervisor and entrepreneur (Sutikno, Y. 2022).

The findings of this study reveal that the school principal plays a pivotal managerial role in implementing Total Quality Management (TQM), demonstrating effective leadership in planning,

organizing, directing, and supervising educational activities. As a manager, the principal has taken tangible steps to establish a structured school organization, develop educational programs, and engage teaching staff in continuous improvement initiatives. These efforts are consistent with the principles of TQM, which emphasize comprehensive planning, stakeholder involvement, and ongoing development (Anjani & Dafit, 2021).

One notable contribution of the school principal is the establishment of an organizational structure that supports the goals of quality education. The principal actively invites parents to participate in school committee programs, coordinates the planning of curriculum implementation, and aligns teaching and learning processes with quality standards. Moreover, the principal supervises various stages of the student journey—from admission to graduation—and serves as a role model by maintaining professionalism and composure in the workplace. Appreciation and motivation are provided regularly, both in moral and material forms, while educators are encouraged to engage in professional development and lifelong learning (Anjani & Dafit, 2021).

The research also identifies several key managerial strategies employed by the principal to improve educational quality. These include (1) conducting internal and external environmental analyses to formulate the school's vision, mission, and strategic goals; (2) designing action plans based on these analyses; (3) identifying strengths, weaknesses, opportunities, and threats (SWOT analysis); and (4) setting measurable goals to produce students who are active, creative, innovative, and capable of excelling in academic and non-academic domains (Hafid & Barnoto, 2022; Saputro & Darim, 2022).

The principal also demonstrates strong administrative leadership by overseeing educational management, facilities, infrastructure development, and resource allocation. These responsibilities are aligned with the core functions of planning, organizing, directing, and controlling—an integrated approach that reflects intelligent leadership in accordance with TQM principles.

However, despite these positive findings, the study also reveals some gaps. Interviews with school stakeholders indicate that while the principal has developed comprehensive school activity plans—including the formulation of the vision, mission, goals, and quality improvement programs—these were created primarily within the internal school environment. External stakeholders such as parents, community leaders, and representatives from industry (DU/DI) were not actively involved in the planning process. As a result, the plans may not fully address the real needs and expectations of the broader educational community. This limitation supports the findings of Amon and Harliansyah (2022), who argue that inclusive strategic planning involving all relevant parties is essential to improving school quality and achieving sustainable outcomes.

Another area of focus in the findings is the school principal's role in human resource management. The principal has demonstrated an ability to organize staff through the development of policies, a clear organizational hierarchy, and strategic use of human capital. While these systems are still being refined, the principal is making consistent efforts to build a cohesive team and encourage collaboration across all roles. TQM has been introduced as an organizational approach, though its full implementation requires more time, effort, and alignment among all staff members.

In terms of coordination, the principal has taken steps to direct school operations according to established Standard Operating Procedures (SOPs). Teachers and staff are supported through structured programs aimed at professional growth and school improvement. Nevertheless, the research found that not all teachers fully understand or apply TQM practices as intended. Some staff members have yet to align their actions with the principal's strategic direction, which echoes the findings of Tambe et al. (2019), who emphasize the importance of school leaders in ensuring team coordination and the successful execution of institutional goals.

Supervision and evaluation are also critical components of the principal's managerial role. The findings show that while the principal has conducted supervision activities, there is inconsistency in their execution. Some supervision is conducted directly in line with planned schedules, while other activities are only reported as completed, with no evidence of actual implementation. This discrepancy raises concerns about the integrity of monitoring and evaluation practices. Sabila, Bahtiar, and Yakin (2023) argue that effective school leadership is evident not only in planning but also in the consistent and transparent execution of supervision, aimed at measurable school improvement.

Based on documentation analysis, observations, and interviews, the study concludes that while planning and management structures are generally in place and aligned with TQM principles, there is limited involvement of external stakeholders in decision-making. Many strategic decisions appear to be made solely by the school principal and foundation, resulting in less inclusive and potentially less effective planning outcomes.

In summary, the implementation of TQM by the school principal is characterized by good, structured, and responsible leadership. The principal has made commendable progress in applying managerial functions to improve educational quality. However, for TQM to reach its full potential, further efforts are needed to foster broader stakeholder participation, enhance teacher understanding of TQM practices, and strengthen supervision mechanisms to ensure accountability and transparency.

3.2 Teacher Management in the Implementation of Total Quality Management

Teacher management in the implementation of Total Quality Management (TQM) is reflected in several key areas: the teacher's ability to effectively plan the teaching and learning process, their initiative to enhance the quality of education, their motivation to develop professional competencies, their problem-solving skills in addressing classroom challenges, and their capacity to integrate TQM principles into instructional practices.

Based on the results of the documentation, observations and interviews that have been carried out, it was found that in management, the implementation of their duties as teachers during the teaching and learning/PBM process was good, complete and responsible because they had implemented TQM to improve the quality of education in their schools.

The management of teachers at SMK Dwi Sejahtera Pekanbaru in carrying out their duties as teachers during the teaching and learning process is good, the administration is complete and professional because the teachers have implemented TQM to support improving the quality of education in schools. This can be seen from personal competencies that continue to be developed and learning tools that are always improved according to curriculum developments.

Teachers have a very important role in determining the quality of a school. Widodo, W., & Sriyono, H. (2020) stated that teachers play an important role in improving school quality. A professional teacher is required to be able to deliver lesson material well, effectively, efficiently, and pleasantly so that students understand and comprehend what the teacher is conveying. To achieve all of this, a teacher must be able to develop his capacity by following developments in industry, science and technology, personal development, and others. The development of science and technology requires teachers to constantly update their competencies and skills in carrying out learning (Nuryani, D., & Handayani, I., 2020).

Based on the author's findings from the author observations on documentation, observations, and interviews related to teacher management regarding teacher management in the Total Quality Management concept, the author can explain that in management, the implementation of his duties as a teacher during the teaching and learning/PBM process is good, complete and responsible because they have implemented TQM to improve the quality of education in their schools. Previously, teachers only played the role of conveying knowledge to students, but now teachers are required to be able to become facilitators, motivators, inspirers, mentors, developers of imagination,

creativity, and character values, as well as *teamwork* and social empathy (Nuryani, D., & Handayani, I., 2020).

Teacher management aims to utilize educational staff effectively and efficiently to achieve optimal results in pleasant conditions (Aprilianto et al., 2021; Sutrisno & Nasucha, 2022). Kartiko (2023) states that teachers are an important asset. Based on this, it can be seen that teacher management in implementing TQM is a must for the school principal.

Hard work and maximum effort are needed from school leaders, fellow teachers, and other school assets so that the implementation of TQM reaches all lines of school assets. All of this cannot be separated from the planning, organization, implementation, and supervision of the teacher himself personally, colleagues, and the principal as the top leader in the education unit. Several things can be done to increase teacher competence in improving the quality of education, namely: (1) always inspire and motivate teachers to continue learning independently; (2) encourage teachers to participate in various educational and teaching activities; (3) encourage teachers to innovate; (4) bridging teachers to participate in discussion forums; (5) accountability; (6) creating a conducive work climate; and (7) giving rewards, (Widodo, W., & Sriyono, H., 2020)

3.3 School Administration in Total Quality Management

School administration is all joint efforts to utilize resources, both personal and school infrastructure, effectively and efficiently to support the optimal achievement of educational goals at school. School administration must be practical and flexible so that it can be implemented according to real conditions and situations in the school.

The results of the research show that the implementation of TQM, as seen from the school administration is starting to be good. The filing is complete and organized, and they are responsible for it because they have started implementing TQM to improve the quality of education in schools.

The school administration at SMK Dwi Sejahtera Pekanbaru is quite good at implementing school administration because it has begun to complete and organize its archiving and administrative management in an effort to support improving the quality of education at the school.

A school is a component that is interconnected between one component and another, one of which is school administration. School administrative management is an important aspect of running the school effectively and efficiently. School management or administration is a factor that can influence the quality of education (Uhansyah, U. 2017). Then Razi et al. (2022) also stated that administration is one of the elements needed to improve the quality of schools in general.

School administration is all joint efforts to utilize resources, both personal and school infrastructure, effectively and efficiently to support the optimal achievement of educational goals at school. School administration must be practical and flexible so that it can be implemented according to real conditions and situations in the school. Several aspects included in school administration management are financial management, personnel management, facilities and infrastructure management, student data management, and management of various school activities, (Andriani, N., & Hidayat, M., 2023).

Based on the results of administrative management interviews in the *Total Quality Management concept*, management's implementation of its duties as administration is categorized as adequate. Since the introduction of TQM in the management of school administration, it looks like it is starting to get better, with complete and orderly filing and is responsible for starting to implement TQM to support improving the quality of education in schools, which can be proven by documentation and direct observation regarding administrative management in vocational schools.

Even though there are still many shortcomings and improvements here and there, at least there is effort and effort in improving it. That is why one of the teachers is assigned as an administrative staff to facilitate and organize school administration to make it better. Furthermore, due to the age and condition of the head of administration, the process of adding administrative staff is accelerated so that management using TQM can immediately become a good administration.

3.4 Follow up on the results of the Implementation of Total Quality Management to improve the quality of education

Based on the results of document analysis, direct observation, and interviews with school principals, teachers, and administrative staff, it can be concluded that the implementation of Total Quality Management (TQM) at Dwi Sejahtera Vocational School in Pekanbaru is approaching full integration. Although not yet perfect, TQM has been widely adopted across the school's administrative and instructional functions. This near-complete implementation reflects the institution's commitment to adapting its quality management practices to meet the evolving demands of education and workforce readiness.

As educational quality standards continue to evolve, schools must implement integrated quality management systems to remain relevant and effective. Suryadi (2009) emphasizes that three key elements are essential to achieving integrated quality: management, people, and systems/processes. These components must work in harmony for TQM to be successful. In line with this view, school leaders at Dwi Sejahtera have developed quality policies, planned strategic achievements, allocated necessary resources, and actively monitored the progress of their initiatives.

One of the core practices adopted by the school principal is analyzing TQM implementation reports, particularly those related to teacher supervision. These reports include teacher performance mapping, which helps inform strategies for instructional improvement and professional development. This analytical approach ensures that quality improvement initiatives are based on empirical data and aligned with TQM principles.

Human resources—teachers, administrative staff, laboratory personnel, librarians, and students—play a central role in achieving educational quality. As both the agents and beneficiaries of TQM, they must embody a shared awareness, commitment, and responsibility for maintaining high standards. Their active participation is critical in realizing the institution's quality objectives. Establishing a strong quality system that aligns with internal processes and utilizes the institution's available resources is essential to achieving these goals. Continuous improvement is fostered by leveraging the strengths of the school community and reinforcing a culture of excellence.

As part of the feedback and reinforcement mechanism, the school principal provides recognition and appreciation to staff members whose performance meets or exceeds the defined standards. This recognition not only motivates individuals but also reinforces the organizational culture of quality.

A major supporting factor in the school's implementation of TQM is the national policy framework. Specifically, the Ministry of Education, Culture, Research, and Technology's Regulation No. 16 of 2022 concerning the Independent Curriculum Process Standards (covering PAUD, SD, SMP, SMA, and SMK) supports decentralized management in schools. This regulation empowers schools to design and implement their own programs and assignments in alignment with national educational process standards. It offers the flexibility needed to implement school-based innovations like TQM, making it a valuable enabling factor at Dwi Sejahtera Vocational School.

However, the study also identifies several barriers that hinder optimal TQM implementation. One of the primary challenges is the lack of adequate dissemination and outreach regarding TQM principles and processes. Many school stakeholders, including teachers and administrative staff, are not fully aware of the concept or its importance. This lack of understanding contributes to a general absence of commitment and support from some members of the school community. Furthermore, transforming organizational culture to align with TQM principles is a gradual process that requires consistent effort and time. As a result, the desired cultural shift has not yet been fully realized.

In summary, while Dwi Sejahtera Vocational School has made significant strides toward implementing Total Quality Management, there are still areas for improvement. Strengths include

leadership commitment, structured planning, and policy support, while challenges involve limited stakeholder engagement, lack of awareness, and the long timeline required to foster a culture of continuous quality improvement. Moving forward, strengthening outreach efforts, promoting shared ownership of the TQM process, and maintaining long-term commitment will be crucial for achieving sustained educational quality.

4. CONCLUSION

This study concludes that the implementation of Total Quality Management (TQM) in Vocational High Schools (SMK) contributes positively to improving overall educational quality. The research findings indicate that TQM principles have been effectively applied across three key areas: school leadership, teacher management, and administrative functions. The principal has demonstrated strong managerial capabilities, particularly in planning and executing the school's vision, mission, and goals. Teacher performance has shown alignment with TQM strategies through professional engagement and commitment to continuous improvement, while school administration has played a crucial role in supporting institutional operations and quality assurance. However, the study is limited in scope as it focuses on a single vocational school, which may not fully represent broader educational contexts. Additionally, some stakeholders have not yet fully adopted or understood TQM practices, which could influence the consistency of implementation. Future research is encouraged to expand this investigation by exploring different school settings, both public and private, and by examining additional indicators of educational quality. Such studies could provide more comprehensive strategies for enhancing TQM practices and further advancing school effectiveness.

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