

Measurement of Total Quality Management (TQM) in Education

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Abstract: *The integration of Total Quality Management (TQM) within the educational sector is aimed at enhancing the overall quality of learning processes and outcomes. TQM is grounded in the principle that ensuring quality is a shared responsibility involving every stakeholder engaged in the education system. This study employed a library research method, which involves gathering and analyzing scholarly literature that focuses on how TQM is measured and implemented in educational settings. Several critical factors influence the successful application of TQM, including strong leadership from the school principal, active involvement of all stakeholders in the educational environment, the presence of a reliable and efficient system for evaluation and measurement, and the consistent provision of professional development and training for school personnel. Effective TQM implementation requires long-term commitment and continuous improvement efforts to fulfill the educational mission of providing satisfaction not only to students but also to parents and the broader community. Moreover, the success of TQM in educational institutions is significantly driven by the collaborative partnership between schools, families, and the community. These three pillars must operate in synergy to support the sustainable growth and advancement of the school. In light of this, the study emphasizes the need for accurate and comprehensive tools to assess the implementation of TQM in educational environments. Through such measurement, institutions can determine whether their quality management strategies are effectively contributing to institutional success or if further improvements are necessary.*

Keywords : *Implementation, Implementation, Measurement, Total Quality Management (TQM)*

INTRODUCTION

The enhancement of education quality must be carried out in a consistent and ongoing manner. Education, in terms of its function, represents one of the critical pillars in a nation's development. High-quality education is also essential in producing competent and capable human resources. Total Quality Management (TQM), also known as Integrated Quality Management, refers to a strategic approach in management that emphasizes quality awareness across every process within an organization (Abd Rahim Romle, Zakaria, Zakinuddin, Zolkepli, & Daud, 2024). TQM serves as a quality-oriented management method that relies on the active involvement of all individuals within an organization and aims to achieve sustainable success by ensuring customer satisfaction and shared benefits for both members of the organization and the broader community. TQM is among the prominent frameworks or techniques utilized to enhance educational quality in academic institutions. It is considered one of the crucial success factors in achieving the most effective educational objectives. Within the educational sphere, quality improvement is influenced by numerous variables, such as educators, staff, learners, curriculum design, instructional activities, funding availability, institutional governance, and various other contributing factors (Sohel-Uz-Zaman, 2023).

The evaluation of Total Quality Management (TQM) is a procedure used to determine how effectively an organization adopts TQM principles, and how far it progresses toward achieving its quality-related objectives. Applying Total Quality Management (TQM) within the field of education entails initiatives to enhance the comprehensive quality of education, encompassing both the learning-teaching activities and the administration of educational institutions. This study intends to investigate and explain the process through which TQM evaluation in the educational sector is implemented.

METHODS

The research method applied in this study was library research, which referred to an approach involving the collection of data or scholarly works related to the research subject or analysis conducted

to address a particular problem, essentially focusing on a thorough and critical examination of literature sources associated with the assessment of TQM in the field of education.

RESULTS AND DISCUSSION

ASPECTS OF TQM MEASUREMENT IN EDUCATION

1. Customer Satisfaction

Customers are the people who use our services to meet the demands of their needs, and we need them to be able to run the institutions or bodies we manage. The definition of customer satisfaction according to Kotler, Burton, Deans, Brown, & Armstrong, (2022) is the sense of satisfaction or dissatisfaction emerges after evaluating the product's perceived performance (or result) against the performance (or outcome) that was initially anticipated. A customer is considered satisfied with a product or educational service if the experience gained from the product/service matches or even surpasses the customer's original expectations.

a. Four Methods of Measuring Customer Satisfaction

Achrol & Kotler, (2021) stated that there are four methods to measure customer satisfaction, namely:

- 1) Feedback and Complaint Mechanism. Every customer-oriented business must allow its clients to share feedback, opinions, and grievances. Numerous hotels and restaurants offer forms enabling guests to express their preferences and concerns. This stream of input often generates valuable insights, enabling businesses to take swift action in addressing emerging issues.
- 2) Customer Satisfaction Evaluation. Relying solely on feedback and complaint channels does not provide a comprehensive picture of customer satisfaction or dissatisfaction. Proactive businesses assess customer satisfaction by performing routine surveys. They distribute questionnaires or call a random sample of customers to gather their perceptions of various aspects of the company's operations. Additionally, customers are asked to share views on how rival companies are performing.
- 3) Mystery Shopper Technique. This strategy involves recruiting individuals (mystery shoppers) to simulate the role of buyers or potential clients of rival firms, reporting on both strengths and weaknesses encountered during their purchasing experience. These mystery shoppers can also monitor how complaints are managed in practice.
- 4) Analysis of Former Customers. It is important for companies to reach out to former clients who have ceased buying or switched to competitors in order to understand the reasons behind their departure, allowing the company to design appropriate corrective or improvement strategies.

b. Factors Affecting Customer Satisfaction

According to Lupiyoadi & Hamdani, (2023) states that there are 7 factors that affect customer satisfaction, namely:

- 1) Product
Determining which products to offer consumers is essential. The primary focus lies in the product's quality. Consumers are not merely purchasing the physical item but also the benefits and perceived value associated with that product.
- 2) Price
The pricing set for a product or service plays a critical role in delivering value to consumers, influencing the product's or service's image, and impacting customer satisfaction. Pricing decisions are linked to consumer income levels and also affect market supply.
- 3) Location (Place)
This concerns how the distribution system is executed, combining decisions about placement and distribution channels—how products reach customers and identifying strategic locations for optimal accessibility.
- 4) Promotion
This involves determining the appropriate promotional approach (selection of the promotional mix). Effective promotional efforts will undoubtedly influence consumer satisfaction positively.
- 5) People

This refers to the quality of personnel involved in service delivery, encompassing recruitment, training, motivation, and human resource management. In order to ensure top-tier quality, staff must be trained to understand that customer satisfaction is the top priority.

6) Process

This focuses on how services are operated, combining various elements such as procedures, workflows, mechanisms, and routine tasks—where the service is created and delivered to the end consumer.

7) Physical Evidence

This pertains to the physical environment, including appearance of facilities, tools, locations, and means of communication that support service delivery.

c. Customer Satisfaction Indicators

According to Tjiptono, (2024) the indicators that shape consumer satisfaction consist of several aspects as follows:

1) Expectations Fit

It is the level of conformity between the performance of services expected by consumers and those felt by consumers.

2) Interest in Returning Visits

This is related to the willingness of consumers to revisit or reuse related services.

3) ReadinessRecommend

It is the willingness of consumers to recommend services that have been felt to friends or family.

2. Quality of Teaching and Learning

In general, quality refers to the overall description and attributes of products or services that reflect their capacity to meet both expected and implied needs. Within the educational context, the concept of quality encompasses inputs, processes, and outcomes (Devi, 2021). The effectiveness of learning can be observed, among other indicators, through enhanced student engagement and creativity, improved learning discipline, and a rise in learning motivation (Gunawan, 2024).

Meanwhile, based on Sudjana (2023), various instructional strategies employed in the teaching-learning process include the lecture technique, question-and-answer sessions, discussion-based approaches, study assignments and recitation, collaborative group work, demonstration and experimentation, role-play or sociodrama, problem-solving methods, repetitive drills, team teaching models, educational tours, use of expert guest speakers (human resources), community-based surveys, and simulation-based methods.

a. Learning Preparation Steps

1) Effective Day Analysis and Learning Program Analysis

2) Creating Annual Programs, Semester Programs and Billing Programs

3) Compiling the Syllabus

4) Developing a Learning Plan

5) Learning Assessment

Furthermore, Syafi'i, (2022) divides several stages in teaching, namely:

1) The stage before teaching. In this stage, teachers must prepare an annual curriculum implementation program, curriculum implementation semester program, lesson unit program and teaching program planning.

2) Teaching stage. In this stage, interaction takes place between teacher and student, student with student, group student or individual student.

3) The stage after teaching. This stage is an activity or deed after a face-to-face meeting with students. The activities are assessing student work, making plans for the next meeting, reassessing the teaching-learning process that has taken place.

b. Factors Influencing Learning Process Activities

According to Sanjaya, (2023) there are several factors that can affect learning process activities, namely:

- 1) Teacher Factors. Several elements can influence the quality of the learning process stemming from the teacher's role, including their formative background and the professional training experiences they have undergone.
- 2) Student Factor. A student is an individual being who grows and develops in accordance with their specific stage of personal development.
- 3) Facilities and Infrastructure Factors. Facilities encompass all items that provide direct support for an effective learning process, while infrastructure refers to elements that contribute indirectly to the success of educational activities.
- 4) Environmental Factors. Classroom-related aspects, particularly the organization of students, including class size, represent a crucial factor that can significantly impact the effectiveness of the learning process.

Based on Law No. 20 of 2003 Article 158 Paragraph 1 regarding the National Education System, it is stated that the assessment of student learning outcomes is conducted by educators to continuously monitor the process, progress, and improvement of student achievement. This statement indicates that evaluation serves as one of the elements influencing the quality of learning. From the explanation above, it can be concluded that aspects influencing teaching quality include teacher-related factors, student-related factors, the characteristics of the environment or learning context, and the assessment of student outcomes.

c. Student Achievement Measurement

Jamil (2023) explains in detail the various factors that influence academic achievement, including: External factors, which consist of nonsocial elements such as air quality, study schedule, and learning tools, as well as social elements like the family environment, disturbing noises near the study area, and others. Internal factors include physiological components, such as general physical health and the functioning of specific bodily systems—particularly the five senses—and psychological components, such as emotional intelligence, attitudes, and memory, which reflect an individual's capacity to manage the self comprehensively.

In addition, passive behavior, low motivation, and a lack of self-confidence are factors that prevent learners from reaching optimal academic performance. As Maman (2023) states, attitude reflects a person's readiness to respond in a particular manner to specific stimuli. A positive student attitude toward school subjects represents an essential initial step in supporting effective classroom learning.

As for the school environment factors, the factors that affect student achievement are:

- 1) Facilities and Infrastructure. The availability of complete school equipment, such as whiteboards and projectors, plays a role in facilitating the teaching and learning process at school. Additionally, aspects like room layout, airflow, and the school's surrounding environment can also influence how learning activities take place.
- 2) Teacher and Student Competence. The competence of both teachers and students is crucial for achieving academic success. Even with adequate facilities and infrastructure, their value will be lost without effective performance from those who use them. When a student's need for achievement is met—such as through access to qualified educators and good-quality learning tools, a supportive teacher-student relationship, and a positive peer environment—they will experience an enjoyable learning atmosphere, which in turn motivates them to improve their academic performance.
- 3) Curriculum and Teaching Methods. This encompasses both the content delivered and the approach used to present it to students. Engaging instructional strategies are essential to spark students' interest and active involvement in class. Thaib (2023) stated that the teacher factor is the most critical. When teachers demonstrate wisdom, discipline, flexibility, and the ability to make lessons enjoyable, students are more likely to achieve high performance, or at least remain engaged and not become bored during lessons.

d. Operational Efficiency

Sondang P. Siagian gave a definition of effectiveness is the use of resources, facilities and infrastructure in a certain amount that is consciously predetermined in advance to produce a number of

goods for the services of the activities that he runs. Effectiveness indicates success in terms of achieving the goals that have been set. If the results of the activity are closer to the target, it means that the higher the effectiveness (Puspitadewi, 2023). Effective education will be realized if it is supported by components that are also effective. The components in question are effective schools, principals, teachers, and students (Gemnafle & Batlolona, 2021).

School effectiveness is a measure of the level or level of achievement of school goals. The higher the level of achievement of school goals, the more effective the school management will be. In the study of total quality management (TQM), a measure of management effectiveness is associated with customer satisfaction. School effectiveness looks at whether school customers are satisfied with the services provided by the school (Hopia, Rifayani, & Ernawati, 2023).

The effectiveness of organizations including community service organizations, such as educational institutions, can be seen from the following indicators:

- 1) Overall effectiveness describes the organization's ability to carry out all of its essential duties or fulfill all established objectives.
- 2) Quality pertains to the core product or service that the organization generates.
- 3) Productivity relates to the quantity of fundamental goods or services the organization delivers. It can be assessed at the individual, team, or organizational level.
- 4) Preparedness involves a comprehensive evaluation of the organization's capability to perform a particular task effectively when needed.
- 5) Efficiency compares the output achievements per unit to the cost required to produce those outcomes.
- 6) Profit or income concerns the return generated from investments used to operate the organization, viewed from the owner's standpoint.
- 7) Growth involves increases in areas such as workforce, infrastructure, assets, revenue, earnings, market reach, and innovation—measured by comparing current conditions with past performance.
- 8) Environmental utilization addresses how effectively an organization engages with its environment to secure rare and valuable resources vital for operational success, prioritizing optimal long-term planning over short-term maximization.
- 9) Stability is linked to sustaining the organization's structure, function, and resources continuously, especially during challenging times.
- 10) Turnover reflects the rate or count of employees who voluntarily leave the organization.
- 11) Work morale refers to how organizational members demonstrate greater effort toward goals, characterized by unity of purpose and a strong sense of belonging, forming a collective psychological response.
- 12) Motivation involves the internal drive that influences a person's willingness to act and work toward professional objectives.
- 13) Satisfaction pertains to how content individuals feel regarding their duties or roles within the organization.
- 14) Acceptance of organizational goals relates to individuals or units agreeing with and believing in the legitimacy and achievability of the organization's goals.
- 15) Flexibility and adaptation denote the organization's readiness to revise standard procedures in response to environmental changes to avoid rigidity.
- 16) External evaluations are judgments made by outside individuals or groups—such as suppliers, clients, shareholders, officials, or the public—regarding the organization's trustworthiness, performance, and loyalty (Nur, 2021).

e. Training and Development of Educators and Education Personnel

Ongoing education and training are essential for teachers and staff. It helps them improve their skills, knowledge, and abilities in educating students, creating an inclusive environment, and dealing with the ongoing changes in education.

The application of management principles in enhancing educators and the education system serves as a form of administrative innovation aimed at improving the effectiveness of schools or madrasas in delivering educational services to all relevant stakeholders. Development or advancement is intended to raise employee quality, whether through formal education or other means such as training

sessions, academic forums, workshops, reading journals and newspapers, participating in professional associations, and similar activities. The organization of promotions and salary adjustments can be viewed as a form of welfare initiative and, at the same time, classified under employee development efforts.

Training is a very important activity to increase competitiveness and improve professionalism. But what is often the question is how to assess whether a training has really had a positive impact or not.

One of the facts that can be an illustration of why quantifying training is very important is that usually educational institutions will spend a lot of money to organize a training program. In the business world, every expense must be well calculated. In this case, spending on training is a form of investment where the company hopes that in the future there will be profits that can be taken. For example, it is hoped that after the training, employees will be able to immediately apply their new knowledge for the progress of the company so that profits will automatically increase. But how exactly is the best way to measure the effectiveness of training? Broadly speaking, there are three things that are usually used as a benchmark for the success of a training program, the first is the formation of employee mindset, the second is the improvement of employee knowledge, abilities, and attitudes, and the last is employee behavior that has changed to be more effective and more supportive of the company's vision and mission.

Measuring the effectiveness of the training program itself can be done in four steps. The four-step measurement of training effectiveness is a measurement method proposed by Dr. John Sullivan, a researcher from San Francisco University. Dr. Sullivan stated four bases in measuring the effectiveness of training, which are:

1) Pre-Training Employee Performance Assessment.

A valid measurement of course requires comparison. So we will not be able to know whether a training program is successful or not without valid data on employee performance progress. Therefore, it is necessary to carry out a work assessment before the training is carried out. This phase can be referred to as the initial phase before companies start measuring the effectiveness of training. From the initial data found, the company will be able to find out the extent of the employee's abilities and what training program is most suitable for the employee. This first phase does not focus on solving problems and overcoming employee weaknesses but focuses more on collecting initial data.

2) Monitoring the implementation of the training program.

The second stage in evaluating the effectiveness of training involves monitoring or overseeing the execution of the training program. During this phase, the organization conducts supervision and analysis concerning how the training is being delivered. At this stage, it is essential for the company to evaluate the level of employee engagement in the training process. Through this monitoring, it becomes possible to determine whether the training program is being clearly understood by the employees, whether they are participating enthusiastically, the extent of their activity throughout the training, and whether there is any improvement in their capabilities before and after the training session.

3) Monitoring the Effectiveness of Training.

In practice, training participants in this case are company employees who usually have different levels of ability, intelligence, and motivation levels from each other. In a training implementation, not all employees will immediately be biased to practice the training material that has just been obtained. It is predicted that there will be a certain grace period between the changes expected by the company and the end of the training period. The shorter the grace period between the two, the faster positive changes will occur.

4) Recording on the assessment sheet.

Recording employee performance results after training is very important to measure the effectiveness of training. In this phase, it will be possible to know the improvement in performance results that have been achieved by employees from before the implementation of the training and after the implementation of the training. This assessment sheet will later be communicated openly through a special meeting or open meeting with all employees who have undergone the training process. From this evaluation meeting, it will be known what problems occur during the training process, practical problems of training results in the field, and various kinds of difficulties experienced by employees while practicing the training results. By including grades on the assessment sheet, it will be known which employees are the most perfect in implementing the training results and which employees have

difficulty applying the training results, it is hoped that in the future employees will be more serious in participating in training to get better assessment results.

These four ways of measuring the effectiveness of training can be a very good method to synergize educators, education staff and foundations in terms of performance development and career development. It is hoped that the foundation will be more observant in providing appropriate training and educators and education staff will be willing to actively and enthusiastically undergo the training that has been provided by the company.

ASPECTS THAT MUST BE CONSIDERED IN THE IMPLEMENTATION OF TQM

In the TQM implementation process, there are several aspects that need to be considered, including:

a. Principal's Commitment

Principals must understand the concept of TQM and be able to provide clear directions to all teachers and staff. Leaders must be able to ensure that all teachers and staff understand and are able to implement the principles of TQM.

b. Involvement of all teachers and staff

All teachers and staff, from principals to teachers and employees, must be actively involved in the TQM implementation process. All must understand the principles of TQM and be able to implement them in every activity carried out.

c. Improvement of the quality of education and services

The implementation of TQM in educational institutions must aim to improve the quality of education and services provided to students and parents. All staff must ensure that every activity carried out produces quality products or services.

d. Performance measurement and evaluation

In the TQM implementation process, it is necessary to carry out periodic performance measurements and evaluations to determine the success achieved and identify the obstacles that are still faced. The results of this evaluation can be the basis for making improvements and improvements in the implementation of TQM in educational institutions.

e. Human resource development

The implementation of TQM must also be carried out by paying attention to human resource development. All staff must be provided with training and competency development in order to be able to implement the principles of TQM properly.

CONCLUSION

From the results of the research, it can be concluded that the participation of all parties involved in the implementation of TQM is very important in achieving the success of TQM. This participation can be realized through the formation of a TQM team, training, and socialization about TQM. In addition, support from the principal is also very important in ensuring the success of the implementation of TQM.

The implementation of Total Quality Management (TQM) can have a positive influence on the quality of education and services provided to students and parents. The improvement in quality can be seen from the increase in students' academic scores, increased parental satisfaction with the services provided, and increased productivity and efficiency of schools in managing resources. In addition, the implementation of TQM can also increase staff participation and motivation.

In order to increase the effectiveness of TQM implementation in schools, it is necessary to conduct periodic evaluations to determine the success achieved and identify the obstacles that are still faced. The results of this evaluation can be the basis for making improvements and improvements in the implementation of TQM in schools.

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