A Literature Review of Total Quality Management Practices in Malaysia and Indonesia Schools

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Keywords
Total Quality Management, TQM Model, Elements of TQM, Indonesian School, Malaysian school

ABSTRACT
The rapid growth of information and technology has encouraged all organizations including school organizations to adopt a quality management called Total Quality Management (TQM). The practice of TQM in Malaysian and Indonesian schools shows similarities and differences. Therefore, this research seeks to explore some of the TQM models and elements that are applied in Malaysian and Indonesian schools. Using a qualitative literature study approach, this study uncovers the models and elements of TQM practiced in Malaysian and Indonesian schools. The TQM models found are the Deming model (PDCA), Quality Circles (QC), Total Quality Control (TQC). The elements of TQM that are practiced include leadership, employee commitment, continuous improvement, employee involvement, training, and customer satisfaction. The difference is that the TQM that is practiced in Malaysian schools found the Crosby "zero defect" model, meanwhile, in Indonesian schools found the Control Chart (CC) Model. The TQM element in the form of problem solving in Malaysian schools is proven to be able to train students' thinking skills, creativity, and innovation. Therefore, Indonesian schools need to adopt it in classroom learning.

INTRODUCTION
The rapid growth of information and technology has encouraged all organizations, including educational organizations, to adopt quality management called Total Quality Management (TQM) (Kaiseroglou & Sfakianaki, 2020). TQM in educational institutions is a quality management concept in school organizations that offers changes in leadership and better community dynamics to answer various problems in the school environment (Bouranta, 2020).

The aim of quality management is to create high quality education that is effective and efficient in the era of globalization competition (Elahi & Ilyas, 2019). Therefore, it is hoped that educational organizations can apply quality human resources using the TQM concept (Rosyidah, 2022). Total Quality
Management is an effective way to achieve quality education because with TQM, school organizations can maintain and develop their existence in a sustainable manner (García-Alcaraz et al., 2019). Among the indicators of quality education is the availability of quality teachers and education personnel (En Vater Mahulae et al., 2020).

Education management in Indonesia and Malaysia shows similarities and differences. Education in Indonesia and Malaysia both focus more on optimizing student competencies (Ratnasari et al., 2019). Thus, it can be said that teachers in Indonesia and Malaysia have an important role that has a big impact on the sustainability of education (Rizkita & Supriyanto, 2020b). In addition, successful educational leadership can influence the school community, especially educators, education staff, and students to achieve higher performance in the school organization (M. Thaiyibi, 2020).

School leadership in Malaysia (Rahman et al., 2020) is implemented by empowering school members to achieve the school's vision and mission and focus on managing the learning process. Meanwhile, according to (Rizkita & Supriyanto, 2020b) the leadership of school principals in Indonesia is implemented by forming a quality development team, continuous improvement through communication and mediation with all school members, as well as by creating a pleasant working atmosphere (Rizkita & Supriyanto, 2020a).

The results of the aforementioned studies demonstrate that TQM principles and components are used in sustaining and improving school quality in Malaysia and Indonesia's education systems, respectively. These ideas include teacher involvement (Tnay et al., 2020), leadership (Sharma et al., 2012), strategic management (Wahab et al., 2013), and continuous development (Yahya, 2015). Given these circumstances, it would be ideal if Indonesian educational standards were at least at the same level with those of Malaysia.

According to 2018 Program for International Student Assessment (PISA) data, the competency of students in Indonesian schools for three aspects of competency is below the competency of students in Malaysian schools. Malaysia's PISA score for reading is 415, mathematics 440, and science 438. Meanwhile Indonesia's PISA score for reading is 371, mathematics 379, and science 396 (https://www.oecd.org/pisa/data/). Many factors could be the cause of this difference, one of which is how schools manage the resources available at school (Qutni et al., 2021). Another factor is that if you look at society, every region of Indonesia is still dominated by native Indonesians, but if you look at Malaysia, almost every corner of the city can be seen from China, India, Europe and Arabic, so in terms of education, Malaysia places more emphasis on to be able to compete with new entrants (Ratnasari et al., 2019).

Research comparing TQM practices in two countries has been carried out by many researchers, for example, a study (Feng et al., 2006) which attempted to compare organizational management in Australia and Singapore regarding the multidimensionality of TQM and its relationship with performance quality and innovation. Likewise, comparative studies of education between Indonesia and Malaysia have been carried out (Munastiti & Marfuah, 2019). However, comparative studies on how TQM is implemented in educational institutions, in this case TQM-based school management in Malaysia and Indonesia, are still rarely carried out. Therefore, a comparative study of TQM implementation in these two countries is novel in this research. Specifically, this research analyzes the models and elements of Total Quality Management in schools in Malaysia and Indonesia, analyzes their similarities and differences, and finds the effectiveness of their implementation. In this context, a scientific literature review is presented with the aim of demonstrating good practices related to TQM in Malaysia and Indonesia.

Total Quality Management (TQM)

TQM is a multidimensional concept which is a logical development of Total Quality Control (TQC). Quality is conformity to requirements (Lee & Wolfe, 2003) and suitability for use (Juran, 2001). TQM is an integrated effort to achieve and maintain high quality services based on continuous improvement from processes to error prevention at all levels and in all elements of the organization, aiming to meet and even exceed customer needs and expectations (Gimenez-Espin et al., 2013). TQM is assumed to be the top of the hierarchy of quality concepts; namely continuing to satisfy customer expectations, low costs, and achieving TQM through everyone's participation (Dahlgaard et al., 2008). Furthermore, (Ebrahimi & Sadeghi, 2013) explained that the evolution of TQM to a comprehensive management philosophy was shaped by the work of Shewhart (1924), Feigenbaum (1951, 1961),

<table>
<thead>
<tr>
<th>TQM Theories</th>
<th>Contribution</th>
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<tbody>
<tr>
<td>Shewhart (1924)</td>
<td>Control Chart (CC)</td>
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<tr>
<td>Feigenbaum (1951, 1961)</td>
<td>Total Quality Control (TQC)</td>
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<tr>
<td>Ishikawa (1976, 1985)</td>
<td>Quality Circles (QC) for achieving continuous improvement and fishbone diagrams for problem solving.</td>
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<td>Crosby (1979)</td>
<td>Zero defects and 14 steps to improve quality</td>
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<tr>
<td>Deming (1982, 1986)</td>
<td>Deming Cycle (PDCA) and 14 principles for improving quality in organizations</td>
</tr>
<tr>
<td>Juran (1986)</td>
<td>Three basic functions of the quality management process: quality planning, quality control, and quality improvement.</td>
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</table>

Historically, TQM has occurred in four stages: control chart, total quality control, quality assurance, and Total Quality Management (TQM) respectively. The first stage was discovered when the Ford Motor company began hiring a group of inspectors to test products against standards, which included production and delivery processes. The goal is to separate poor-quality products from those that are acceptable, and therefore discarded, reworked or sold as low quality.

The second stage was 1924-1931 when statistical quality control by inspection was developed. Shewhart proposed the idea that quality control can help distinguish and isolate two types of process variation, namely, random and special causes. A process can be made functional by sorting out variations due to special causes. Control charts to observe variations in the process to determine when to interact with the process. The third stage consists of all the previous stages to provide confidence that the product or service will exceed customer expectations. This stage emphasizes the shift from detection to prevention of poor quality. In the fourth stage, TQM concepts and principles are put into practice in every part of the organization. This demands that quality management principles must be practiced at every stage, and in every department of the organization (Alghamdi, 2018).

### TQM Practices in Schools

TQM, apart from being applied mainly by industrial and manufacturing organizations, is also attracting interest in the field of education (W. Edwards Deming, 2019). The quality of education is often an international concern. As explained by (Thonhauser & Passmore, 2006) there are many factors creating ‘pressure’ for quality in educational institutions; including the changing global environment, limited resources, demand for a more qualified workforce, and the need to implement quality education of global standards (Giannias & Sfakianaki, 2011).

According to (Kaiseroglou & Sfakianaki, 2020a) TQM has been introduced into educational institutions for at least the last 30 years or more and it is believed that appropriate adaptations of models and techniques have been introduced. Furthermore, school units are communities that exhibit complex dynamics to some extent, it is anticipated that employees will resist change, occurring in any system change (Kaiseroglou & Sfakianaki, 2020b).

Research conducted by (Egido Gálvez et al., 2016) discusses issues that influence the use of performance indicators in managing the quality of education at the school level. The research results conclude that if the company’s quality management perspective is combined with the school system, there is a good opportunity to achieve quality education. If school units want to maintain the full benefits of TQM (Munir, 2022), (Setthiya et al., 2015) they must apply TQM principles to all stakeholders throughout the institution.

Based on the description above, this literature study will attempt to: (1) Analyze the TQM models and elements practiced in Malaysian and Indonesian schools, (2) Analyze the effectiveness of implementing TQM in Malaysian schools and in Indonesian schools.
METHODS

This study seeks to examine the implementation of TQM in school communities in Malaysia and in Indonesia. This study aims to identify the models and elements of TQM that are practiced, the factors that influence these practices, and the effectiveness of implementing TQM in schools. This study also seeks to find propositions about how to improve the quality of education through TQM. This study applies a qualitative approach with a literature study method referring to (Ridder, 2012) which states that developing theory from case studies is a study that uses one or several cases to create theoretical constructions, propositions, and/or midrange theories. This approach can be considered powerful and comprehensive (Eisenhardt & Graebner, 2007). This approach to reviewing scientific literature does not follow a systematic literature review structure due to the very limited number of publications on the subject. This study therefore follows the more common narrative-based reviews (Tranfield et al., 2003).

The key searches included full text searches using terms like "TQM in Malaysia School" and "TQM in Indonesia School" in significant databases including Google Scholar, Mendeley, Taylor, and ScientoDirect. Search is only available in English. The search was adjusted in accordance with the research theme based on each database. The uniqueness of this study consists in the discovery of several TQM implementation case studies in school settings in Malaysia and Indonesia, as well as in the examination of the model's use and its fundamental components.

RESULT

Total Quality Management in Malaysia Schools

First, research (M. Pourrajab, R. Basri, 2011) investigates TQM practices in industry and in schools using the Crosby and Deming model. In the educational context, the results of this research show that teachers who try to apply the Crosby "zero defect" model can produce a condition where students pass the exam on the first attempt. However, they may lose their sense of activity, creativity, and flexibility. They will lose touch with the topics they are studying because the sole emphasis is on examination techniques, and complacency. In contrast, Deming's model can bring students into contexts where they actively engage with problem-solving exercises, inquiry projects, application of knowledge exercises, group work and collaboration, and equal relationships with their teachers, and as a result they become creative thinkers and critical and sufficiently prepared to face the challenges of a rapidly changing technological world. The conclusion of this research states that in the context of school management the Deming model is more effective than the Crosby model.

Second, research conducted by (S. N. Ismail, 2014) aims to identify the level of TQM practices and their impact on school climate at three different school levels, namely high, average and low performing schools. This study also sought to examine which dimensions of TQM practices contribute most to school climate. The TQM elements studied are top management commitment, training and education, customer focus, involvement of all staff, and continuous improvement. The findings of this research reveal that TQM has a positive impact on school climate and school quality. However, there are differences in the level of TQM practices across the three categories of high, average and low performing schools. The findings of this research strengthen the TQM theory in education by highlighting the excellent school model that connects the main dimensions of two variables, TQM practices and school climate. The findings of this research provide guidance to school top management to strengthen training programs and materials to ensure effective implementation of TQM in their schools. However, this research is limited to high, average and low achieving schools in Kelantan Malaysia.

Third, the study conducted (Arokiasamy et al., 2016) analyzed the level of transformational leadership of school principals in Perak, Malaysia. Findings reveal that the leadership level of school principals is moderate and teacher job satisfaction is low. The implication of these findings is that school principals must increase their leadership level in order to maintain and increase teacher job satisfaction. So, the higher the level of leadership of the school principal, the higher the level of teacher job satisfaction.
Fourth, research (Taahyadin & Daud, 2018) identified the level of school quality in Kedah, Malaysia by asking 375 secondary education teachers to respond to a TQM questionnaire which included several quality indicators such as empowering staff and meeting student needs. Findings reveal that there is a positive correlation between all quality indicators; The quality level of the schools surveyed is considered moderate and in accordance with local quality assurance standards.

Fifth, (Yaakob et al., 2019) explored the implementation of strategic planning and strategic management in schools in Malaysia. The results of this study show that strategic management can be a burden for teachers but can also be the cause of improving teacher performance. An effective strategy is needed by management to make improvements. The findings from this study can be used by decision makers and practitioners to design better teacher work environments in the future. It is also important to understand the teacher’s documents. It turns out that teachers are only involved in strategic management, without understanding the effectiveness of the programs being implemented.

Finally, a study conducted (Shroff, 2019) analyzed TQM indicators implemented by Primary School Teachers in Malaysia. Based on the results of factor analysis and reliability tests, the final dimensions that can identify the TQM concept in elementary schools are top management support, customer focus, continuous improvement, feedback, relationships, empowerment, and process management. Based on the findings of this research top management can put this model into practice to (1) evaluate the scope of TQM practice in their schools, (2) identify areas of TQM where some improvements can be focused and (3) recognize areas of TQM where there is current excellence and can be planned for its sustainability. Schools which are grassroots education centers must provide quality education to students. Quality should be at the heart of the educational framework so that different fields will be allowed to progress and get every kind of help from educational organizations.

Based on the results of analysis of several Total Quality Management research findings in Malaysian schools (M. Pourrajab, R. Basri, 2011), (S. N. Ismail, 2014), (Arokiasamy et al., 2016), (Taahyadin & Daud, 2018), (Shroff, 2019), and (Yaakob et al., 2019), it can be stated that Total Quality Management is applied in many schools in Malaysia. TQM applications in schools can be explained as follows:

<table>
<thead>
<tr>
<th>Artikel</th>
<th>Model TQM</th>
<th>Elemen TQM</th>
<th>Efektivitas Model TQM</th>
</tr>
</thead>
<tbody>
<tr>
<td>M. Pourrajab, R. Basri, 2011</td>
<td>Crosby&quot; zero defect&quot; Deming PDCA, Quality Circles (QC).</td>
<td>Continuous improvement Problem Solving</td>
<td>Students are creative, critical and ready to face the challenges of a rapidly changing technological world</td>
</tr>
<tr>
<td>Ismail, 2014</td>
<td>Total Quality Control (TQC)</td>
<td>Leadership, Employee Commitment, Training, Customer focus, Continuous Improvement</td>
<td>TQM memiliki dampak positif pada iklim sekolah serta kualitas sekolah.</td>
</tr>
<tr>
<td>Arokiasamy et al., 2016</td>
<td>Total Quality Control (TQC)</td>
<td>Leadership, employee involvement</td>
<td>Leadership has a significant relationship with teacher performance</td>
</tr>
<tr>
<td>Taahyadin &amp; Daud, 2018</td>
<td>Total Quality Control (TQC)</td>
<td>Employee involvement, customer focus</td>
<td>Positive correlation between quality indicators; school quality level with quality assurance standards</td>
</tr>
</tbody>
</table>
Yakob et al., 2019  Deming PDCA  Strategic management, Strategic management influences teacher performance

Shroff, 2019  Crosby’s zero defect Deming PDCA, Quality Circles (QC)  Leadership, customer focus, continuous improvement, process management, empowerment, feedback  Top management TQM indicators, customer focus, continuous improvement, feedback, relationships, empowerment, and process management

Total Quality Management in Indonesia Schools

First, a study conducted by (Rahmah, 2018) analyzed and explained the key factors that contributed to the successful implementation of total quality management at SD Al-Hikmah Surabaya. The sustainability of total quality management at Al-Hikmah Elementary School is proven by the increasing number of students entering beyond the stipulated quota; high achievement of teachers and students; as well as the large number of competitive graduates. This research found that the successful implementation of total quality management is highly dependent on the school's top-down leadership system, effective communication between stakeholders, well-measured rewards and punishments for students, and ongoing internal and external education quality management assessments.

Second, (Prestiadi, 2015) analyzed the implementation of TQM practices by school principals, school committees and teaching staff to meet student satisfaction. The results of the analysis reveal that SMK Negeri 1 Ampelgading adopted TQM to obtain customer satisfaction through the visionary leadership of the principal, and the support of the school committee and the role of teachers.

Third, Total Quality Management (TQM) practices in schools in Indonesia based on research (F. Ismail, 2018) include continuous improvement, setting quality standards, cultural change, organizational change, and maintaining customer relationships. To support the implementation of TQM, an implementation strategy is needed, including the preparation stage, planning stage and implementation stage. The success or failure of implementing TQM depends on the commitment and collaboration of every part of the school organization, starting from the principal, teachers and education staff.

Fourth, research results (Usman et al., 2020) show that each school has a profile consisting of vision, mission, school resources, policies, collaboration with the world of work, and school production units. Implementation of quality management is carried out through top management, leadership, management commitment, the role of the quality department, training and education, employee involvement, continuous improvement, supplier partnerships, product/service design, quality policy, quality data and reporting, communication channels for receiving complaints, and customer satisfaction orientation and employee relations. Evaluation is carried out continuously by involving internal and external auditors, school self-evaluation programs and monitoring instruments.

Fifth, research findings at Islamic boarding school educational institutions (Arribath et al., 2021) show that there are 12 TQM elements at the Tahfidz al-Qur’an Islamic Boarding School, including leadership, quality commitment, customer satisfaction, continuous improvement, integrated curriculum, and learning evaluation, learning media and models, education and training, infrastructure standards, finance and financing, public relations and Islamic boarding schools, unity of vision and mission, and goals, as well as situation analysis.

The results of the analysis of several Total Quality Management research findings in schools in Indonesia can be depicted in the figure below.

Figure 3
Total Quality Management Practices in Indonesian Schools

<table>
<thead>
<tr>
<th>Articles</th>
<th>TQM Model</th>
<th>Element of TQM</th>
<th>Effectiveness of TQM Models</th>
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IJSSR Page 2349
The successful implementation of total quality management is highly dependent on the school's top-down leadership system, effective communication between stakeholders, well-measured rewards and punishments for students, and ongoing internal and external education quality management assessments.

Customer satisfaction is achieved through the visionary leadership of the principal, the role of teachers and the support of the school board.

The success or failure of implementing TQM depends on the collaboration and commitment of all parts of the school organization, from the principal, teachers and educational staff.

Based on the results of the analysis of several literature on Total Quality Management practices in schools in Malaysia and Indonesia, the model and elements of Total Quality Management practiced in school organizations can be described as in figure 4.

**Figure 4**

<table>
<thead>
<tr>
<th>TQM Practices in Malaysian Schools and Indonesian Schools</th>
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</thead>
<tbody>
<tr>
<td><strong>TQM in Malaysia Schools</strong></td>
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<tr>
<td><strong>TQM Model</strong></td>
</tr>
<tr>
<td>Crosby&quot; Zero Defect&quot;</td>
</tr>
</tbody>
</table>
Quality Circles (QC)  Total Quality Control (TQC)
Training Strategic management
Customer focus
Process management
Empowerment
Feedback
Problem solving

Based on figure 4 above, it can be explained that there are similarities and differences between TQM practices in Malaysian schools and Indonesian schools, both in the TQM model and the TQM elements that are practiced. In the TQM model that is practiced, both schools in Malaysia and schools in Indonesia use the Deming PDCA, Quality Circles (QC), Total Quality Control (TQC) models. Meanwhile, the TQM elements that are practiced by both schools in Malaysia and schools in Indonesia include leadership, employee commitment, continuous improvement, employee involvement, training, customer satisfaction.

Apart from many similarities in TQM practices in Malaysian schools and schools in Indonesia, several differences were also found. First, in the TQM model used, schools in Malaysia found the Crosby Model (1979), namely the "zero defect model" or management without defects. This can lead to a teaching and learning process that focuses exclusively on achieving good exam results. This contrasts with the interpretation of TQM as a never-ending cycle of improvement in production systems (Crawford & Shutler, 1999). Meanwhile, the TQM model found in Indonesian schools and not found explicitly in Malaysian schools is the control chart model in TQM. A control chart is a graph that functions to explain how changes in a process occur over time (Ziegel et al., 1999).

The difference in the effectiveness of implementing TQM elements in schools is that in Malaysian schools' students are trained more in problem solving skills so that students become more creative, critical and ready to face the challenges of the rapidly changing technological world (M. Pourrajab, R. Basri, 2011). Meanwhile, the implementation of TQM in schools in Indonesia still focuses on improving management, leadership and teacher performance. While students are only required to complete the lesson material, thinking skills such as problem solving are still not widely practiced (Rahmah, 2018).

Based on research findings and discussions, this study produces several propositions related to TQM practices in schools, namely:

1. TQM practices in schools can produce students who are creative, critical and ready to face the challenges of a rapidly changing technological world.
2. TQM has a positive impact on school climate and school quality.
3. There is a correlation between the principal's transformational leadership and teacher job satisfaction.
4. Strategic management has an effect on improving teacher performance.
5. Customer (student) satisfaction is obtained through the visionary leadership role of the school principal, the role of teachers, and the support of the school committee.

CONCLUSION

This research seeks to explore several TQM models and elements implemented in Malaysian and Indonesian schools. In general, most schools in these two countries apply some of the same TQM models and elements. The difference is in the selection of TQM indicators implemented in schools. The choice of indicators is influenced by the school context and human resources at the school.

Furthermore, there is a TQM model that is used in many schools in Malaysia but is not found in samples of schools in Indonesia, namely Crosby's (1979) "zero defect" model. On the other hand, the TQM model found in Indonesian schools and not found explicitly in Malaysian schools is the control chart model in TQM. Finally, TQM elements in the form of problem solving in Malaysian schools have been proven to be able to train students' thinking skills, creativity, innovation and mastery of technology so that Indonesian schools need to adopt these problem-solving elements in classroom learning.

This literature study is limited to the analysis of TQM models and elements used by school management, and the effectiveness of implementing TQM in Malaysian schools and Indonesian schools.
This study has not examined the obstacles, resistance and solutions to implementing the TQM model in schools. Future studies can analyze differences in TQM implementation at a broader level, for example the implementation of TQM in schools in Southeast Asia.

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