Sustainable education through implementation of Total Quality Management

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Abstract

This paper is a literature review paper based on findings of previous studies. The purpose of this review paper is to show the importance of increasing the level of quality in education system and school in order to obtain the sustainability in education. Additionally, the paper aims to show how to reach to sustainable education via implementation of Total Quality Management (TQM) philosophy in education system and school. This study identifies some useful points for educational administrators and policy makers to reach sustainable education through implementation of TQM at schools. The findings of this study show that implementation of TQM in school enables educational administrators and policy makers to increase the quality in schools and stay in high level, reduce the budget, and increase the level of graduates’ knowledge and skills.

Keywords: Total Quality Management; sustainable education; school

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1. Introduction

In 1991, Malaysia committed to vision 2020, to become a fully developed nation by 2020. While Malaysian government has made progress, at current rate of growth, the nation is in danger of losing the competitiveness and failing short of the economic and social ambitions (Ministry of Education Malaysia, 2012). Therefore, a fundamental change is required in economic and social performance. In other hand, education is a major contributor to the development of social and economic capital (Ministry of Education of New Zealand, 2012). Infect, education system consider as bedrock of development of each nation. It has provided current generation and those before it with the skills and knowledge that have driven each country growth and, with it, the prosperity. It also inspires creativity and fosters innovation; provides youth with the necessary skills to be able to compete in the modern labour market; and is a key driver of growth in the economy.

The Malaysian Government has sustained high levels of investment in education over the 55 years since independence (Ministry of Education Malaysia, 2012). As early as 1980, the Malaysian federal government’s spending on primary and secondary education, as a percentage of Gross Domestic Product (GDP), was the highest in East Asia. In 2011, the amount spent, at 3.8% of GDP or 16% of total government spending, was not only higher than the Organization for Economic Cooperation and Development (OECD) average of 3.4% of GDP and 8.7% of total public spending respectively, but also at par with or more than top-performing systems like Singapore (11%), Japan (7%), and South Korea (11%). In 2012, with an education budget of RM37 billion, the Government has continued to devote the largest proportion of its budget, 16% to the Ministry. This demonstrates the very real commitment the government has to education as a national priority (Ministry of Education Malaysia, 2012). On the other hand, in 2011, Malaysia in some areas such as enrolment rate (94% for primary level) and dropped out rate (0.2% for primary level) achieved near universal rate, although these are still lower than that of high-performing education systems like Singapore and South Korea (Ministry of Education Malaysia, 2012). But in some areas like as international student assessments including the Programme for International Student Assessment (PISA) and the Trends in International Mathematics and Science Study (TIMSS), Malaysia’s students failed to meet the international average rate. For Example, in TIMSS in 1999, its average Malaysians’ student score was higher than the international average in both Mathematics and Science. By 2007, the last published cycle of results; the system’s performance had slipped to below the international average in both Mathematics and Science with a commensurate drop in ranking. The results
from PISA 2009+ (the first time Malaysia participated in this assessment) were also discouraging, with Malaysia ranking in the bottom third of 74 participating countries, below the international and OECD average. Almost 60% of the 15-year-old Malaysian students who participated in PISA failed to meet the minimum proficiency level in Mathematics, while 44% and 43% did not meet the minimum proficiency levels in Reading and Science respectively. A difference of 38 points on the PISA scale is equivalent to one year of schooling. A comparison of scores shows that 15-year-olds in Singapore, South Korea, Hong Kong, and Shanghai are performing as though they have had 3 or more years of schooling than 15-year-olds in Malaysia (Ministry of Education Malaysia, 2012). Achieving universally high outcomes in educational system is only possible by ensuring that schools deliver high-quality instruction to each and every child.

Total Quality Management (TQM) is a comprehensive management philosophy (Deming, 1986). It is a set of practices that focus on continuous improvement, fulfilling the customers’ needs, and lowering rework. It also stresses the increased involvement of employees and more teamwork, process redesign, competitive benchmarking, constant measurement of the outcomes, long-range thinking, team-based problem solving, and closer ties with the suppliers (Yang, 2005). The concept of TQM is applicable to education. Although TQM was originally intended for the industrial sector, many educators believe that TQM afford guide principles for needed educational reform (Dheeraj, 2004). A number of researchers in the field of education such as Byrnes, Bonstingl, Murgatroyd and Morgan, and Fields report that TQM is attracting mounting interest among school staff. This is mainly the case in the UK, Canada and the USA, where education authorities are attempting to impose quality standards through the development of stringent accountability systems, competency-based education and testing, and mandated national curricular content and goals (Crawford & Shutler, 1999).

In recent years, sustainable development (SD) strategy for enterprises has become an important issue around the globe (Tsai & Chou, 2009). Sustainable development is a difficult concept to define; it is also continually evolving, which makes it doubly difficult to define (McKeown, Hopkins, Rizi, & Chrystalbridge, 2006). One of the original descriptions of sustainable development is credited to the Brundtland (1987): “sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (p. 43).

With this kind of investment, Ministry of Education (MOE) must try to continue improvement and sustainable development in education (SDE). In order to meet the high
aspirations amidst an increasingly competitive global environment, educational systems should try to improve the quality of education, focus on student outcomes, and after that make plan to stay in high level. To this end, governments must design a comprehensive plan for improvement of quality and sustainable development for education system. To achieve the high quality education, MOE must improve the quality of education by applying some models like TQM or similar quality models. Unfortunately, to date, the outcomes have been uneven. With consider the high investment in education in Malaysia, the results show that the high quality in education did not meet and also the good results also do not have sustainability. To achieve the goal of ‘sustainability’, the implementation and certification of quality has become an important activity (Tsai & Chou, 2009). Therefore, the purpose of this paper is to show how education system will be able to improve the quality of education with implementation of TQM and reach to sustainable education in Malaysia.

2. Education and Total Quality Management

Today, the improvement of quality in some areas such as industry, manufacturing, health, and education is considered as a necessity (Singh, Grover, & Kumar, 2008). In education, some factors such as the budget reduction, the low level of the graduates’ knowledge and skills have led to the need for people and governments to embark on extensive reconstruction or improvement of the education systems quality. Education experts have always been looking for techniques and strategies to improve the quality of education and keep up with the world standards. One of the models for the improving the quality of education is TQM model, which focuses on customer satisfaction and continual improvement (Tong & Han, 2003).

Increasingly, the implementation of TQM has extended over industrial organizations and has turned failing companies into world leaders. Although educational organizations have been slower to see the value of TQM, many of them are now using TQM to improve their administration and to face internal and external challenges. The literature includes innumerable cases of TQM principles incorporation in education. The application ranges from school (Schmoker & Wilson, 1993; Weller & Hartley, 1994) to higher education settings (Sahney, Banwet, & Karunes, 2004; Wiklund, Klefsjo, & Edvardsson, 2003). TQM in education follows these points:

- the general definition of excellence;
- adding value;
- suitability of educational results and experience for use;

- accord for education to output planned aims, and
- detailed description and requirements in education (Karusner, 2004; Sahney, 2004).

Tong and Han (2003) in their studied show that, by adapting aspects of the TQM to fit their own needs, education organizations experienced a better ability to manage the process of quality, and maintain and enhance development. Ngware, Wamukuru, and Odebero (2006) showed the number of secondary schools which applied TQM principle in Kenya. They found that most schools are not committed to strategy quality planning, but they have promoted human resource development initiatives. Moreover, Weller (2000) reported that with the application of TQM principles, principals and teachers can recognize the root of absenteeism. It also can help in identifying realistic solutions which yield positive results in academic and non-academic areas.

The question to be asked here is what are the benefits of TQM for education? The literature review of TQM in education shows that many researchers such as Comer and Gates (2004), Burke (2010), and Pal and Dhodiya (2011) stated that have encouraged the use of TQM in education. A growing number of schools in the USA that have implemented the process, principles and tools of TQM, have revealed tremendous improvements in different areas which have been acknowledged by a number of scholars including (Blankstein, 1996; Bonstingl, 1996; Carlson, 1994; Manley & Manley, 1996; Moore, 1993; Quong & Walker, 1999; Rappaport, 1996; Schargel, 1994; Tribus, 1996).

Based on TQM and the mentioned studies, some of the improvements in schools are listed below including increasing students’ involvement the activities after-school, membership of Parents, Teacher and Learner Associations (PTLAs) has grown, requests for admission to schools have increased, schools have raised large sums of money for new or additional programs and services, motivating students to do and be their best with development of the curriculum, students have become co-managers of their education, principals and teachers have become enablers or even facilitators and just taskmasters, work ethics, morale and motivation have improved, lower dropout rate, there have been fewer mistakes with an accompanying decrease in cost due to a reduced necessity to undertake tasks, and schools have experienced fewer disciplinary problems.

Sallis (2002) argues that an educational organization could benefit from applying the TQM approach both in human and financial terms. Sallis points out that some concepts of TQM like ‘right first time’ cannot be directly implemented in educational organizations but educational organizations can still benefit from such a notion. He indicates that if an education organization
applied TQM, mistakes will be minimized with clear systems and procedures, and good team work through careful and thoughtful planning. On this point, one can notice that although TQM originally started in manufacturing and it has somehow acquired business language, it is still flexible enough to be adapted by education. Murgatroyd and Morgan (1993) highlight the benefit of holistic organization in applying TQM. They mention that TQM is not concerned just with the outcome of schooling, but with the whole nature of schooling as a process for all stakeholders.

The literature review shows that implementation of TQM in schools involves students and teachers’ and this leads to:

- Tremendous improvement regarding teambuilding and customer focus;
- Cooperative governance in schools which improves the work ethic and morale of teachers, principals and students with resultant academic improvement, and
- Change of school culture, which is essential for continuous improvement of the school’s quality management and quality of work culture (Ackoff, 1999; Griffith, 2001; Harrison, 1998; Koch, 2003; Matthews, 2001; Van der Linde C H, 2001; Widrick, Mergen, & Grant, 2002).

3. Sustainable development in education and TQM

Sustainable development is a difficult concept to define. In fact, the concept of SD comes from of the interrelationship between human and natural systems. The main principle in SD is human and natural systems must dynamically interdependent (Dale & Newman, 2005). SD help organizations to perform better and in terms of sustainability (Isaksson, 2006). There is a growing body of empirical research supporting a direct relationship between the adoption of TQM and improved organization performance (Kaynak, 2003; Prajogo & Sohal, 2006; Reed, Lemak, & Mero, 2000) and it leads to sustainability of advantage (Reed, et al., 2000).

The aim of SDE is to grow up students who are able to develop their knowledge in a variety of different and unpredictable situation (Jucker, 2002). Traditionally, students do not have chance to apply SD into practice (Steinemann, 2003), but this is a requirement if they are able to jointly create solutions (Wals & Jickling, 2002).

If an organization implement TQM, it will be able to improve its performance, with this kind of improvement, organization will be able to contribute SD. TQM and SD can be comparing together in order to find possible synergies which can improve change work for increase sustainability (Isaksson, 2006). TQM as a philosophy of management could be
extended to SD’s elements and items. Each organization/industry manages its process to convert input to output. In schooling process, students enter school as an input and go through a teaching process performed by teachers (Stigler & Hiebert, 2009). Finally, knowledgeable students are output of schooling process. TQM principals emphasize the quality of teaching system rather than results of examinations. Crosby (1995) support implementation of TQM in education and suggested a strategies as fallow:

- Emphasize the quality of the teaching system rather than the results of the examinations.
- As the name “total” implies, pay attention to all the constituents of the system.
- Look for the factors affecting the exam failures and try to eliminate them at source.

Following these strategies for teaching can produce students who can pass their examinations with less fail in their exams which mean that less time and money will be wasted. Instead, the saved money can make the schools better compete in the education market. When the number of failures reduces, the education system can make plan to increase the level of quality. With applying continues improvement (one of TQM principles) education system and sustain in high level of quality and knowledgeable students (see Figure 1).

**Figure 1:** Difference between Industry, school, and TQM in school
4. Conclusion

This literature review paper tried to show the importance of quality in education system and school, and identified this point that with implementation of TQM, schools obtain sustainability in education. With implementation of TQM, organization will be able to reduce the costs of waste and rework. The major aim of education system is to produce high quality learning outcomes in students. Each country requires a transformation of its entire education system, lifting achievement for all students. Rather than simply adding staff and facilities, there is now a need to understand and improve the quality of education and focus of students’ needs. In order to compete with the best in the world, the education system must develop students who are knowledgeable, think critically and creatively, and are able to communicate with the rest of the world. In other hand, students’ outcome is one of the major factors to determine the level of success in an education system. TQM give this opportunity to education system to have output with high quality (Knowledgeable students) and stay in high quality level of education. It is suggested that educational administrators and policy makers make a plan to implement TQM in school system.

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