Review

Application of total quality management to the Nigerian education system

Salami CGE and Ufoma Akpobire O

Delta State University, Department of Management and Marketing, PMB 95074 Asaba, Nigeria
Delta State Polytechnic, School of Business Studies, Department of Business Administration and Management

Total Quality Management (TQM) is recognized as an important management philosophy. Although many people assume that TQM model applies only to profit-making organizations, it can also be applied to non-profit organizations, service organizations, as well as the different levels of education. Over the last few years, TQM has been applied in the education industry (Winn and Green, 1998). This paper describes the principles of TQM with emphasis on identifying the customer and analyzing the processes. The 14 points of Edwards Deming which form the framework for the implementation of TQM are individually applied to the academic environment based on the experience gained in higher education in Nigeria.

Keywords: Total Quality Management, Higher Education, Service Quality Education Processes, Customer Satisfaction.

INTRODUCTION

The Japanese are known to be the first economy to embrace the visionary management technique called total quality management (TQM) after the Americans rejected the concept originally conceived by W.Edwards Deming in 1950s. Deming's philosophy was not merely about productivity and quality control; it is a broad vision on the nature of organizations and organizations should change in response to consumer needs.

Many educators look at TQM principles and assume that the model applies only to profit-making organizations. As will be explained later, TQM applies also to corporations, service organizations, universities, secondary schools, and elementary schools. Keller (2006), an educationist and planner, noted that in the 21st century university administrators will be responsible primarily for three things: managing change, financial controls, and quality of service. This implies that they will manage new administrative configurations, changes in tenure, network of colleges linked through technology, as well as evolve strategies to manage interdisciplinary academic programmes. Keller (2006) argues further that university leaders will devote more time and ingenuity to controlling costs, increasing productivity, finding additional revenues, and vigorously promoting accountability. Additionally, the goal of maintaining quality will require university administrators to watch over the quality of teaching, advising, student services, administrative actions, as well as campus facilities.

According to Lunenbury (2010) the concepts formulated by TQM founder, W.Edwards Deming have proved so powerful that educators want to apply TQM in schools. Universities, however, have been slower to see the value of using TQM to improve the administration of the university. In 1990, Oregon State University endorsed TQM as its management philosophy and has experienced outstanding success in improving the

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*Corresponding Author Email: charles.salami@yahoo.com

operations of the university (Winn and Green, 1998). For example, using TQM they reduced the average duration of remodeling projects by 23% at OSU. Deming's' philosophy provides a framework that can integrate many positive developments in education, such as team-teaching, site-based, cooperative learning, and outcome-based education.

The concept of TQM is applicable to education. Many educators believe that the Deming's' concept of TQM provides guiding principles for needed educational reform. In his article "The Quality Revolution in Education" John Jay Bonstingl (2001) outlines the TQM principles he believes are most salient to education reform. He calls them the "Four Pillars of Total Quality Management". These are synergistic relationships, continuous improvement and self evaluation, a system of ongoing process, and leadership. All the above pillars of TQM do not seem to be all embracing and inclusive in clearly understanding its application to education today.

What is quality?

Quality has successfully eluded the dragnet of definitions. This is because it means different things to different people even though it stares at you and you can recognize it, yet it is difficult to define. As Mukhopadhyary (2006) has argued, quality lies in the perception of the consumer. What is "great" for one may not be good enough for another. However, there are various well known definitions of quality. Crosby (1979) defines quality as "conformance to requirement" while Juran and Gryna define quality as "fitness for use". Deming (1986) defines quality as "a predictable degree of uniformity and dependability at low cost and suited to the market. Many organizations found that the old definition of quality, "the degree of conformance to standard" was too narrow. Consequently, they used a new definition of quality in terms of "customer focus". Brigham (1993) reported that many companies had initially concentrated all their efforts on improving on internal processes with little or no regard for the relationships between those processes and the organisations' ultimate customers. This failure to connect the process with the end-users has led many companies to struggle to survive or even die. In other words, it is either you embrace customer-centrism or die.

Quality and Education

In the context of education and because of the intangible nature of its processes, there is a considerable discussion on the notions of educational quality (Green, 1994; Harvey, 1995). Fincher (1994) describes how quality perspectives have evolved in education over the years by going through a shift from experience to technique, style and finally to process. There are a number of researchers who have formulated frameworks for quality improvement (Johnson, 1993; Susan, 1995). These frameworks are entitled as Continuous Quality Improvement (CQT), Strategic Quality Management (SQM) or Total Quality Management (TQM). Even though there might be some differences among theses approaches, the term TQM appear to capture the essence of quality improvement. TQM can be viewed as a strategic architecture requiring evaluation and refinement of continuous improvement practices in all areas of the production process. Corrigam (1995) gives a definition with an emphasis on customer satisfaction: that "TQM is a management philosophy that builds a customer-driven, learning organization dedicated to total customer satisfaction through continuous improvement in the effectiveness and efficiency of the organization and its processes. Kaufman (1992) aggresses with this definition when he argues that total quality management provides what is required as judged by the client.

TQM has become increasingly popular by the plethora of books and journal articles since 1990 (Tucker, 1992). In support of TQM initiatives in education, Crawford and Shutler (1999) applied Crosby (1984) model to suggest a practical strategy for using TQM principles in education. Their strategy focused on the quality of the teaching system used rather than on the students' examination results. They argued that examinations are a diagnostic tool for assuring the quality of the teaching system. To satisfy the educational needs of students, continuous improvement efforts need to be directed to curriculum and delivery services. It can be argued that through such a perspective, some of the root causes of system failures in education can be identified. These include poor inputs, poor delivery services, lack of attention to performance standards, unmotivated staff and the neglect of students' skill (Ali and Zairi,2005).However, Thakkar *et al* (2006; Temponi, 2005) argued that the emphasis on students as a customer should go on to include other stakeholder in the educational outcomes. Some of the reasons include pressures from industry for continuous upgrading of academic standards due to changing technology, government schemes with allocation of funds, which can encourage research and teaching in the field of quality, increasing competition between private and government academic institutions etc.

TQM in Higher Education

According the reports of UNESCO and the World Bank, social and private returns of higher education is less than those of primary and secondary education. It is estimated that social return of primary education is 25% while that of higher education is only 1%. This has led to the thinking that the returns of higher education are largely personal/private, and therefore, subsidy at that level should be reduced.

In managing educational change there has been general criticism (Iven, 1995) that government initiatives are being pushed by a narrow employer strategy that products of education should respond to labour needs. Sangeeta et al (2004) consider education system as a transformation process comprising of inputs of students, teachers, administrative staff, physical facilities and process. The processes include teaching, learning, and administration. Outputs include examination results, employment, earnings and satisfaction.

In their model for TQM implementation in higher educational institutions, Osseo-Asare and Longbottom (2002) propose enabler criteria which affect performance and help organizations achieve organizational excellence. These include leadership, policy and strategy, people management, resources and partnerships, and processes. They also suggest result" criteria which include customer satisfaction, people satisfaction, impact on society as well as key performance results for measuring the effectiveness of TQM implementation.

In applying TQM to higher education using W. Edwards Deming's 14-point principles, the writer is guided by the fact that the philosophy is more fluid than concrete and therefore, may not be easily applicable in every society in a "cook book" fashion. Consequently, it has adopted a country-specific approach in the implementation of TQM in higher education in Nigeria. However, in examining Deming's 14-point principles of TQM, words like Learning and curriculum are not found. This has necessitated an operational translation of the TQM terminologies. For example, Vice Chancellor's of universities, Provosts of Colleges of education, and the Rectors of polytechnics for the purpose of the study will be considered as management Teachers will be viewed as manufacturers and managers of students, the knowledge acquired by students constitute the product, while parents and society will be considered as the customers.

Deming's 14-Point principles As Applied to Education

Deming's TQM principles are based on the assumption that people want to do their best and that it is management's (Vice Chancellors/Provost/Rectors) responsibility to enable them to do so by constantly striving to improve the system in which they work.

Principle 1: *Create Constancy of Purpose for Improvement of Products and Services*.

It was posited earlier that educational services are intangible and as Salami (2009) has argued the insensitivity and non-responsiveness on the part of top

government officials to education in Nigeria may be the perceived absence of immediate return on investment (ROI). For educational institutions, the purpose of the system must be clear and shared by all relevant stakeholders including board members, administrators, teachers, support staff, parents, and students. For example, the mission statement of Delta State University, Abraka is "Promotion of Quality Education, Character and Meeting the Challenges of our Time through Exemplary Scholarship and Professionalism". Thus, based on the above mission statement the management would be expected to ensure that necessary administrative configuration, resources and support are provided if it is to be accomplished.

Principle 2: *Adopt the New Philosophy*

Implementation of the second principle would require a reassessment of the school's mission and priorities within available resources. A visit to any higher institution in Nigeria will reveal a multitude of abandoned projects. It must add that the abandoned project syndrome in universities is a microcosm of what obtains at the state level. Existing methods, materials, and environments may be replaced by new teaching and learning strategies aimed at promoting effectiveness in the delivery process.

Principle 3: *Cease Dependence on Inspection to Active Quality*.

The field of education appears to be in an era where individuals and corporate bodies don't find attraction investing in education. This has led to decrease in educational funding. The governments appear to be the greater culprit in funding matters. For example, the committee set up by the National Universities Commission (NUC) in the 2006/2007 academic session found an average shortfall of N1.16 billion in the recurrent allocation to federal universities. According to Munzali (2013) even though the government calculated the average cost per student to be N507,903 in 2010, the actual cost disbursed was N200,000 which is barely 40%. The practice therefore is to engage in what Bonstingl (2001) called "Inspection at the end of the line". According to Deming (2000) it always costs more to fix a problem than to prevent one. Reliance on remediation can be avoided if proper intervention occurs during instruction. Examples of preventive approaches in schools include Slavin's (2009) "Success for all schools" James Comers' (2000, 2006) "school development program", Henry Levin's (1986) "accelerated schools" and Joyce Epstein's (2010) "parent involvement strategies".

Principle 4: *End the Practice of Awarding Business on the Basis of Price Alone*

There is the misconception by many that the cheaper the item the more the added value they get. A look around any of the university campuses a visitor is confronted by a plethora of unsightly rundown and dilapidated facilities. Even if we make provision for obsolescence and age, most of the facilities are results of low quality products and poor purchase decisions based perhaps on the belief that you get more value when you pay less. On the contrary, the lowest bid may not be the most cost-efficient. It is not being suggested that high price automatically translates to high quality, but it can be argued that price show positive correlation with quality. It is therefore, suggested that schools should seek to maintain one single supplier for any of its products for any one time based on long-term relationships of loyalty and trust with the supplier.

Principle 5: *Improve Constantly and Forever Every Activity in the Organization to Improve Quality.*

The focus of improvement efforts in education under Deming's philosophy is on teaching and learning. Based on the latest research findings, the best strategies must be attempted, evaluated and refined as needed (Lunenbury, 2010). And, consistent with learning style theories (Dunn & Dunn, 1992, Dunn, Dunn, & Perrin, 1994), Gardner, and Levin's (1986) accelerated schools for at-risk students, educators must redesign the system to provide for a broad range of people including the handicapped, learning-disabled, as well as special needs students. The aim should be that the different categories of students are successful in school. Standards should be met before permitting them to move to the next level.

Principle 6: *Institute Training on the Job*

According to Lunenburg (2010) training for educators is needed in three areas. First, there must be training in the new teaching and learning processes that are developed. Second, training must be provided in the use of new assessment strategies (Pophan, 2010). Third, there must be training in the principles of the new management system. For schools, this means providing continuous professional development activities for all school administrators, teachers, and support staff. It implies further that with the rate of change in the education sector due to ICT revolution, the immediate stakeholders such as administrators and teachers must keep pace with innovation in order to remain effective. In other words, it is either "embrace change or die". According to Shobowale (2012) the ICT literacy rate in Nigeria is less than ten million. This means that training and retraining must be instituted at all levels of education.

Principle 7: *Institute Leadership*

This Deming's principle promotes a systems approach to education. According to Senge (2006) improvement of a stable system comes from altering the system itself, which is primarily the job of management and not those who work within the system. Deming (2000) asserts that the primary task of leadership is to narrow the amount of variation within the system, thereby bringing everyone towards the goal of perfection. It can be argued that the more this variation is reduced the more likely it will be for the mission statement to be achieved. It means bringing everyone towards the goal of effective learning for all. Lunenburg (2006) describes such scenario as a move toward excellence and equity.

Principle 8: *Drive out Fear*

One of the basic assumptions of TQM is that people want to do their job if the enabling environment can be created. It can be argued that the ultimate success or failure of a system depends on the leadership. The focus of improvement efforts should be on the process and on the outcomes which must have been described by management. Deming argues that, if quality is absent, the fault is in the system.

Consequently, it is management's job to enable people to do their best by constantly improving the system in which they work. It has been observed that leadership in many Nigerian universities encourage sycophancy and the institution of fear in the minds of those individuals who have genuine concerns about how to move the system forward. The result is that administrators surround themselves with mostly sycophants who say only what the administrator would like to hear, thereby leading the system to a steep slide down. In many cases such advisers say "what they don't mean, but mean what they don't say". The resulting manifestation is that some administrators end up being worse than their predecessors. Fear creates barrier to improvement efforts in any system. In many schools both teachers and support staff are often afraid to point out problems and offer suggestions because of fear. Leaders should reappraise the need to communicate that staff suggestions are valued and rewarded.

Principle 9: *Break Down Barriers among Staff Areas*

Deming's ninth principle is closely related to the first principle: create constancy of purpose for improvement of product and service. Teachers and students were operationally defined as manufacturers and customers

respectively within the context of TQM, while knowledge was translated to mean product. In the school setting; this principle applies to interdisciplinary instruction, team teaching, writing across the curriculum, and transfer of learning. Many Nigerian universities are promoting interdisciplinary instructions in courses such as General Studies which select faculty members teach to students across all disciplines. Collaboration needs to exist among members of the institution so that quality can be maximized. Total quality means promoting learning for all in the school system.

Principle 10: *Eliminate Slogans, Targets and Exhortations that Demand Zero Defect and New Production Levels.*

According to Lunenburg (2010) slogans, exhortations, and targets is the supposition that staff could do better if they tried harder. He argues that this offends rather than inspire the team and that it is also capable of creating adversarial relationships because many causes of low quality and low productivity in the school system are due to the system rather than the staff. Luneneburg (2010) does not completely agree with Deming on this principle as it relates to education. He argues that educators tend to use a lot of slogans as a general practice. Typical slogans used by educators are "keep the main thing", referring to students as the focus of all discussions. Another slogan some teachers adopt is that "All children can learn". It is believed that slogans such as these will not only inspire teachers but also serve as targets to be achieved by school organizations.

Principle 11: *Eliminate Numerical Quotas for Staff and Goals for Management.*

There are many practices in education that constrain our ability to tap into the intrinsic motivation of staff members. They include rigorous and systematic teacher evaluation system, merit pay, management by objectives etc. Deming (2000) refers to these practices as distractions. He believes that such approaches are counterproductive for several reasons including: setting goals can lead to marginal performance; merit pay can destroy teamwork; appraisal of individual performance nourishes fear while increasing variability in desired performance.

Principle 12: *Remove Barriers that Rob People of Pride In their Work.*

Anybody in a work environment would want to be appreciated and valued. Most people want to do a good job if the environment is friendly. Communication is the food of life and where it is effective communication can eliminate de-motivators. Involvement of others in decision making as well as rich and clear communication is critical to organizational success. Information dissemination through news bulletin can bridge communication gaps as well as promote a sense of belonging among members.

Principle 13: *Institute a vigorous program of Education and retraining for every one.*

The administrator, teachers and the support staff must evolve positive attitude towards training and retraining. Areas to emphasize will include school based management, group dynamics, consensus building, and collaborative styles of decision making. And as Lunenburg (2006) has cautioned, all stakeholders on the schools team must realize that improvements in student achievement will create higher levels of responsibility.

Principle 14: *Put everyone in the Organisation to work in order to accomplish the Transformation.*

No TQM program can be accomplished without definition of what the performance standards should be. This means that the school board and administrators must have a clear plan of action to carry out the quality mission. The quality mission must be internalized by all members of the school organization. As Deming has argued, transformation is everybody's job.

CONCLUSION

Total Quality Management is an approach an organization can use to improve quality and meet customer requirements by controlling. Many educators assume that the TQM model applies only to profit-making organizations. TQM can also be applied to education. The concepts of TQM have proved so powerful that educators now apply the philosophy to schools. Universities, however, have been slower to see the value of using TQM in their operations. One factor that is most critical to the success or failure of a TQM implementation effort is the universal endorsement, particularly at the top. If management is not completely sold on TQM, it is unlikely that the effort will be successful. The question of quality in education is directly related to the quality of teachers, students and infrastructure provided to them by the system. It can be argued that within the context of TQM it is the system that fails, not the individuals. TQM should be built upon a set of core values and concepts. A set of fundamental core values which form the building blocks of TQM include leadership and quality culture, continuous improvement and innovation in educational processes, fast response and management of information and partnership development, both internally and

externally. TQM is capable of providing opportunity to conceptualize a systematic change in the education subsector.

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