TOTAL QUALITY MANAGEMENT IN VOCATIONAL AND TECHNICAL EDUCATION IN NIGERIA

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Abstract

Total quality management is a tool that has been in the exclusive use of the industry and business over the years to manage quality and is currently being applied in academics. It is a systematic, integrated, and organizational way-of-life directed at the continuous improvement of an organization. Total quality learning is a new way of managing vocational and technical education that will help students and teachers take responsibility for their own learning. In view of the strategic role vocational and technical education plays in the production of competent and skilled manpower for socio-economic, industrial and technological advancement of the society, total quality management is proposed for quality assurance in the programme. This article therefore, examines the objectives of vocational and technical education in Nigeria and the need for total quality management in the programme. It explores the concept of total quality management and discusses its models and pillars most salient to education. The paper also looks at the implications of total quality management in vocational and technical education and its potential benefits. Recommendations are offered for proper implementation of total quality management tools and techniques to improve quality in the programme.

Introduction

Total quality management is a philosophy that was initiated in 1951 and named after W. Edwards Deming; the Deming Prize has long been recognized as an indicator of excellence in business (Walton, 1986). According to Sagar (2007) the main objective of total quality management is sustained (if not progressive) customer satisfaction through continuous improvement, which is accomplished by systematic methods for problem solving, breakthrough achievement and sustenance of good results (standardization). In another development, Izadi, et al (1996) opined that increased costs to producers, customers, and nations due to poor quality have fostered renewed appreciation of the quality assurance function. They further stated that educational programme such as vocational and technical education can be improved by implementing the quality criteria. In corroboration to this position, Sagar added that with little modifications the total quality management principles can be applied to education.

In the past, few attempts were made to improve the quality of management in higher education, and goals were rarely identified or followed (Kerr, 1991). Recently, there is so much concern among managers of vocational and technical education over the need for accountability, high cost of running the programme in the face of dwindling economy, shortage of qualified personnel, decreased revenue allocation to education, high rate of unemployment amongst graduates, and the need to bridge the gap between goals and employment needs in the country. Similarly, Ojo (2008) advocated that it has become highly necessary that vocational and technical education administrators address themselves to those management activities that would lead to improvement of performance, thereby leading to academic excellence in the programme. Okunamiri (2002) is of the view that the situation tends to explain the current trend of using various management techniques and the adoption of different planning strategies and models such as total quality management which previously were the monopoly of the business industries in vocational and technical education planning and administration.

In the work of Chowdury (2008), Edinboro University’s Business School adopted total quality management, and improvements in such areas as class scheduling and hiring have led to savings of close to one million dollars. The University of Pennsylvania has improved its methods of recouping corporate research charges thus reducing its outstanding charges from $18 to $13 million. According to Siegel and Byrne (1994), the National Alliance of Business’s Report “The Cutting Edge
of Common Sense" investigated seven leading examples of total quality management in education. In the report, they used the Baldrige Award Framework to compare the different approaches. They included George Westinghouse High School, New York; Millcreek Township Public Schools, Pennsylvania; Mt. Edgecumbe High School, Alaska; Rappahannock County Public School, Virginia; Prince William County Public Schools, Virginia; Southwestern Wisconsin Quality Consortium, Wisconsin; and Vermont Department of Education Vermont. The results showed that total quality management is transforming the educational system.

The position held in this paper is that in view of the strategic role vocational and technical education plays in the production of competent and skilled manpower for development of the society, there is the need for total quality management in the programme so that quality can be achieved. In order to actualize this position, the paper examines the objectives of vocational and technical education in Nigeria and the need for total quality management in the programme. It explores the concept of total quality management and discusses its models and pillars most salient to education. Recommendations are offered for the implementation of the quality criteria.

Vocational and Technical Education in Nigeria

According to the National Policy on Education (2004), vocational and technical education refers to those aspects of education which lead to the acquisition of practical and applied skills as well as basic scientific knowledge. In the work of Uko-Avionoh and Ajuluchi (2008), vocational education is aimed at making individuals that will be well armed with skills and knowledge to enable them secure employment either by establishing a small-scale outfit or by being gainfully employed thereby utilizing their skills. Also, Toby (2000) defined vocational education as that part of education which makes an individual more employable in one group of occupations than in another. Vocational and technical education was built on the production of graduates who will be equipped with all necessary skills and knowledge that will not only enable them fit into already existing job opportunities in the society but will also empower them with skills that will enable them establish their own and if possible create job opportunities for others (Okafor, 2008). In the opinion of Min (1995), vocational and technical education is perceived as one of the crucial elements in enhancing economic productivity in a society. In comparing the goals, practices, and outcomes of vocational education, Millord (1973) cited in Toby (2000) opined that if we put vocational and technical education as the central aim of education, a number of things will begin to fall in a clear perspective. From the aforementioned, it is clear that vocational and technical education holds an important position in the socio-economic and industrial development of the individuals and the society. Hence, systematic management can be offered as a qualification for meaning and success in achievement of its laudable objectives.

Academic programmes for vocational and technical education include: introductory technology, business studies, agricultural science, and home economics as pre-vocational subjects at the junior secondary school level. Subjects at the senior secondary and post secondary school levels include agriculture, metal work, building technology, food and nutrition, book keeping, typewriting, office management, woodwork, store-keeping, technical drawing, electrical/electronic, clothing and textiles, home management, marketing, accounting, secretarial education, automobile engineering education as outlined in the National Policy on Education (2004).

In the National Policy on Education (2004), the objectives of vocational and technical education are:

- To provide manpower in applied science, technology, and commerce particularly at sub-professional levels.
- To provide the technical knowledge and vocational skills necessary for agriculture, industrial, commercial, and economic development.
- To provide people who can apply scientific knowledge to the improvement and solution of environmental problems for the convenience of man.
- To give an introduction to professional studies in engineering and other technologies.
To give training and impart necessary skills leading to the production of craftsman, technician, and other skilled young men and women to have an intelligent understanding of the increasing complexity of technology.

Need for Quality Management in Vocational and Technical Education

The Nigerian National Policy on Education (2004) outlined numerous ways to improve the quality and standard of vocational and technical education for the benefit of the society. However, as of today, it appears as if much has not been achieved in terms of real quality in the programme. Vocational and technical education seems not to be performing well in the production of competent and skilled graduates for socio-economic, industrial and technological development of the nation. Meanwhile, Idialu (2007) defined quality as standards of something as compared to other things that is the degree of goodness or excellence. He remarked that quality in vocational and technical education ensures that students possess the knowledge, skills, competencies and understanding that are appropriate for their area of responsibility.

Toby (2000) lamented that despite the numerous benefits in the socio-economic life of the society in Nigeria, vocational and technical education is so misconstrued that it has become extremely difficult in management perspective, to administer the programme to meet societal ever changing needs. On the other hand, Fafunwa (1974) stated that many Africans see the programme as a means of restricting the education opportunities of their children confining them to the village which offers very little attraction to the youth and whose employment prospect is labour-intensive field of agriculture, which depends on the use of antiquated implement which requires back-braking labour for its operation.

Ekpenyong (2008) outlined some of the outstanding factors affecting quality vocational and technical education in Nigeria to include: *inadequate supply of technical teachers; *inadequate supply of equipment; *high cost of administering vocational and technical education; *misinterpretation of policy and public perception of vocational and technical education; *technical college-industry relationship problem; *conditions of service for technical teachers; and *inadequate guidance and placement service for technical students. Ojo (2008), Idialu (2007) and Ekpenyong (2008) amongst others lamented that these problems amongst others can be ameliorated through proper management and planning in the programme.

In the opinion of Okunamiri (2002), management techniques are necessary in education including vocational and technical education especially in developing countries where paucity of data and unreliability of their collection, scarcity of qualified data processing facilities and personnel, coupled with the urgency of providing quality education, call for careful systematic utilization of available resources. He expressed the view that the new trend is perhaps predicated upon the assumption that “management techniques” are so highly rationalized that the concepts are unitary and trans-organizational. Hence it has joined the “cult of efficiency” and is beginning to accept the popularity of these scheme- graphic methods such as total quality that permit better planning, proper visualization of decision processes, and the experiences of mathematical computer methods which facilitate easy access to qualified and quantified information concerning management operations and procedures. In assessing the quality of any educational system, Yoloyo cited in Ogwuche (2002) is of the opinion that the following factors should be taken into consideration (i) the quality of teachers (ii) the quality of facilities (iii) the quality of instruction(iv) the quality of evaluation procedure (v) quality of morale (vi) quality of administration and management.

A total quality approach to running vocational and technical education programme is advocated in Nigeria because the world has become a global village with extremely dynamic technology and depleting resources. Since the programme is historically rooted to prepare learners to perform to their fullest potential in such globalize and competing world, therefore, the programme itself must be vibrant and adaptable. More so, there is demand by students, industries, parents, and the public in general for proper justification of resources allocation to the programme. Another issue is that funding allocations for education generally and vocational and technical education in particular
are diminishing at a high speed. Consequently, there is the need to look for other ways to reduce the
cost of running the programme without necessarily reducing quality.

According to Toby (2000), the reasons for advocacy for quality management in vocational and
technical education include the following:

- Scope and complexity of vocational education programme offering and programme needs (e.g.
  agric science, business, health, home economics, and technical programme) including training
  for the handicapped.
- Demand for public justification of resources allocation to the programme.
- Necessity for unified programmes to solve problems facing vocational education.
- Realization for the active competition of vocational education with other sectors of the economy
  as well as within the field of education for limited resources.
- Urgency and need for public accountability for vocational and technical education programmes
  and services.
- Requirement for valid and timely information for decision making by vocational educators at all
  programme levels.
- Requirements for priorities among multiple objectives in vocational and technical education.

Concept of Total Quality Management

International Standard Organization, 8402: (1994), sees total quality management as a
management approach that centres on quality, based on the participation of all its members and aims
at long-term success through customer satisfaction, benefits to all members of the organization and to
society. Meanwhile, Adesina (1990) defined management as the organization and mobilization of all
human and material resources in a particular system for the achievement of identified objects in the
system. According to Roy, et. al. (1994) total quality management is a participative system
empowering all employees to take responsibility for improving quality within the organization. Total
quality management tools and techniques are used to identify the potential problems, frequency of
their occurrences, and method to control these problems and to adopt world class practices (World
Class Manufacturing, 2009). It is not a programme, it is a systematic, integrated, and organizational
way-of-life directed at the continuous improvement of an organization (Besterfield, 2003).

In assessing the application of total quality management in education, Hebert, Dellana and
Bass (1995) stated that there are four areas in which it can be applied in vocational and technical
education. One would involve the use of total quality management in improving school operations and
administrative functions. A second would involve integrating total quality management into the
curriculum. A third would be to use total quality management as a classroom teaching method.
Finally, total quality management could be used to manage education research activities.

Total Quality Management Pillars

In Bostingl (1992), total quality management pillars most salient to education include:

Principle 1: Synergistic Relationships

In this principle, an organization must focus, first and foremost, on its suppliers and
customers. In a total quality management organization, everyone is both a customer and supplier; this
concept emphasizes "the systematic nature of the work in which all are involved". In other words,
teamwork and collaboration are essential. There is emphasis on synergistic relationship between the
"suppliers" and "customers". The concept of synergy suggests that performance and production is
enhanced by pooling the talent and experience of individuals. In a classroom, teacher-student teams
are the equivalent of industry's front-line workers. The product of their successful work together is the
development of the student's capabilities, interests, and character. In this sense, the students are the
customers and the recipients of educational services provided for their growth and improvement. The
teacher and the school are suppliers of effective learning tools, environments, and systems to the
students, who are the school's primary customers. The school is responsible for providing for the long-
term educational welfare of students by teaching them how to learn and communicate in high-quality
ways, how to access quality in their own works and in that of others, and how to invest in their own
lifelong and life-wide learning processes by maximizing opportunities for growth in every aspect of
daily life. In another sense, the students are also workers, whose products are essentially their own continuous improvement and personal growth.

**Principle 2: Continuous Improvement and Self Evaluation**

The second pillar of total quality management applied to education is the total dedication to continuous improvement, personally and collectively. Within a Total Quality school setting, administrators work collaboratively with their customers: teachers. Gone are the vestiges of "Scientific management"... whose watchwords were compliance, control and command. The foundations for this system were fear, intimidation, and an adversarial approach to problem-solving.

Today it is in our best interest to encourage everyone's potential by dedicating ourselves to the continual improvement of our own abilities and those of the people with whom we work and live. Total Quality is, essentially, a win-win approach which works to everyone's ultimate advantage. According to Deming (1966), no human being should ever evaluate another human being. Therefore, total quality management emphasizes self-evaluation as part of a continuous improvement process. In addition, this principle also laminates to the focusing on students' strengths, individual learning styles, and different types of intelligences.

**Principle 3: A System of Ongoing Process**

The third pillar of total quality management as applied in academics is the recognition of the organization as a system and the work done within the organization must be seen as an ongoing process. The primary implication of this principle is that individual students and teachers are less to blame for failure than the system in which they work. Quality speaks to working on the system, which must be examined to identify and eliminate the flawed processes that allow its participants to fail. Since systems are made up of processes, the improvements made in the quality of those processes largely determine the quality of the resulting product. In the new paradigm of learning, continual improvement of learning processes based on learning outcomes replaces the outdated "teach and test" mode.

**Principle 4: Leadership**

The fourth total quality management principle applied to education is that the success of total quality management is the responsibility of top management. The school teachers must establish the context in which students can best achieve their potential through the continuous improvement that results from teachers and students working together. Teachers who emphasize content area literacy and principle-centered teaching provide the leadership, framework, and tools necessary for continuous improvement in the learning process.

**Models of Total Quality Management in Education**

The principles enunciated in total quality management are universal and can be utilized for improving the quality of any product or service (Sagar, 2007). Yet, implementation success defers depending on the style which the organization chooses to achieve objectives of quality improvement. Seymour and Collett (1992) offer three models of implementation in academics:

**The “Cascade” Model:** This involves educating and training senior officers of the programme in total quality management principles. These officers then develop a vision and plan for the organization that they pass down to division, unit heads and teachers, who also receive training in total quality management and subsequently implement the agreed-upon plan.

**The “Infection” or Bubble Up Model:** This model does not rely on top-level commitment but uses voluntary pilot programmes to demonstrate success and then promotes the total quality management philosophy through the organization reference to those programmes.
The “Loose-tight” Model: This mode is an approach in which senior officers function as facilitators as well as leaders. The officers demonstrate commitment and engage in detailed and comprehensive planning that involves employees and teachers, often assembled in teams, to execute quality improvement procedures. This model combines the strengths of the cascading and infection models.

Steps to implement Total Quality Management in Education
Crumrine and Runnels (1991) offered five simplified, specific steps to implement total quality management in vocational and technical education:

- **Commitment**: Investigate, evaluate, and adapt, and obtain commitment to total quality management.
- **Organizational Development**: Integrate total quality management into key management processes, educate, train, and offer support to employees.
- **Customer Focus**: Determine work teams, analyze customers, products/services.
- **Process Orientation**: Identity, standardize, and improve process control.
- **Continuous Improvement**: Develop method for identifying opportunities and integrating the improvement process into daily operations.

Benefits of Total Quality Management in Education
According to Fitzgerald (2009), the benefits of total quality management in education are:

1. Total quality management can help a school or college provide better service to its primary customers—students and employers.
2. The continuous improvement focus of total quality management is a fundamental way of fulfilling the accountability requirements common to educational and vocational and technical education reforms.
3. Operating a no-fear total quality management system with a focus on continuous growth and improvement offers more excitement and challenge to students and teachers than a "good-enough" learning environment can provide. Therefore, the climate for learning is improved.

Conclusion
The paper has examined the objectives of vocational and technical education in the production of competent and skilled manpower for social, economic and industrial development of Nigeria as a nation and the need for total quality management in the programme. Total quality management models and pillars that are most salient to education are presented. The paper also looks at the implications and potential benefits of total quality management in vocational and technical education. Recommendations are made for proper implementation of total quality management tools and techniques in other to improve quality in the programme.

Recommendations
1. There should be dedication to quality culture within vocational education programmes.
2. Teachers, students and all staff should work together as a team in order to achieve the desired quality in vocational and technical education.
3. All workers and students should be trained in quality assurance methods, processes, problem-solving techniques, and communication and evaluation at all levels.
4. Teachers and other staff should be empowered with due authority and be trusted to act responsibly.
5. Learning in vocational and technical education programmes should not be transactional but rather be transformational.
References


