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Analysis of Management Practices in Lagos State Tertiary Institutions through Total Quality Management Structural Framework

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Abstract
This research investigated total quality management practices and quality teacher education in public tertiary institutions in Lagos State. The study was therefore designed to analyse management practices in Lagos state tertiary institutions through total quality management structural framework. The selected public tertiary institutions in Lagos State were Lagos State University (LASU) Ojo, University of Lagos (UNILAG) Akoka, Michael Otedola College of Primary Education (MOCOPED) Inaforija, Epe, Federal College of Education Technical (FCET)Akoka, and Adeniran Ogunsanya College of Education (AOCOED) Oto-Ijanikin. A descriptive survey research design was adopted. A Total Quality Management practices and Quality Teacher Education Questionnaire (TQMP-QTEQ) was used to obtain data for the study. The structured questionnaire was administered on 905 academic and non-academic staff members and final year students of sampled institutions using purposive sampling technique. The questionnaire was content-validated using expert opinion method and Kaiser-Meyer-Olkin (KMO) statistics of sampling adequacy. In terms of the measure of reliability, the Cronbach's Alpha values for the two major constructs of the study are satisfactory – quality teacher education (0.838) and TQM (0.879). Their Kaiser-Meyer-Olkin (KMO) statistics of sampling adequacy were equally above the acceptable standard of 0.7. The hypotheses were tested at the 5 percent level of significance. Among the findings is that there is a substantial, significant, and positive relationship between Total Quality Management practices and quality teacher education in public tertiary institutions in Lagos State ($r = 0.695$; $p<0.05$). The study also found that there is a significant positive relationship between Total Quality Management practices and quality teacher education in public colleges of education in Lagos State ($r=0.315$; $p<0.05$), and in public universities too ($r=0.245$; $p<0.05$) One of the recommendations of the study is that an effective quality management is required to be put in place in all the public tertiary institutions in Lagos state.
Keywords: total quality management practices, quality teacher eduaction, public tertiary institutions, Lagos state, management analysis, framework

1. Introduction

In Nigeria, education is considered as an instruments "par excellence" for effecting national development (Federal Republic of Nigeria, 2004, p.iii). This might be the rationale why every researcher irrespective of the school of taught agrees to the fact that education is the bedrock of economic, political and technological development of a nation (Ogunnaike *et al.* 2014). In all human societies, education is meant to pass on to the new generations the existing knowledge of their physical environment, to introduce individuals to the organization of society, teach them skills for performing their jobs and enjoying their leisure, as well as to inculcate sound moral values in them for their own benefit and that of the society. Thus there is a symbiotic relationship between the education industry and the society at large. Education derives inspiration and nourishment from the society and in turn, its output contributes to the growth, renewal and development of the society (Esu and Junaid, 2010).

Every society, whether simple or complex, has its own system of educating its youth; and education for good life has been one of the persistent concerns of man throughout history. African education emphasizes social responsibility, job orientation, and political participation, spiritual and moral values. Moreover, education has been from the genesis of the World, the process through which man makes effort to better the lot of himself and his environment. At the family, community, state and federal government levels, education is discussed, planned and processed. It is believed that education makes both the person and the nation; it also influences values and attitudes (Olubadewo, 2006).

In Nigeria, there was the epoch of the traditional education when there were no formally established places for teaching and learning - the schools. The education of the child predominantly took place in the family where the child learnt by doing – learning the trade of the father if a boy or that of the mother, if a girl. In this traditional setting, all adults were teachers and all children were learners. The objectives were functional and utilitarian (Ukeje, 2000). Their education was qualitative enough to keep them afloat of the vagaries of life.

However, with the coming of the Europeans into Africa, aside their missionary activities, these non-Africans brought along western educational system, thus the first western school was built in Nigeria in 1843 by the Methodist. It was the Anglican Church Missionary Society that later established chains of missions and

schools in 1850s and followed by the Roman Catholics in the late 1850s. Consequently, Western education started spreading like wildfire throughout the country as the average Nigerian family started to embrace it, believing it to be a vehicle for social engineering, of moving from the lower rung of the economic ladder to the apex as epitomized by some educated Nigerians who rubbed shoulders with the white ruling class.

Ejiogu (2004), in his account of the development of private and public schools asserts that, originally, primary education in colonial Nigeria was run as private concerns of the missionaries who set up the primary schools. The basic aim of giving education then was for evangelism and the British colonial administration did not concern itself with the running of schools. This was the situation in 1842 to 1882. However, by 1882, it became obvious to government that the kind of education given by missionaries was inadequate to meet government's needs for skilled clerical staff in administration and commerce. In addition, there were criticisms of the educational system by the African elites (Fafunwa, 1991).

The colonial government also made its first direct intervention in the provision of higher education with the establishment of Yaba Higher College. Thus, the origin of the tertiary institutions is in Yaba College, founded in 1934 in Yaba, Lagos as the first tertiary educational institute in Nigeria. Yaba College was transferred to Ibadan, becoming the University College Ibadan, in 1948.The University was founded on its own site on 17th November, 1948. The site of the University was leased to the colonial authorities by Ibadan native chiefs for 999 years. The first students began courses in January of that year. Arthur Creech Jones, then Secretary of State for the Colonies, inaugurated the new educational institution. The University was originally instituted as an independent external college of the University of London, and then it was called the University College, Ibadan. The University of Ibadan became an independent university in 1962 (American Society for Quality, 2012). Since then, and up till date, not only have many other universities been established but there have also emerged other tertiary educational institutions in the name of monotechnics, polytechnics and colleges of educations both public and private ones.

However, according to Banji and Padmashree (2010), there has been a decline in quality in tertiary institutions over the last two decades owing to a confluence of factors acting in tandem, including: episodic and uncertain political-policy environments and declining investment in teaching and research facilities. It is further noted by Banji and Padmashree (2010) that, the Structural Adjustment Programme (SAP) of a one-time military regime led to reduced educational expenditure; slowed down the scientific and technological development in Nigeria which in turn results in poor and low skills mix of graduates, low employment opportunities and diminishing value of earned income.

Among other problems in Nigeria tertiary institutions are lack of research endowments and systematic research funding, limited funding, poor performance of universities, lack of funding for research facilities and programmes, physical and institutional infrastructure problems (Banji and Padmashree, 2010), non-friendly study environments (which includes cultism, physical environment, social influence among others), lack of adequate or practising quality management and lack of adequate continuous quality improvement in students' knowledge.

Meanwhile, the desire of all parents is to bequeath qualitative and functional education to their children from nursery school to the university level. This is in compliance with the axiomatic truth that quality education is the only permanent legacy that parents can pass on to their children to ensure their future success.

Quality education is a potent tool for socio-economic and national development. Consequently every nation makes conscious efforts to ensure that its educational system produces sound, effective and functional citizens. No wonder the UNESCO declaration requiring developing countries to devote 26% of their total annual budget to education.

Another major problem in the teacher education is the low rate of production of quality teacher from the tertiary institutions which result into ratio 1:76 of "teacher:pupils" in primary schools and secondary schools (Theobald *et al*. 2007). The low number of graduates going into the teaching profession is also of grave concern. The major causes are possibly due to inadequate funding levels and poor salaries.

Thus, in Nigeria, the need for well qualified teachers (hence quality teacher education system) has gained pre-eminence because it is considered that teacher education is a means of not only providing teachers with the necessary skills and knowledge needed to adequately carry out their teaching jobs but also of professional growth (Osunde and Omoruyi, 2004). Teacher education is the process of training that deals with the art of acquiring professional competence and growth.

However, the National Policy on Education, published in 1977 and revised in 1981, 1998, 2004 and 2013 clearly gives the goals of teacher education as:

a) producing highly motivated, conscientious and efficient classroom teachers for all levels of our education system;
b) encouraging the spirit of enquiring and creativity in teachers;
c) helping teachers to fit into the social life of the community and the society at large and to enhance their commitment to National goals;

d) providing teachers with the intellectual and professional background adequate for their assignment and to make them acceptable to changing conditions;
e) Enhancing teachers' commitment to the teaching profession.

Considering the significance of and demand for education, it becomes paramount that the nation improves both the quality of the education system and one of the main factors influencing it, namely teacher education. There must be a well structured and organized system of operation that will perfect the quality of teacher education system, produce quality teachers and quality teaching delivery for the public and private schools. Hence, during the twentieth century, a lot of management philosophies and theories have been developed often aimed at improving and making perfect the quality of organizations, industries as well as academic institutions. Gradually, some of these philosophies and theories have been adopted or adapted by organizations in the public sector as well. One of the main and efficient management system concepts that have proved efficient and successful over the years is that of Total Quality Management.

Bergman and Klefsjö (2003) define Total Quality Management as a "constant endeavour to fulfil and preferably exceed customer needs and expectations at the lowest cost by continuous improvement work to which all involved are committed, focusing on the process in the organization".

Total Quality Management system is needed in Nigerian secondary school education and also in the teacher education institutes. The use of Total Quality Management is therefore advocated in tertiary institutions in Nigeria as it ensures continuous improvement with quality as the golden mark.

TQM is about efficiency, productivity, long term success and adopting attitude that all individuals can contribute to the pursuit of continuous improvement. TQM is about driving out fear and breaking down barriers. It is about encouraging people to educate and develop themselves and believe that things can be continually improved. More than anything else, the improvement of quality is as much as the way people work together. Susan (1996) states that everyone needs to believe in quality and contribute towards it by constantly improving their standards.

The issues of quality and higher productivity are of utmost concern to the Nigeria tertiary educational institution system. The majority opinion in the country today is that the quality of the institutions of tertiary education is low arising from the performance of the graduates of these institutions. Some have even attributed the problems of the Nigerian state to the low quality of these graduates. This is logical in that a thoroughly educated man is more productive both to himself and society (Omotosho, 2009).

In this paper our focus is on the analysis of the extent to which the current practices of management in tertiary institutions conforms to any principle of TQM and system of TQM implementation through the use of a structural framework.

2. Literature Review and Theoretical Framework

The theoretical framework to be adopted for the study can be regarded as a "total quality journey" and it is diagrammatically represented in figure 1.

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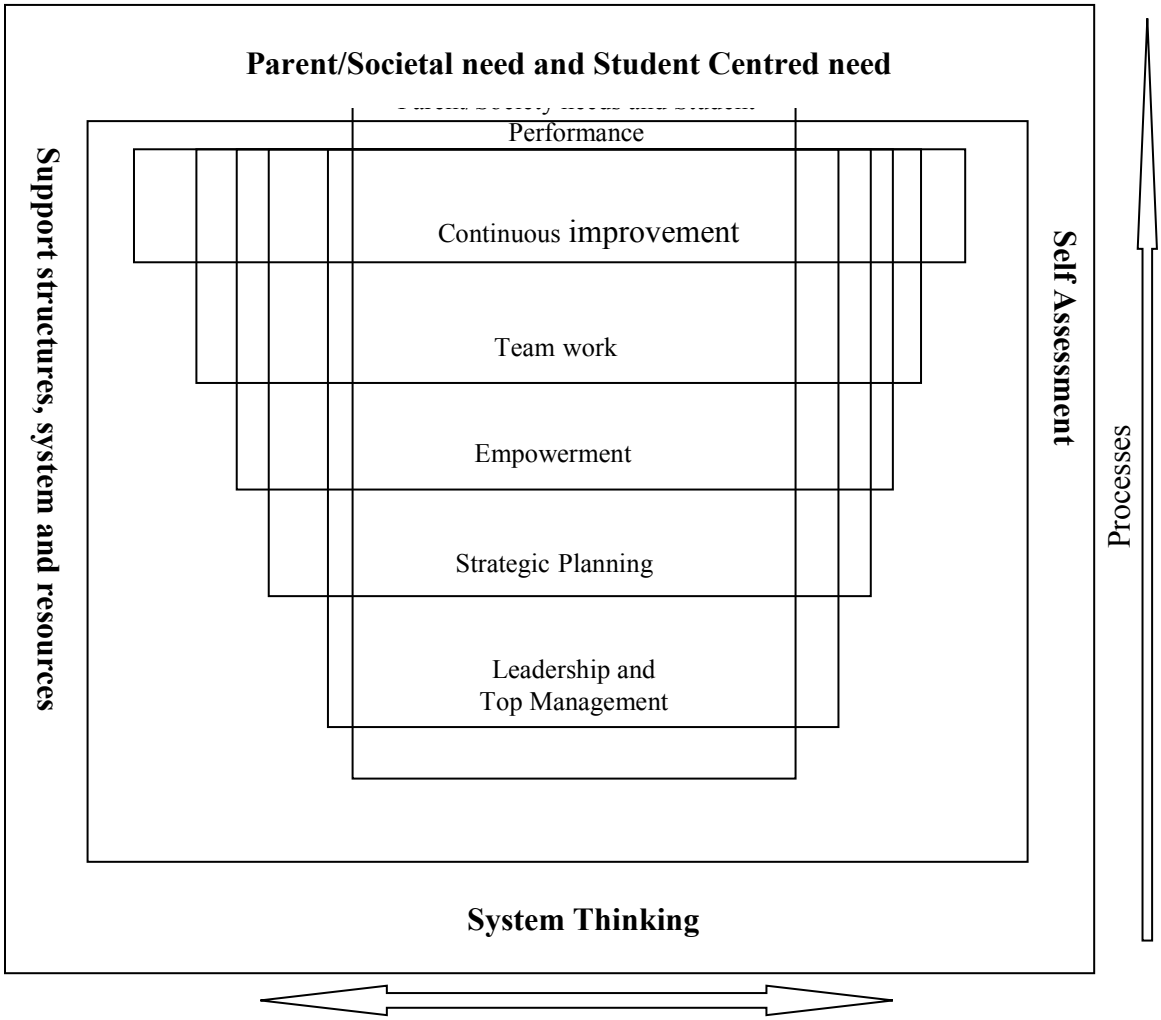

Fig 1: The framework: TQM telescopic framework for tertiary institutions
Source: adapted from Oschman (2009)

Figure 1 shows that, leadership and top management commitment, empowerment, communication, culture-forming, change management, customer and employee satisfaction, training, processes and systems thinking form the key and primary components of the framework which drive TQM transformation.

2.1 Understanding Quality and its Terminology

Over the years, growing pressures for improved performance have encouraged the adoption of more comprehensive approaches to reinvent the way business is done and how institutions are run with regard to quality. As a result, many public organizations have adopted quality innovation approaches with varying degrees of success (Phu, 2011). The hunt for quality has led to the emergence of many philosophies and rocket the race to stand on the edge of competition. Thus, many philosophers, especially business philosophers, have dealt with the definition of quality using different concepts and perspectives, though with high degree of similarities within the industrial context. It is therefore critical to study the meaning of quality from the understandings of various philosophers so that the larger picture of quality management can be well understood.

Sallis (2005) describes quality as _a slippery concept‘. The word quality comes from the Latin (*qualis*) meaning ―what kind of‖. The quality of something can be said to be a part of its nature. Quality in the technical sense is largely a relative concept. The relative definition views quality not as an attribute of a product or service, but as something which is ascribed to it—_the quality of your essay varies between good and excellent‘. Quality in this sense is about being measured against criteria. It is not an end in itself, but a means by which the end product is judged as being up to (or not up to) standard.

Bilich and Neto (2000) state that quality as a macro function of institutions must be present in the day-to-day running of an institution, in aspects such as establishment of policies, the decision process, selection of

personnel, allocation of resources, definition of priorities and service delivery to satisfy customer requirements. In addition to this, the authors state that the quality approach as a strategic element has brought to institutions a new manner of conceiving quality as it engages the top decision-makers of the institution in the effort to better performance in service delivery.

According to Dale (2003), quality, reliability, delivery and price build the reputation enjoyed by an institution. Quality is the most important of these competitive weapons and is an extremely difficult concept to define in a few words in order to agree on a consensus definition; a trait it shares with many phenomena in business and social science (Hopper, 2001).

Rouse (2011) defines Quality control (QC) as a procedure or set of procedures intended to ensure that a manufactured product or performed service adheres to a defined set of quality criteria or meets the requirements of the client or customer. Quality Control is similar to, but not identical with, Quality Assurance (QA).

Quality control and inspection are processes that ensure that only products that meet a pre-determined specification leave the factory gate. Quality control is the oldest quality concept. It refers to the detection and elimination of components or final products that are not up to standard. However, quality control is an after-the-event process. It is divorced from the people who produce the product. They are necessary processes under mass production, but they are often wasteful and expensive, involving considerable amounts of scrap and reworking. Quality control and inspection in the past 20 years have increasingly been seen as uneconomic and wasteful, as they do not assure that the workforce care about quality. Many companies are replacing or augmenting them with methods of ***quality assurance*** and ***quality improvement*** that seek to build quality into the production process by returning to workers their responsibility for quality (Sallis, 2005).

After the prevalence of the quality improvement and assurance after Second World War, many world economies start to wonder about the exceptional success of the Japanese companies. This curiosity led to their discovery of the new management theory (now named Total Quality Management) introduced by Edwards Deming into the Japanese industry. Total Quality Management incorporates quality assurance, and extends and develops it. TQM is about creating a quality culture where the aim of every member of staff is to delight their customers, and where the structure of their organization allows them to do so (Sallis, 2005).

It is important to mention that the evolution of Total Quality Management was the result of the hunt for Quality since the past centuries by many philosophers. According to Dale (1999), one common description of the historical development of quality improvement is the use of four stages, namely Quality inspection, Quality assurance, Quality control and finally Total Quality Management, with Total Quality Management (TQM) being a focus on external and internal customers, processes and quality improvements (Table 1). The four stages represent the broadened and shifted focus of systems for improving and managing the quality since the end of the 70s. Total Quality Management as will be seen later, moved from a predominantly narrow and mechanistic approach to a more subjective and broader organizational philosophy (Danvenport, 1996; Wilkinson and Willmott, 1994). The hierarchy of Quality Concepts is shown in figure 2.

Table 1: Stages in Improving and Managing Quality

Stage	Characteristics
Pre – 1900	***Quality as in integral element of craftsmanship***
1900 – 1920	***Quality Control by Foremen***
1920 – 1940	***Inspection-based Quality Control***
1940 – 1960	***Statistical Process Control***
1960 – 1980	***Quality Assurance and Total Quality Control***
1980 – 1990	***Total Quality Management (TQM)***
1990 – 2000	***TQM and the culture of continuous improvement***
2000 – present	***Organization-wide Quality Management***

Source: *http://content.authorstream.com/ppt/157007_633714122495836250.pptx*

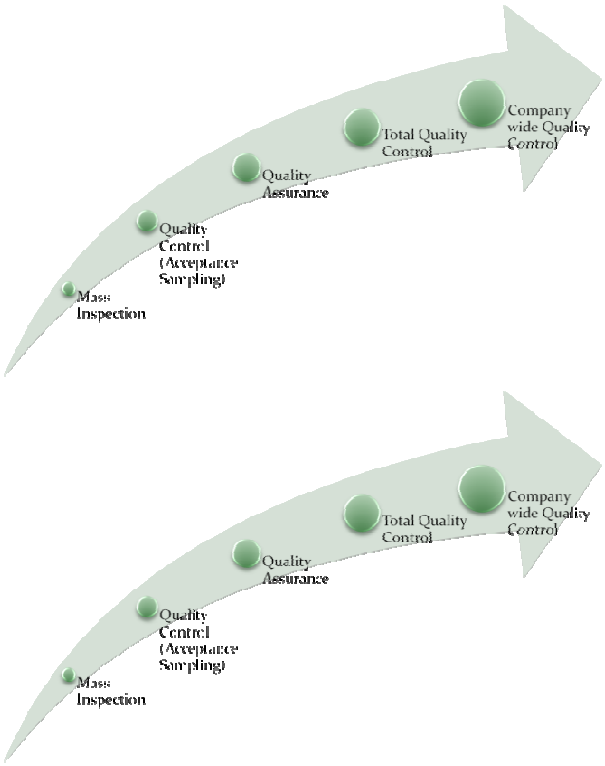

Fig 2: The hierarchy of Quality Concepts.
Source: *http://content.authorstream.com/ppt/157007_633714122495836250.pptx*

The Simple Objective of Total Quality Management is ―Do the right things, right the first time, every time.‖ Several names have been applied to Total Quality Management since the first days of the quality movement: Just-In-Time (JIT) and Total Quality Control (TQC) in the 1980‘s, Total Quality Management (TQM) in the 1990‘s, and then the Lean Six Sigma since the 2000‘s. However, by whatever the names it carries, these names all refer to quality and continuous improvement process in organizations with a focus on the customer. In other words, TQM has not gone away; it has just been renamed over time (Phu, 2011). Ever since the recognition of this management theory, the drive for Total Quality Management has always been at the top of the agenda of many organizations in the private sector. In the past decades, Total Quality Management began to spread far beyond the private sector into the public sector (Blundell and Murdock, 1997; Bowman and Hellein, 1998; Koehler and Pankowski, 1996; Miller, 1998; Poister and Harris, 1997). Many public organizations have adopted quality innovation approaches with varying degrees of success (Phu, 2011). The Total Quality Management system is summarized in figure 3.

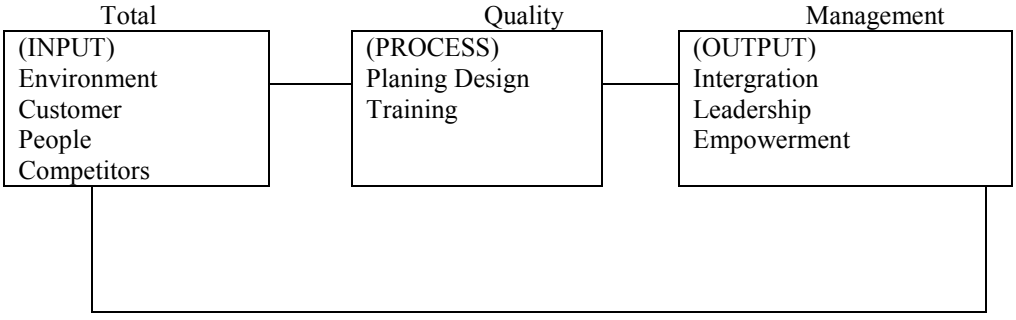

Fig 3: Total Quality Management System
Source: Greenwood and Gaunt (1994)

Chartered Quality Institute (CQI) (2013) defines Total quality management as a management approach centered on quality, based on the participation of an organisation's people and aiming at long term success. This is achieved through customer satisfaction and benefits for all members of the organisation and society. In other words, TQM is a philosophy for managing an organisation in a way which enables it to meet stakeholder needs and expectations efficiently and effectively, without compromising ethical values. The basis for TQM is to prevent defect or trouble with the Quality from the beginning. Applying statistical techniques and management

skills to examine and supervise factors that may affect on the appearance of defects during the whole process, in research phase, design phase, supply phase and in other services relating to the development of Quality. Applying TQM will not only improve the product quality but also enhance the effectiveness of the whole system due to the principle "always do correctly the correct works at the very beginning".

Gaither (2000) defined TQM as the process of changing the fundamental culture of an organization and redirecting it towards superior product or service quality.

2.1.1. Indicators of Analysis of Quality Management in Education

The quality of education and training is considered in all member states to be a concern of the highest political priority. High levels of knowledge, competence and skills are considered to be the very basic conditions for active citizenship, employment and social cohesion (European Commission, 2000). According to the presentation of UNICEF at the meeting of The International Working Group on Education Florence in Italy 2000, UNICEF presented the meaning of quality education to include the following:

1. Learners who are healthy, well-nourished and ready to participate and learn and supported in learning by their families and communities.
2. Environments that are healthy, safe, protective and gender-sensitive, and provide adequate resources and facilities.
3. Content that is reflected in relevant curricula and materials for the acquisition of basic skills, especially in the areas of literacy, numeracy and skills for life and knowledge in such areas as gender, health, nutrition, HIV/AIDS prevention and peace.
4. Processes through which trained teachers use child-centred teaching approaches in well-managed classrooms and schools and skilful assessment to facilitate learning and reduce disparities.
5. Outcomes that encompass knowledge, skills and attitudes, and are linked to national goals for education and positive participation in society.

Therefore, it becomes apparent that the quality of education system is as a result of all the qualities of its individual consisting elements. There must be quality of management, quality of faculty, quality of examination and assessment, quality of performance (students and teachers), quality of infrastructures, quality of teachers and others. These are the indicators of quality management in education.

2.1.2. Quality learners, Quality learning environment, Quality content, Quality processes and Quality outcomes

It also covers the views of other researchers aligned with it.

1. Quality learners

a. **Good health and nutrition:** Adequate nutrition is critical for normal brain development in the early years, and early detection and intervention for disabilities can give children the best chances for healthy development. Prevention of infection, disease and injury prior to school enrolment are also critical to the early development of a quality learner.

b. **Early childhood psychological development experiences:** The benefits of good early childhood programmes include better psychosocial development. Effective and appropriate stimulation in a child's early years influences the brain development necessary for emotional regulation, arousal, and behavioural management. A child who misses positive stimulation or is subject to chronic stress in the pre-school years may have difficulty with psychosocial development later in life (McCain and Mustard, 1999).

c. **Regular attendance for learning:** To achieve academically, children must attend school consistently.

d. **Family support for learning:** The effects of schools in poor areas can often outweigh the impact of family background and practices (Fuller, 1999). Parents with little formal education may also be less familiar with the language used in the school, limiting their ability to support learning and participate in school-related activities. Healthy children with positive early learning experiences and supportive, involved parents are thus most likely to succeed in school (UNICEF, 2000).

2. Quality learning environment

a. Physical elements

i. **Quality of school facilities:** The quality of school facilities seems to have an indirect effect on learning, an effect that is hard to measure (UNICEF, 2000). According to Fuller (1999), some authors argue that "extant empirical evidence is inconclusive as to whether the condition of school buildings is related to higher student achievement after taking into account students' background.

ii. **Interaction between school infrastructure and other quality dimensions:** The presence of adequate instructional materials and textbooks, working conditions for students and teachers, and the ability of teachers to undertake certain instructional approaches speak volume in educational attainment.

iii. **Class size:** Though, quantitative relationships between class sizes and academic achievement rarely take other key quality factors into account, such as teachers' perceptions of working conditions and their sense of efficacy but it does add to environment conduciveness.

b. Psychosocial elements

i. **Peaceful, safe environments especially for girls:** Within schools and classrooms, a welcoming and non-discriminatory climate is critical to creating a quality learning environment.

ii. **Teachers' behaviour that affects safety:** Teacher behaviours affect the quality of the learning environment since learning cannot take place when the basic needs of survival and self-protection are threatened.

iii. **Effective school descriptive policies:** Students, teachers and administrators should agree upon school and classroom rules and policies and these should be clear and understandable.

iv. **Inclusive environments:** Reducing other forms of discrimination is also critical to quality improvement in learning environments. Most countries, in all parts of the world, struggle with effective inclusion of students with special needs and disabilities. In general, continued restructuring of most learning environments needs to occur to improve learning opportunities for children of all abilities and backgrounds.

v. **Non-violence:** War and other forms of interpersonal and group conflict clearly have an impact on children's mental health and their ability to learn.

c. Service delivery

i. **Provision of health services:** Provision of health services and education can contribute to learning first by reducing absenteeism and inattention.

3. Quality content

a. **Curriculum - Student centred, non-discriminatory, standard-based curriculum structure:** Quality content refers to the intended and taught curriculum of schools. National goals for education, and outcome statements that translate those goals into measurable objectives should provide the starting point for the development and implementation of curriculum (UNICEF, 2000). Curriculum should be based on clearly defined learning outcomes and these outcomes should be grade-level appropriate and properly sequenced.

b. **Uniqueness of local and national content:** In the main subject areas of primary education, which include language, mathematics, science and social studies, little variation is found among different regions in the developing world. Local level interests may also have an impact on and contribute to the quality of educational content.

c. **Numeracy**: Numeracy skills not only give people more control in their daily lives through, for example, more informed management of household or small enterprises, but also allow for more effective participation in communities and nations, since understanding many collective issues requires an ability to make sense of financial and other quantitative information.

d. **Life skills:** The term 'life skills' can be broadly interpreted, and is often assumed to include such topics as health, hygiene, etiquette, and vocational skills. In UNICEF, however, life skills are defined as "psycho-social and interpersonal skills used in every day interactions…not specific to getting a job or earning an income". Life skills curriculum focuses on attitudes, values and behavioural change, rather than seeking to provide young people with a body of knowledge about a set of topics.

e. **Peace education**: Peace education seeks to help students gain the ability to prevent conflict, and to resolve conflict peacefully when it does arise, whether on the intrapersonal, interpersonal, intergroup, national or international level.

f. **Challenges in reaching large number of children with quality content:** Among things mentioned are that teachers often find curricular integration and inter-disciplinary difficult especially when the teacher does not have a role in curriculum design. Subjects that do not appear on important examinations are not always taken seriously. Political and economic instability can lead to discontinuity in policies and programmes, as well as teacher and administrator turnover.

2.1.3. Total Quality Management Implementation Techniques in Schools

As quoted by Lameei (2005), "there is no one best way to implement TQM (Gaucher, 1993). There is no one best way…which suits all organizations and cultures (Dale, 1999). Our organizations and their culture are all different … therefore, the implementation plan that worked well for one [organization] will never fit exactly with the needs of another [organization] (Goetch, 2000). You may understand the "what" and the "why" of TQM, but the more difficult question is, "How" do you implement a TQM effort?" (Bietch, 1994). From the start, organizations must accept that TQM is a long and arduous journey, which has no end (Dale, 1999). All of the above quotations show that implementation of TQM is difficult; there is no one best way for its implementation; it needs a long term view; and every organization must have a tailor-made approach to implementing TQM, which is suited to the needs of the organization. There has been emphasis on phased and step by step introduction of TQM into the organizations (Dale, 1999; Jackson, 2001; Ovretoeit, 2000; Gaucher, 1993; Goetch, 2000; Evans, 1999).

Lameei (2005) states further that although implementation of TQM actually starts with strategic planning (Biech, 1994), however fertile soil for its implementation must be prepared through preliminary steps, which are absolutely dependent on right understanding of TQM and appropriate start of it (Dale, 1999). This shows that the top management teams must take more active role than the past, for setting the ground for TQM

implementation (Dale, 1999 and Hardison, 1998). According to Lachian and Paul (1999), although TQM was originally intended for industrial sector, Deming (1986) pointed out in the preface of his book "Out of Crisis" that his management principles could be applied equally well in service sectors. The service sectors, he emphasized, "include government service, education and the mail". Figure 4 shows a simplified model of a secondary school to further illustrate the level of awareness, recognition and practice of quality management in the tertiary educational institutions in Lagos State and its impact on quality teacher education

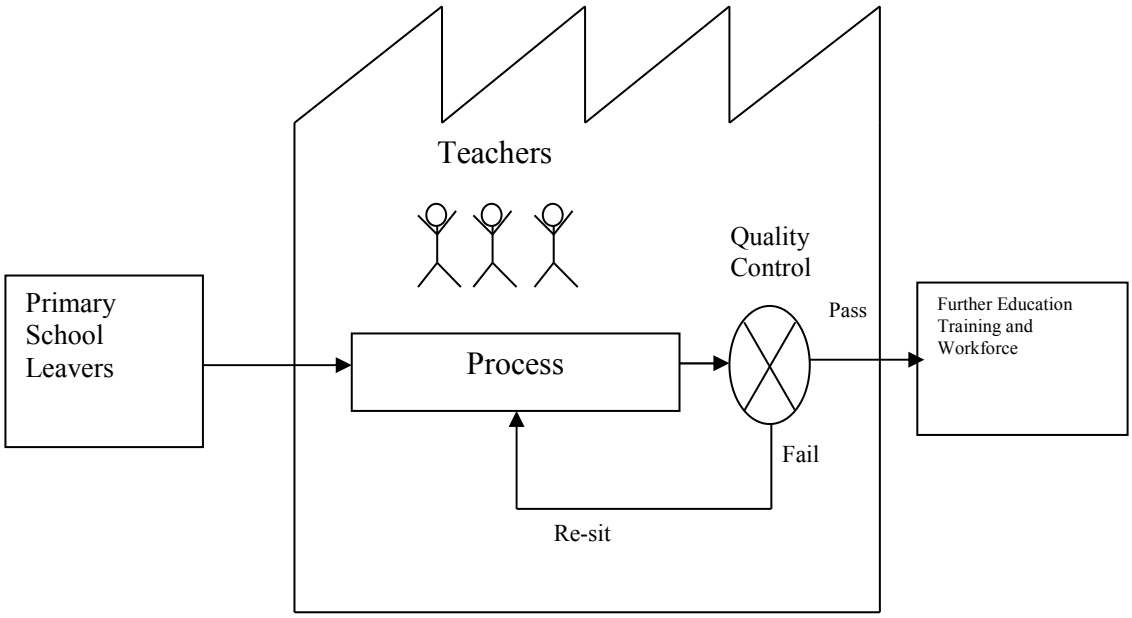

Fig 4: A simplified model of a secondary school.
Source: Lachian and Paul (1999).

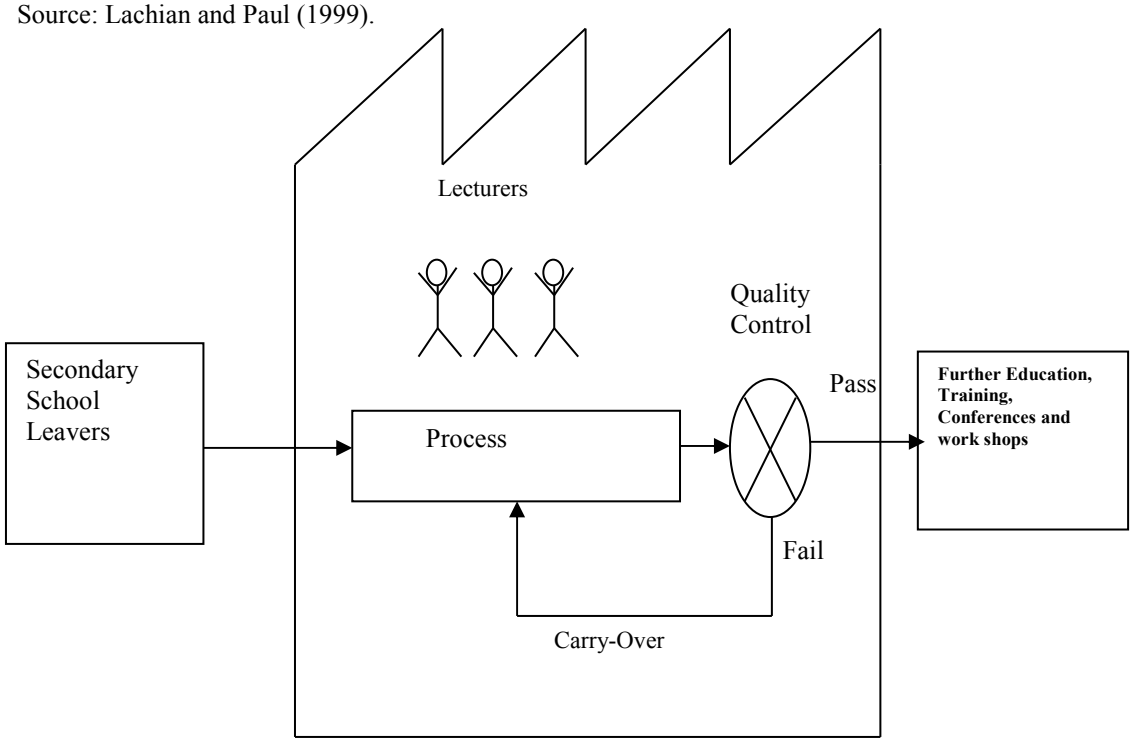

Fig 5: A simplified model of tertiary institutions.
Source: Modified version of Lachian and Paul (1999).

In Fig 4, primary school leavers enter secondary school, taught by teachers and sit to either pass or fail examination. If passed, the student is ready to be received by the external customers (workforce, tertiary institutions, society and so on). If failed, the student is returned into the system; to re-sit or drop out to join the workforce as unskilled worker. Meanwhile, in figure 5, secondary school leavers enter a tertiary institution be it

a college of education, polytechnic, monotechnic or university, taught by lecturers and sit to either pass or fail examinations. If passed, the student is ready to be received by the external customers (workforce, tertiary institutions for further studies (Masters and PhD), society and so on). If failed, the student is returned into the system; to re-sit in form of carry-over or drop out to join the workforce as semi-skilled worker.

2.1.4 Research Questions

The following research questions were raised as a guide to the study:

Q1: What is the relationship of Total Quality Management practices to quality teacher education in public tertiary institutions in Lagos State?

Q2: Is there any relationship between Total Quality Management practices and quality teacher education in public colleges of education in Lagos State?

Q3: What is the relationship between Total Quality Management practices and quality teacher education in Federal Government owned tertiary institutions in Lagos State?

Research Hypotheses

Ho1: There is no significant relationship between Total Quality Management practices and quality teacher education in public colleges of education in Lagos State.

Ho2: There is no significant relationship between Total Quality Management practices and quality teacher education in public universities in Lagos State.

Ho3: There is no significant relationship between Total Quality Management practices and quality teacher education in State Government owned public tertiary institutions in Lagos State.

3.0 Methodology

The research design for this study is a descriptive research survey design. This research design describes a set of guidelines that connects theoretical paradigms to strategies of inquiry and methods for collecting empirical material.

3.1 The Study Population

The population of the study included all the conventional public tertiary institutions in Lagos State.

The population of the study included the Faculty of education in the universities and all colleges of education that are government owned. A total of five public tertiary institutions in Lagos State that constituted the population for the study included:

- Faculty of Education - Lagos State University (LASU), Ojo.
- Faculty of Education – University of Lagos (UNILAG), Akoka.
- Adeniran Ogunsanya College of Education (AOCED), Ijanikin.
- Federal College of Education (Technical) (FCET), Akoka.
- Michael Otedola College of Primary Education (MOCOPED) Inaforija, Epe.

3.1.1 The Study Sample and Sampling Technique

The study sample was constituted by the study population though the study respondents were purposively selected. Each university (Faculty of Education) consisted of 5 sample departments. From each of the departments of each university, 10 lecturers, 5 non-academic staff and 20 final year students were randomly selected in addition to the Head of Departments, Dean of the Faculty and the Vice Chancellor of each university as participants in the study.

The three Colleges of Education followed exactly the selection method with that of the universities except the inclusion of Provost instead of Vice Chancellor. Michael Otedola College of Primary Education has 5 sample Schools of study just like Adeniran Ogunsanyo College of Education while Federal College of Education Technical consisted of 4 sample Schools of study. One department was also randomly chosen from each school to be part of the study from where the participants were randomly selected.

- **Faculty of Education - Lagos State University (LASU), Ojo:** Educational Foundation and Counselling Psychology Department; Educational Management Department; Language, Arts & Social Science Education Department; Physical & Health Education Department and Science & Technology Education Department.
- **Faculty of Education – University of Lagos (UNILAG), Akoka**: Human Kinetics Education Department; Educational Foundation Department; Arts and Social Science Department; Educational Administration Department; and Science and Technology Education Department.
- **Michael Otedola College of Primary Education, Inaforija, Epe:** School of Education, School of Arts; School of Social Sciences, School of Vocational & Technical Education; and School of Sciences. One department was chosen from each school.
- **Federal College of Education Technical (Akoka):** School of Arts and Social Science; School of Science; School of Languages; and School of Technical and Vocational Studies. One department was randomly chosen from each school.

- **Adeniran Ogunsanya College of Education (Oto-Ijanikin):** School of Arts; School of Social Science; School of Science; School of Languages; and School of Technical and Vocational Studies. One department was also randomly chosen from each school to be part of the study. Table 3 illustrates the distribution of sample.

Table 2: The distribution of sample.

	UNILAG	LASU	MOCOPED	AOCOED	FCET
No of Department	***5***	***5***	***5***	***5***	***4***
Vice Chancellor /Provost	1	1	1	1	1
Dean of Faculty/Schools	1	1	5	5	4
Head of Department	5	5	5	5	4
Academic Staff	50	50	50	50	40
Non-academic staff	25	25	25	25	20
Final Year Students	100	100	100	100	100
Sum	182	182	186	186	169
	Sum Total: **905**				

Source: Field Survey, 2013.

The respondents were eventually stratified into three educational attainment grade levels which were the characteristic of this study; the management (consisting of Vice Chancellor/Provost, Dean of Faculty and Head of Department), the staff (academic and the non-academic) and final year students across all the selected institutions. The study employed purposive simple random and stratified sampling approaches.

The purposive sampling method was used so that a proportionate representation in the sample might be the guiding principles in the choice of those with different educational attainment and positions that will fall into the sample class of analysis. The simple random sampling method was used in order to give equal chance of representation to all the members of the population that will be studied. This minimized the degree of bias that may inject into the selection of respondents. In addition, the stratified sampling method was used in order to ensure a representation of every possible segment or stratum of the population.

3.1.2 Research Instrument

This study is descriptive in nature and in order to test the hypotheses, a questionnaire was developed through as review of literature and the view of experts. The researcher constructed a questionnaire tagged Total Quality Management practices and Quality Teacher Education Questionnaire (TQMP-QTEQ). The questionnaire consisted of three sections. The questionnaire comprised 104 items in totality; nine items on the institution and the respondent, fifty-seven items on quality teacher education and thirty-eight items on Total Quality Management.

Respondents attended to the questionnaire by filling in the blank spaces and making a tick in the appropriate box that corresponds to their response to an item. In the Likert-type scale sections of the questionnaire, respondents made a circle round the figure that depicts their response to the various items therein.

Table 3: Dependent and Independent variable

Instrument	**Variables**	**Indicators**
Dependent Measures		
Quality Teacher Education Questionnaire	Quality teacher education	Quality learners
		Quality learning environment
		Quality content
		Quality process
		Quality lecturers
		Quality supervision and support
Independent Measures		
Total Quality Management Questionnaire	Quality teacher education	Management of leadership
		Measurement and feedback
		Continuous improvement
		Resource and infrastructural management
		Work environment and culture
		Education and training
		Process of the institution operation

Source: Developed by the Researcher for the study, 2014.

3.1.3 Validity of the Instrument

Face and content validity was used to validate the instrument. The instrument was constructed with the assistance of experts in Department of measurement and evaluation , Lagos State University; the supervisor and some Senior Lecturers in the area of Educational Management using the following criteria: relevance of items to

the purpose of the study and hypotheses, appropriateness of content and structure of the statement for face, content, construct and concurrent validity of the instrument. Validity was carried out to ensure necessary corrections and suggestions before final administration of the instrument.

Furthermore, factor analysis was employed using Kaiser-Meyer Olkin (KMO) value above 70 percent and Bartlet test of Sphericity with p-value less than 0.05. Results show that the indicators truly measure the construct. In this study, the KMO for quality teacher education (Section two) indicators were greater than 0.70, that is 0.885, 0.700, 0.768, 0.846, 0.883 and 0.744 for quality learners, quality learning environment, quality content, quality process, quality lecturers and quality supervision and support respectively. For Total Quality Management practices indicators, the KMO were found greater than 0.70, that is 0.811, 0.784, 0.841, 0.799, 0.719, 0.849 and 0.755 for management of leadership, measurement and feedback, continuous improvement, resource and infrastructural management, work environment and culture, education and training, and system and process of the institution operation respectively.

The result also showed that the Bartlet test of Sphericity were all significant at 0.000 for all sub-sections, which indicates correlation between variables and possibility of sharing factors.

3.1.4 Reliability of the Instrument

Cronbach's alpha coefficients were calculated to estimate the reliability of TQMP-QTEQ. Sekaran (2000) advises that if Cronbach's alpha is more than 0.6, it means reliability of indicator is acceptable. The Cronbach alpha reliability test results from the data collected at the Faculty of Education in University of Lagos and School of Vocational & Technical Education in Michael Otedola College of Primary Education are presented in Table 4.

Cronbach's alpha of 57 items used to describe quality teacher education is 0.838, and Cronbach's alpha is lower than 0.838 when any item is deleted. Analysis of result means quality teacher education has high reliability. Therefore, for this research, the QTEindicators constitute a reliable measure of quality teacher education.

Cronbach's alpha coefficient was calculated in order to assess the reliability of Total Quality Management Practices indicators for this research. The average Cronbach's alpha reliability coefficient of 38 items used to describe Total Quality Management Practices is 0.879 and Cronbach's alpha is lower than 0.879 when any item is deleted. The result shows that Total Quality Management Practices variable has high reliability. Therefore, for this research, TQM practices indicators constitute a reliable measure of the variable

Table 4: Cronbach Alpha Item-Total Statistics for TQM Practices indicators

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ML1	120.8012	173.591	-.413	.895
ML2	120.5673	147.044	.752	.868
ML3	120.6082	146.843	.794	.868
ML4	120.5263	171.411	-.442	.890
ML5	120.1053	158.587	.358	.877
ML6	120.4064	170.025	-.355	.889
MF1	120.5146	149.541	.731	.870
MF2	120.6784	145.409	.773	.867
MF3	119.9678	164.899	-.108	.885
MF4	120.4737	146.731	.730	.868
MF5	120.3275	169.277	-.327	.888
MF6	120.4678	158.590	.210	.879
MF7	120.1170	142.021	.925	.864
CI1	122.2047	159.313	.296	.877
CI2	120.6082	148.462	.659	.870
CI3	120.2398	153.027	.563	.873
CI4	119.8977	149.693	.901	.869
CI5	120.0906	167.332	-.335	.885
RIM1	120.4620	147.041	.755	.868
RIM2	120.6784	146.741	.739	.868
RIM3	120.3567	169.644	-.296	.890
RIM4	120.4678	146.789	.763	.868
RIM5	120.3392	157.937	.266	.878
WEC1	120.6170	151.914	.653	.872
WEC2	120.6520	149.013	.725	.869
WEC3	120.1988	168.119	-.391	.885
WEC4	120.5497	159.844	.127	.881
WEC5	120.2368	147.759	.690	.869
ET1	120.4211	152.121	.641	.872
ET2	120.0877	167.330	-.335	.885
ET3	120.2632	159.755	.265	.878
ET4	120.5205	146.890	.543	.872
ET5	120.2865	146.551	.764	.868
SPI1	120.1140	148.418	.750	.869
SPI2	120.5556	145.814	.780	.867
SPI3	120.1170	167.200	-.307	.885
SPI4	120.2251	157.577	.309	.877
SPI5	120.2398	144.066	.751	.867

Source: SPSS Output, December, 2014

3.1.5 Administration of the Instrument

The researcher made personal administration of the questionnaire on the respondents. Permission was sought from the sample institutions before administering on the staff.

Due to the large number of items in the questionnaire, respondents were given a maximum of one week to attend to the questionnaire and return it. Incentives to partially compensate for the stress in attending to the instrument by way of token gifts were offered in order to have a high percentage of returns in good time. Out of the 905 copies of the questionnaire administered, 778 were retrieved intact showing a return of 85.9%.

The quantitative data collected under the survey were compiled, sorted, edited, classified and coded into a coding sheet and analyzed using a computerized data analysis package known as Statistical Package for Social Science (SPSS) version 21.0 for window.

4.0 Findings

In this section there will be the presentation of data and results of findings.

4.1 Demographic Analysis

This presents a description of the general information of the respondents as contained in Section A of the questionnaire. The information include data on the name of institution, sample number of staff in the faculties, sample number of staff in the faculties, institution nomenclature, sample number of final year students in the faculties, quality management terms, academic cadre, years' of job experience and highest academic qualification. Tables 4.1 to 4.10 present the analysis of general information on the respondents.

Table 5: Sample Number by Institutions

Name of Institution		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	UNILAG	157	20.2	20.2	20.2
	LASU	158	20.3	20.3	40.5
	FCET	145	18.6	18.6	59.1
	MOCOPED	150	19.3	19.3	78.4
	AOCOED	168	21.6	21.6	100.0
	Total	778	100.0	100.0	

Table 5 shows that out of the total respondents in the survey, 157 (20.2%) participants are from University of Lagos, 158 (20.3%) participants are from Lagos State University, 145 (18.6%) participants are from Federal College of Education (Technical) Akoka, 150 (19.3%) participants are from Micheal Otedola College of Primary Education, and 168 (21.6%) participants are from the Adeniran Ogunsanya College of Education, Oto-Ijankin. This findings shows that majority of the respondents are from University of Lagos, Lagos State University and Adeniran Ogunsanya College of Education, Oto-Ijankin.

Table 6: Sample Number of Staff by Institutions

Name of Institution		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	UNILAG	77	9.9	21.4	21.4
	LASU	74	9.5	20.1	41.5
	FCET	62	8.0	17.2	58.7
	MOCOPED	72	9.3	20.0	78.7
	AOCOED	75	9.6	20.8	100.0
	Total	360	46.3	100.0	
Missing	System	418	53.7		
Total		778	100.0		

Table 6 indicates that UNILAG had highest numbers of staff (21.4%) that participated in the study, followed by AOCOED (20.8%), LASU (20.1%), MOCOPED (20.0%), and FCET (17.2%). This implies that UNILAG has the highest number of staff participants in the study.

Table 7: Sample Number of Academic and Non-Academic staff

Number of Staff		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Academic Staff	240	30.8	66.7	66.7
	Non-Academic Staff	120	15.4	33.3	100.0
	Total	360	46.3	100.0	
Missing	System	418	53.7		
Total		778	100.0		

Table 7 indicates that academic staff formed the majority (240 or 66.7%) of the staff respondents while non-academic staff were only 120 (33.3%). This means that majority of the respondents in staff cadre are academic staff. This group of people also formed the main thrust of the research beign directly involved in the activities of the study variables.

Table 8: Quality Management Terms' Adoption

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Quality Control	132	17.0	17.0	17.0
	Quality Assurance	78	10.0	10.0	27.0
	Total Quality Management	232	29.8	29.8	56.8
	System Thinking	149	19.2	19.2	76.0
	Lean Six Sigma	187	24.0	24.0	100.0
	Total	778	100.0	100.0	

Table 8 illustrates the quality management term adopted by the institutions. The study considered the terms quality control, quality assurance, systems thinking, total quality management and lean six sigma. As indicated on Table 8, majority of the respondents (232 or 29.8%) identified with the adoption of total quality management while others identified with the adoption of lean six sigma (189 or 24%), system thinking (149 or 19.2%), quality control (132 or 17%) and quality assurance (78 or 10%) in that order of magnitude. The result indicates TQM as a major quality management term adopted by all the institutions.

Table 9: Quality Management Terms' Importance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Quality Control	173	22.2	22.2	22.2
	Quality Assurance	181	23.3	23.3	45.5
	Total Quality Management	120	15.4	15.4	60.9
	System Thinking	143	18.4	18.4	79.3
	Lean Six Sigma	161	20.7	20.7	100.0
	Total	778	100.0	100.0	

Table 9 shows the level of importance attached to the identified quality management terms by the institutions. As indicated on Table 9, the respondents attached highest importance to quality assurance (23.3%) followed by quality control (22.2%), lean six sigma (20.7%), system thinking (18.4%), and then total quality management (15.4%). This is an indication that majority of the most important elements that the institutions consider in achieving quality teacher education are of quality assurance and quality control. The little emphasis on TQM is due to the poor awareness of TQM practices by the institutions.

Table 10: Sample Academic Cadre

Sample Cadre		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Vice Chancellor/Provost	5	0.6	0.6	.6
	Dean of Faculty/Schools	16	2.1	2.1	2.7
	Head of Department	24	3.1	3.1	5.8
	Academic Staff	240	30.8	30.8	36.6
	Non-academic staff	120	15.4	15.4	52.0
	Final Year Students	373	47.9	47.9	100.0
	Total	778	100.0	100.0	

Table 10 shows that the modal category of respondents was final year students with 47.9% followed by academic staff at almost 31%. The non-academic staff comprised 15.4%. Cumulatively, 5.8% were Vice Chancellors/Provosts, Dean of Faculties/Schools and Head of Departments. This variety of rankings may reflect on the various tasks involved in the job positions held by different categories of staff.

Table 11: Sample Academic Qualification

Highest Academic Qualification		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	WASC/SSCE	395	50.8	50.8	50.8
	OND	27	3.5	3.5	54.2
	NCE	8	1.0	1.0	55.3
	BSc/HND	24	3.1	3.1	58.4
	Master's Degree	266	34.2	34.2	92.5
	Ph.D	58	7.5	7.5	100.0
	Total	778	100.0	100.0	

Table 11 indicates that majority (50.8%) of the respondents have SSCE since most of the respondents are students, followed by Master's degree holders at over 34% while Ph.D holders accounted for only 7.5%. Respondents who have a National Diploma and Bachelors degree equivalent were almost equal and relatively fewer, an indication that for one to teach or lecture in the University, one must have attained a Master's degree or a Ph.D. Cumulatively, almost 92.5% had a Master's degree and below, implying that most of the respondent academic staff are yet to attain the qualifications for teaching at the postgraduate level which is the degree of doctor of philosophy.

4.1.1 Descriptive Analysis

The descriptive analysis presents results of frequency distribution of responses on the independent and independent variables. The independent variable of this study is TQM practices which is sub-divided into seven dimensions, namely: management of leadership, measurement and feedback, continuous improvement, resource and infrastructural management, work environment and culture, education and training, and system and process of the institution operation of the selected higher institutions in Lagos State. The dependent variable is quality teacher education, divided into quality learners, quality learning environment, quality content, quality process, and quality supervision and support of the surveyed higher institutions. Descriptive analysis was carried out specifically to determine the intensity of both variables and degree of acceptance of each of the items under the dependent and independent variables.

Table 12: Descriptive Analysis of Total Quality Management Practices

QTE	ML	M&F	CI	RIM	WEC	E&T	SPIO	Average
Management & Staff	3.17	3.31	3.07	3.22	3.23	3.44	3.43	3.27
Students	2.98	2.91	2.99	3.05	3.03	2.99	3.11	3.01
Average	3.08	3.11	3.03	3.14	3.13	3.22	3.27	3.14

NB: MOL-Management of Leadership, MAF-Measurement and Feedback, CI-Continuous Improvement, RIM-Resource and Infrastructural Management, WEC-Work Environment and Culture, ET-Education and Training, SPIO-System and Process of the Institution Operation.

Table 12 shows the descriptive analysis of responses on Total Quality Management Practices in public tertiary institutions in Lagos State. The results show a difference in the opinion of management and staff, and students about Total Quality Management Practices. In Table 12, the mean response for management and staff is 3.27 while mean response for student is 3.01. The results in Table 4.12 further reveals that, the management and staff scored highest in education and training (*mean=3.44*) while the students scored highest in System and Process of the Institution Operation (*mean = 3.27*). The results indicate that the respondents considered education and training as well as System and Process of the Institution Operation as most emphasized elements of TQM practices by the tertiary institutions. The less emphasized elements of TQM by management and staff are continuous improvement and management of leadership. This is in contrary to the general view about TQM which placed the highest emphasis on management of leadership among other elements.

Table 13: Descriptive Analysis on Importance of TQM Practices components

	PERCENTAGE OF IMPORTANCE				
	Management of Leadership	Measurement and Feedback	Continuous Improvement	Resource and Infrastructural management	Work Environment and Culture
UNILAG	**93**	**93**	**98**	**98**	**95**
LASU	**94**	**91**	**97**	**95**	**98**
FCET	**93**	**98**	**94**	**99**	**93**
MOCOPED	**97**	**95**	**95**	**98**	**94**
AOCED	**92**	**94**	**96**	**99**	**97**

The results from Table 13 indicate strong agreement from all the institutions on the importance of the presented components. Though TQM awareness is relatively poor across the institutions, the need for it is emphasized from these results.

Hypothesis One

This hypothesis states that there is no significant relationship between Total Quality Management Practices and Quality Teacher Education in public colleges of education in Lagos State. The data employed were obtained by pooling the responses collected from the dimensions of Total Quality Management Practices and Quality Teacher Education in public colleges of education in Lagos State. To test this hypothesis, data collected were subjected to Pearson's product-moment correlation analysis. The results are presented in Table 4.18.

Table 14: Pearson Product moment Correlation Analysis of Total Quality Management Practices and Quality Teacher Education in public colleges of education in Lagos State

Variables	N	Mean	Std. Dev.	R	Sig.	Decision
Total Quality Management	463	73.93	18.53	.315*	.004	Reject
Quality Teacher Education	463	47.64	12.21			

* Correlation coefficient is significant at 0.05 level

It is shown in Table 14 that there is a low significant positive relationship between Total Quality Management Practices and quality teacher education in public colleges of education in Lagos State *(r=.315; p<0.05)*. Hence, TQM Practices have an influence on quality teacher education in public colleges of education. Therefore, the null hypothesis one is rejected. The implication is that, TQM practices have an influence on the quality teacher education in public colleges of education in Lagos State.

Hypothesis Two

This hypothesis states that there is no significant relationship between Total Quality Management Practices and quality teacher education in public universities in Lagos State. To test this hypothesis, data collected on Total Quality Management Practices and quality teacher education in public universities were subjected to Pearson's product-moment correlation analysis. The data were obtained by pooling the responses collected from the dimensions of Total Quality Management and quality teacher education in public universities only. The results are presented in Table 15.

Table 15: Pearson Product moment Correlation Analysis of Total Quality Management Practices and quality teacher education in public universities in Lagos State

Variables	N	Mean	Std. Dev.	R	Sig.	Decision
Total Quality Management	315	248.02	16.940	.245	.011	Reject
Quality Teacher Education	315	371.98	51.674			

* Correlation coefficient is significant at 0.05 level

From table 15, the result of the test performed shows that there is a weak but significant, positive relationship between Total Quality Management Practices and Quality Teacher Education in public universities in Lagos State *(r = .245; p<0.05)*. Therefore, the null hypothesis two which states that there is no significant relationship between Total Quality Management Practices and Quality Teacher Education in public universities in Lagos State is also rejected. Hence, Total Quality Management Practices have significant influence on quality teacher education in public universities in Lagos State.

Hypothesis Three

This hypothesis states that there is no significant relationship between Total Quality Management Practices and Quality Teacher Education in State government owned public tertiary institutions in Lagos State. To test this hypothesis, data collected on the Total Quality Management Practices and Quality Teacher Education in State Government owned tertiary institutions were also subjected to Pearson's product-moment correlation analysis. The data used were obtained by pooling the responses collected from the dimensions of Total Quality Management Practices and Quality Teacher Education in State Government owned tertiary institutions. The results are presented in Table 16.

Table 16: Pearson's Product-moment Correlation Analysis of Total Quality Management Practices and Quality Teacher Education in State Government owned tertiary institutions

Variables	N	Mean	SD	R	Sig.	Decision
Total Quality Management	476	32.07	27.014	.717*	.000	Reject
Quality Teacher Education	476	29.02	18.443			

* Correlation coefficient is significant at 0.05 level

From Table 16, the correlation coefficient for TQM Practices and Quality Teacher Education in State Government owned public tertiary institutions is 0.717 which is substantial and significant at 0.05 level *(r=.717; p<0.05)*. This implies that there is significant relationship between Total Quality Management Practices and Quality Teacher Education in State Government owned public tertiary institutions in Lagos State. The null hypothesis three which states that there is no significant relationship between Total Quality Management Practices and Quality Teacher Education in State Government owned tertiary institutions in Lagos State is rejected. This implies that Total Quality Management Practices have an influence on quality teacher education in State Government owned tertiary institutions in Lagos State.

Table 17: Rules of the Thumb about Correlation Coefficient Size

RANGE	INTERPRETATION
0<r<0.2	No or negligible correlation
0.2<r<0.4	Low degree of correlation
0.4<r<0.6	Moderate degree of correlation
0.6<r<0.8	Marked degree of correlation
0.8<r<1	High correlation

Source: Adapted from Agnes (2011) in computational finance: Finance training course.

4.2 Discussion of Findings

The significant relationship between TQM Practices and QTE in public tertiary institutions in Lagos State also found support in the results of the correlation analysis matrix (Table 17) which indicate significantly positive correlation coefficient between the various dimensions of TQM Practices and QTE variables while none is negative. However, it is observed that the various dimensions of quality education are more related to Resource and Infrastructure Management (RIM) dimensions of TQM followed by Management of Leadership (MOL) dimension and then Continuous Improvement (CI) and Work Environment and Culture dimensions. The relationship of the Quality Education dimensions to the other two dimensions of TQM, namely Education and Training, and System and Process of the Institution Operations is less than the others earlier mentioned. This shows that the RIM and MOL dimensions of the TQM are more in contention when it comes to Quality Teacher Education.

Another major finding of this study is that there is a low significant relationship between total quality management Practices and Quality Teacher Education in public colleges of education in Lagos state. This result concurs with the findings of Oduwaiye *et al.* (2012), Arikewuyo (2004) and James (2013). Sofoluwe and Kayode (2012) reported that there is a significant relationship between Total Quality management and Quality Teacher Education in colleges of education.

Similarly, James (2013), states that there is moderate relationship between Total Quality Management Practices and Quality Teacher Education in colleges of education in Nigeria. He states that total quality management is moderately applied in Business Education; total quality management principles are thus emphasized.

In addition, another major finding of this study is that there is a low significant relationship between Total Quality Management Practices and Quality Teacher Education in public universities in Lagos State. This finding is in agreement with the finding of earlier studies carried out by Issam and Omar (2014), Ojo (2006), Ajayi (2004), Babalola (2004) and Madumere-Obike (2004) who reported that Total Quality Management has a significant positive effect on quality teacher education in public universities. They stated that TQM is a management programme that is quality-centred and providing satisfaction to the organizational clients and the realization of organizational goals and objectives.

This research also found that there is a low significant relationship between Total Quality Management Practices and Quality Teacher Education in Federal Government owned tertiary institutions in Lagos State. This finding is consistent with findings of earlier studies conducted by Salami and Akpobire (2013) and Ogunnaike *et al*. (2014).

Salami and Akpobire (2013) indicate that, over the last few years, TQM has been applied in the education industry in Nigeria especially in Federal Government owned tertiary institutions and has had significant effect on quality teacher education. Ogunnaike *et al*. (2014) reported positive significant relationship between quality output management and perceived corporate image in Federal Government owned tertiary institutions.

Finally, this study found that there is a significant difference in Total Quality Management Practices and Quality Teacher Education between Federal and State Government owned tertiary institutions in Lagos State. This means that the relationship between TQM Practices and Quality Teacher Education in Federal and State Government owned tertiary institutions are at variance. The implication of this finding is that Federal Government owned institutions have TQM policy for their established tertiary institutions and so is the State government but the Practices between them differs considerably. This factor could leads to the variations in quality teacher education between Federal and State Government owned tertiary institutions in Lagos State. The findings is in tandem with the previous work of Anyamele (2004) who reported some similarities and differences in the application of TQM and quality improvement between Federal Government and State owned tertiary institutions in Nigeria. Anyamde's findings further show that there is no one-way approach to Practicing TQM in a tertiary institution, and that Nigeria education institutional leaders view quality from different perspectives. In addition, the differences between the Federal and State tertiary institutions in terms of TQM Practices and QTE could be due to the financial strength of the two different types of Government and different funding of the institutions arising there from. It could also be due to the age of the institutions, the Federal Government

institutions having been in existence for a longer time than the State owned ones and, therefore, could have acquired, imbibed and stabilized the practices involved in TQM and QTE more than their State counterparts.

5.0 Conclusion and Recommendation

The significance of this study was to provide the government, parents, teachers, work force, the students and other stakeholders of education system an insight and understanding into the reasons for Total Quality Management to be the norm in the delivery of all education system services especially teacher education in tertiary institutions.

The study also presented a review of related literature which dissected the principles of quality and explained the historic perspective of quality and quality management philosophies. According to the purpose of study, the main quality management philosophy employed in this study is Total Quality Management which was introduced by Edward Deming. Criticisms and limitations of TQM were discussed. The implementation technique of TQM in schools and theoretical framework were also discussed. Lastly, empirical analysis of the use of TQM in a high school in Indonesia and in a university in Saudi Arabia were brought forth to discuss the effectiveness of TQM in academics.

The results of the research show that an effective quality management is required to be put in place in all the public tertiary institutions in Lagos state. The limitation of quality assurance and control which are provided in Total Quality Management makes TQM the most effective quality management philosophy that can yield positive result. The TQM framework explains the procedure of implementation and the empirical findings including those in this study indicated the effectiveness of TQM in academic institutions where it had been used. The results also conclusively show that proprietorship and status of institutions are factors that impinge upon TQM as the latter affects Quality Teacher Education.

5.1. Implications of findings

The implication of zero or defective quality system is incompetent graduates. The economy is shaped by its stakeholders. Position holders in economy and businesses are graduates and performance depends on their abilities. For an economy to be powered by the right brains and sincere minds, the academic system refinement must be taken seriously. More research is needed about factors influencing government policies on education. It therefore behoves on the government to come up, as the need arises, with policies emanating from well-funded researches. More importantly, is the provision of continuous research on the keen observation of the practice of Total Quality Management in academics. Such research will include success and failure of implementation and records of results produced during TQM and pre-TQM.

There is no quality philosophy that can change the morals of people directly. However, when a good system with solid structure is in place, those who are not willing to adapt to the system find it inconvenient to carry on within the system. By this, only those who are willing and able to support the introduction, implementation and continuous maintenance of quality will remain ultimately. It is only when a system has a loop hole that charlatans find areas to hide. Every stakeholder should therefore be made to be aware of the philosophy and practice of TQM towards attainment of educational objectives. TQM should then be so managed as not to leave room for non-serious students.

5.1.2. Recommendations

1. Ongoing empirical researches on the reasons for failure of Total Quality Management in business management compare to the failure in academic institutions is also crucial. The findings of such researches would check-mate on mistakes in implementation more so that not all institutions will get the implementation right for the first time.
2. The need for a more coherent approach to achieving improved outcomes for quality teacher education is the need for scrupulous analyses of research evidence, and responsiveness to identified knowledge fissures. Only as new evidence is embedded at policy level can it become a leverage point for future research and development, investments, and systemic change.
3. TQM should be built upon a set of core values and concepts. The fundamental core values 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.

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