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Research Paper

Awareness, Recognition And Practice of Total Quality Management in Tertiary Institutions in Lagos State, Nigeria

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ABSTRACT: *The state of education in the public tertiary institutions in Lagos state is witnessed by all. For over the years, this concern had eaten up many research records of which no tangible change has been influenced. Mistakes and errors pointed out in many of the researches are still glaring till today. The problems of the education system have become so famous and stretched by many writers that none is left uncovered. The challenge today is finding the appropriate and effective solution. Many researchers have introduced and recommended several solutions but either these solutions ended up as just a library stock or their implementation yielded no significant change. The presence of Total Quality Management in academic is not new ground breaking news in Nigeria education. Many researchers have employed this tool in their techniques of providing solutions to the education sector. This study seeks to determine the awareness, recognition and practice of total quality management in tertiary institutions in Lagos state, Nigeria. Indicators of quality management which were important missing points in earlier researches had been brought to discussion table by this research work. Total Quality Management is a philosophical idea in which its manner of application depends on the culture settings of the institution concern.*

Keywords: *Academic, Education, Institutions, Lagos State, Public, Quality, Quality Management, Teacher, Tertiary, Total Quality Management.*

I. INTRODUCTION

At the hearts of many developing countries' (including Nigeria) transformation agenda is quality education: economic, political, cultural, industrial, technology, etc. Foremost, among the levels of the needed education is higher education because it is the root of manpower development. However, to get the desired quality education would require a large dose of quality teacher – a function of functional teacher education system. This is to say that a functional education system is indispensable in national development. Highly disturbing however, is the fact that higher education, and in particular teacher education, in Nigeria is bedeviled with myriads of problems. Some of the challenges include: uncertain political-policy environments, declining investments in teaching/research facilities, lack of research endowments, limited funding, poor performances of universities, physical and institutional infrastructure problems, lack of adequate quality management and continuous quality improvement in students' knowledge. Among the most worrisome of these challenges according to writers are weak interest in teacher education, lack of adequate quality management and continuous quality improvement in students' knowledge which necessitated the quest for this study. Indeed, the current state of education and poor technological development in the country has shown the failure of teacher education in their objectives. It should be stated that the academic and emotional qualities of intending teachers for training are critical for quality assurance and internal efficiency for professionalism in teaching in the future. Fundamental to the sustenance of quality in teacher education system is the management weapon of Total Quality Management (TQM) which is the driver of this study.

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 and is therefore necessary in Nigeria's teacher education programme if the country is to get to the pinnacle of greatness in the world. Concerns about quality, maintenance of standards and higher productivity among Nigeria's higher institution and the government; this leads to the search for the unidentifiable fundamental problem that has incapacitated the development of teacher education institutions to bring about desired results.

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Education in Nigeria is regarded as an instruments "par excellence" for effecting national development [1]. This could be the reason why every scholar irrespective of the school of taught agrees to the fact that education is the bedrock of economic, political and technological development of a nation. A highly literate an economically productive, educated citizenry can contribute far more tremendously to a nation's gross domestic product than a large pool of irrelevantly educated population [2]. Every society accepted education as the instrument for national socio-economic development and transformation. For any country to be ranked high among the developed nations of the world, such country should transform the education of her youths [3]. Edwards Deming [4] has proved so powerful that educators want to apply TQM in schools. Universities, however, have been slower to see the value of using TQM to improve the administration of the university.

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 [5]. Successful countries made deliberate and explicit education investment at all levels to the scale of their global ranking ambition, vision, strategy and action. Low levels of human capital slow down national competitiveness and the rate of income growth. High Literacy rate contributes directly to skill's formation, and is correlated with the growth of financial services and formal banking systems and others. According to [6], within the high correlation rank in education and competitiveness, Nigeria is 127, far below South Africa (54), Mauritius (55) and Tunisia (32).

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. Some of the indicators of quality in teacher education are the performance of lecturers in the institutions, the effect of the teaching system on the performance of students and record of achievements so far by the students produced in the society. The current state of education and poor technological development in the country has shown the failure of teacher education in their objectives (especially as defined by the role of National Commission for Colleges of Education (NCCE)). Thus, it becomes mandatory to analyze these problems and to find tangible lasting solutions. Meanwhile, one of the major factors affecting the quality of public secondary school education is teacher shortage as well as the teacher education system. According to [7], the academic and emotional qualities of intending teachers for training are critical for quality assurance and internal efficiency for professionalism in teaching in the future. Candidates who usually apply to higher institutions for teacher education in Nigeria are those who have either been denied admission or are basically unqualified for admission into such popular professions including medicine, law, engineering, architecture and so on. This study was designed to examine the level of awareness, recognition and practice of any quality management in the tertiary educational institutions in Lagos State, Nigeria.

II. 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 fig. 1.

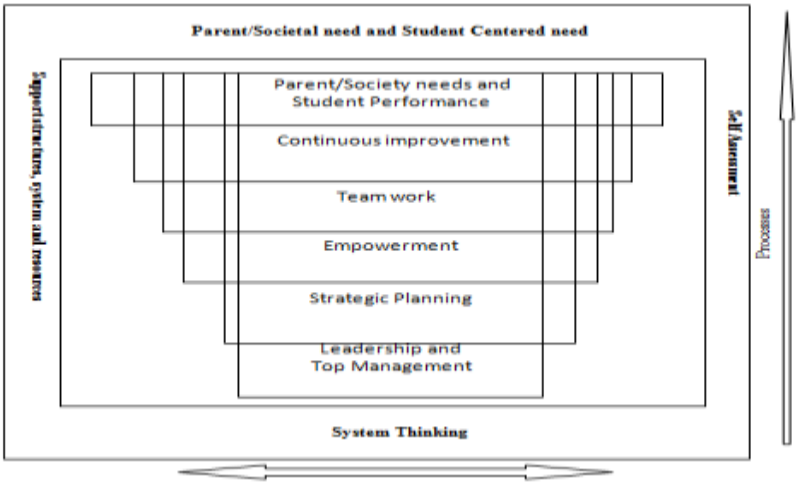


Figure 1: The framework: TQM telescopic framework for tertiary institutions

Source: adapted from [8].

Fig. 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. Many philosophers, especially business philosophers, have dealt with the definition of quality using different concepts and perspectives, though with a 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 [9] 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.

Sallis [9] explains that the relative definition of quality has two aspects to it. The first is concerned with *measuring up* and ensuring conformity to a predetermined specification. The question that is asked is 'Does this good or service do what is asked or expected of it?' This is fitness for purpose. This is sometimes called the producer definition of quality or the procedural concept of quality. Secondly, in an industrial setting, quality is achieved by products or services meeting a predefined specification in a consistent fashion. Quality is demonstrated by a producer having a system, known as a *quality assurance system that* supports the consistent production of the good or service to a particular standard or specification. Quality is also the ability of a product or service to consistently meet or exceed customer expectations [10]. Bilich and Neto [11] 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.

The Simple Objective of Total Quality Management is "Do the right thing, 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 1980s, Total Quality Management (TQM) in the 1990s, and then the Lean Six Sigma since the 2000s. 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 [12]. 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 [13; 14; 15; 16 & 17]. Many public organizations have adopted quality innovation approaches with varying degrees of success [12].

2.1 W. Edwards Deming TQM Philosophy

Deming studied under Shewhart at Bell Laboratories. He is well known for helping Japanese companies by applying Shewhart's statistical process control. His main Contribution is the Fourteen Points to Quality.

Deming's main key points are:

- Create constancy of purpose
- Cease mass production - build quality into products
- Drive out fear and build employee trust
- Break down departmental barriers (create win-win situations)
- Seek long-term supplier relationship (end low cost bidding)
- Eliminate numerical goals; abolish annual rating or merit system
- Eliminate slogans - they provide no value in terms of improving

Deming also put forth the Quality Circle as shown in fig. 2.

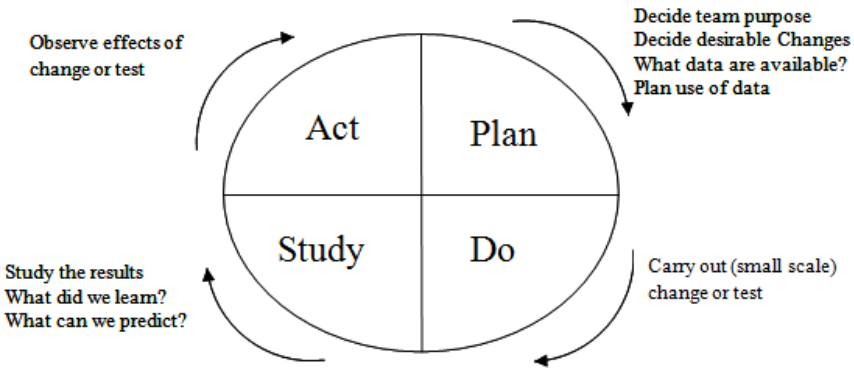


Figure 2: Deming's Quality Circle

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

Plan: This defines the starting of the process, its end and how what will be carried out in the process. It entails the key tasks to be performed and the process procedure. Including those who are involved in the process, what instruments and materials are needed and the definition of quality. This stage encompasses also the identification of primary causes of problems and their effect on the performance, turning of solutions into process and evaluation of how it corrects the primary causes.

Do: Set up a mechanism to check the impacts of the primary problems and measure the success of the solutions applied.

Study: Study the results or experiment to know if there is any improvement on the process and if any prediction can be made.

Act: From the observed or studied test or experiment, develop an implementation plan. What needs to be done, what should be involved and how it will be carried out.

2.2 Quality processes

a. Teachers

i. **Professional learning for teachers:** The highest quality teachers, those most capable of helping their students learn, have deep mastery of both their subject matter and pedagogy [18]. The capability of the teachers affects educational quality since student achievement, especially beyond basic skills, depends largely on teachers' command of subject matter [19].

ii. **Teacher competence and school efficiency:** Many teachers who are competent also face problems beyond their control, like transportation to reach school in time, hardship of economic which necessitate holding a second job due to insufficient salary or delay of salary among others. "The quality of a school and the quality of teaching of the individual teacher is higher in schools that are able (and willing) to make more efficient use of the available time of its teachers and its pupils" [20].

iii. **Ongoing professional development**: Professional development can help overcome shortcomings that may have been part of teachers' pre-service education and keep teachers abreast of new knowledge and practices in the field.

iv. **Continuing support for student-centred learning:** Teacher education, both pre-service and in-service, should help teachers develop teaching methods and skills that take new understandings of how children learn into account. Just as curriculum should be child-centred and relevant, so should instructional methods.

v. **Active, standards-based participation methods:** This learning method empowers the teachers and students to engage in a democratic process of solving a particular problem affecting their education system or the students' learning process. Such process can involve the community too in some cases. It improves the critical thinking, problem solving skills and spirit of teamwork in the students.

vi. **Teacher feedback mechanism:** This process should include both performance assessment and assessment of factual knowledge.

Teacher beliefs that all students can learn: Quality education puts students at the centre of the process; student achievement must be the school's first priority. Schools committed to student learning communicate expectations clearly, give frequent and challenging assignments, monitor performance regularly, and give students the chance to participate in and take responsibility for diverse school activities [21].

vii. **Teacher's working conditions:** Teachers' working conditions affect their ability to provide quality education. Many aspects of school life and educational policy go into teachers' perceptions of their employment.

b. Supervision and support

i. **Administrative support and leadership:** The quality of administrative support and leadership is another critical element in school processes, both for students and for teachers. Few head teachers and administrators in developing countries have had any formal training in the leadership functions of schools, and promotions may not be based on leadership or management skills. Further, many heads of schools continue to have extensive pedagogical responsibilities in addition to administrative ones. This leaves little time for supervision and support of staff [22].

ii. **Student access to languages used at school:** The languages schools use for instruction can have an impact on learning and academic achievement in general. Using home language for primary education is very effective according to research. Africa parents fear that learning in the mother tongue can impair learning the international languages like, English later. A belief exists that African languages are not equipped to deal with scientific and technical concepts; and many parents refuse to have their children learn a national language when they consider it to have been imposed for political rather than socio-linguistic or demographic considerations [23].

iii. **Using technologies to decrease rather than increase disparities:** As the president and chief executive officer of Cisco Systems stated: "There are two fundamental equalizers in life — the Internet and education. E-learning eliminates the barriers of time and distance, creating universal learning-on-demand opportunities for people, companies and countries" [24].

iv. **Diversity of processes and facilities:** The presences of diverse use of technology in schools are one manifestation of how schools can be student-centred. Student-centred schools that focus on quality education have found that adapting to the rhythms and requirements of local communities results in higher participation and better student outcomes.

2.2.1 Quality outcomes

Achievement in literacy and numeracy: There is critical relationship between outcomes and the quality of environments, contents and processes.

Using formative assessments to improve achievement outcomes: It is critically important to identify what skills each student possesses and to use instruction to progressively build on this foundation, [25] quoted by UNESCO [26].

Outcomes sought by parents: Parents tend to attach more importance to educational outcomes as a measure of school quality than students, teachers or principals [27]. Just as parents seek favourable outcomes, such as academic achievement and eventual employment, they seek to avoid outcomes they view as negative; failure.

Outcomes related to community participation, learner confidence and lifelong learning: Academic achievement is often used as an indicator of school quality because it is easily measurable using standardized tests, while other outcomes may be more complex and less tangible.

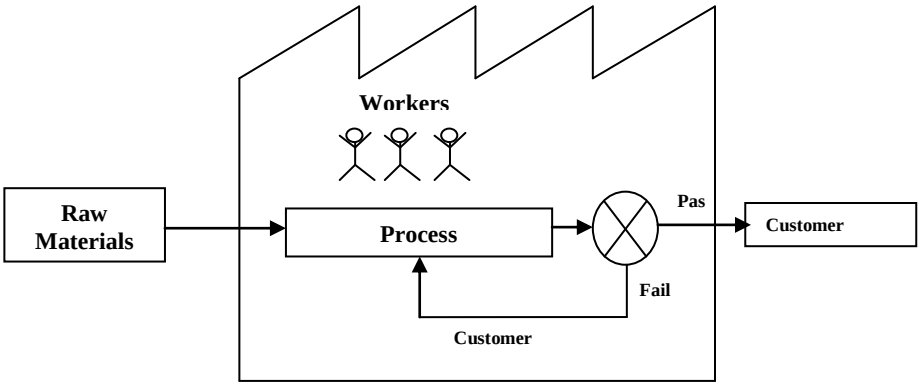
2.3 Experimental approaches to achieving desired outcomes: This is the use of experiential community-based approaches so solve problems relating to it. It improves social-community relationship. The children were more connected to their local histories, social relations and economic structures. The students and the school came to be seen as a force for positive change in the community [28].

2.4 Total Quality Management Implementation Techniques in Schools

As quoted by Lameei [29], "there is no one best way to implement TQM [30]. There is no one best way…which suits all organizations and cultures [31]. 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] [32]. You may understand the "what" and the "why" of TQM, but the more difficult question is, "How" do you implement a TQM effort?" [33]. From the start, organizations must accept that TQM is a long and arduous journey, which has no end [31]. 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 [31; 34; 35; 30; 32; 36].

Lameei [29] states further that although implementation of TQM actually starts with strategic planning [33], 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 [31]. This shows that the top management teams must take more active role than the past, for setting the ground for TQM implementation [31; 37].

According to [38], although TQM was originally intended for industrial sector, Deming [39] 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". Figs. 3.1 and 3.2 show the simplified models of TQM in a factory and a secondary school respectively.



Source: [38].
Fig 3.1: A Simplified model of a factory

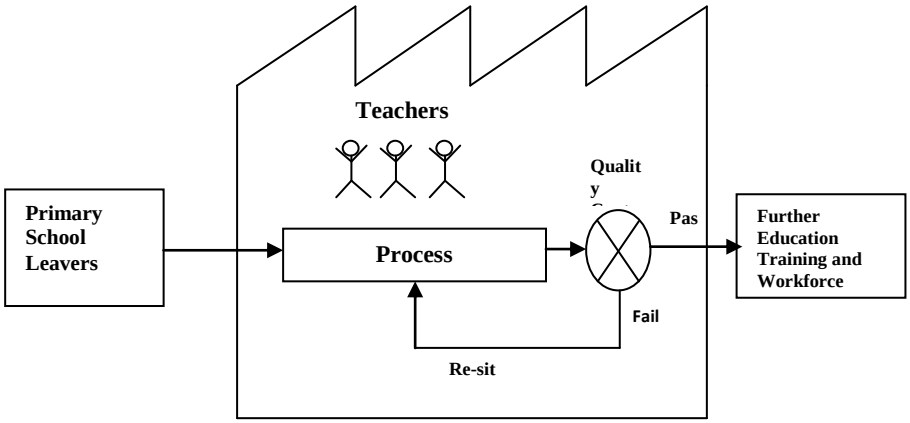


Fig 3.2: A simplified model of a secondary school.
Source: [38].

In Fig 3.1, the industry takes in raw materials and workers follow the design process according to the stipulated measure and standard. If the product meets the laid down quality standard, it reaches the customer otherwise it is returned to the system for rework or discard. Similarly, in Fig 3.2, 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. Both cases analyzed above resulted to wastage of money, time and efforts. The advocators of Crosby's [40] model suggest a solution for passing the examination by focusing on the teaching system rather than on the examination itself. Every factor that influences the failure of the examination should be researched studied and obtain solutions to address them. Until then would the system be able to produce students that will automatically pass their examinations; resulting in "zero-defects".However, the advocators of Deming's model see the zero-defects (no examination failure) principles as incomplete solution to achieving optimum quality. In line with Deming's concept, there must be continual improvements in the curriculum itself in order to better satisfy the educational needs of the students [38].

2.5 Teacher Education: A Historical Perspective

The origin and development of teacher education can be traced to the beginning of western education in the country, the various church Missions such as the Wesleyan Methodist, the Church Missionary Society, the Baptist, the Church of Scotland (Presbyterian) and the Roman Catholic were very active in Nigeria between 1842 and 1860 [41]. The first teacher training institution in Nigeria was founded by the Church Missionary Society in 1859. The school established in Abeokuta and named "The training Institution" was moved to Lagos in 1867 when the missionaries were expelled from the town [42]. The school was later moved to Oyo in 1896 and renamed St. Andrews College, Oyo. The Baptist mission followed the example of the CMS and founded a

teacher training college at Ogbomosho in 1897. In the same vein the Wesleyan Methodist founded Wesley College Ibadan in 1905. The first teacher training institution in northern Nigeria was Nassarawa College founded by the colonial government in 1909 [43].

Another historical landmark in the development of teacher education in Nigeria was the establishment of Yaba Higher College by the British Colonial Administration in 1932. The Western Regional government embarked on Free Universal Primary Education in 1955, while the Eastern Regional government followed suit in 1957. The military, unlike the civilian, heavily depended on centralised administration. It launched the Universal Primary Education nationwide in 1976. The UPE gave rise to unprecedented population growth not only in the primary but also at the secondary and tertiary levels. The demand for teacher education was enormous. The Federal Government took over the financial responsibility for all Grade II Teachers' Colleges in the Federation as part of the programme for the UPE scheme. In addition, the Federal Government awarded bursaries to all pre-service teachers in the Colleges of Education and Universities. In addition, the Federal Government founded more teacher training institutions with diversified programmes while universities were expanded [43].

Osokoya [43] makes a good point when he said that a revolution in teacher education programme in Nigeria is the issue of improved assessment practice of students' learning outcomes. Federal Republic of Nigeria [1] in her National Policy on Education recommends the implementation of continuous assessment practice at all levels of education in Nigeria. Continuous assessment is finding out what the students have gained from learning activities in terms of knowledge, thinking and reasoning, character development and industry over a period of time. Scholars in evaluation [44; 45] adjudge continuous assessment as the best thing that could happen to the system of assessment in the Nigerian educational Institutions. Yet, its implementation has been partially undertaken because teachers seem not to have been well trained for it.

Unlike many other management concepts and its predecessors, Total Quality Management (TQM) *focuses on refining the input and the process involved to produce required output and not directly on the output*.

Fig. 4 below shows the system of operation of TQM in an academic institution.

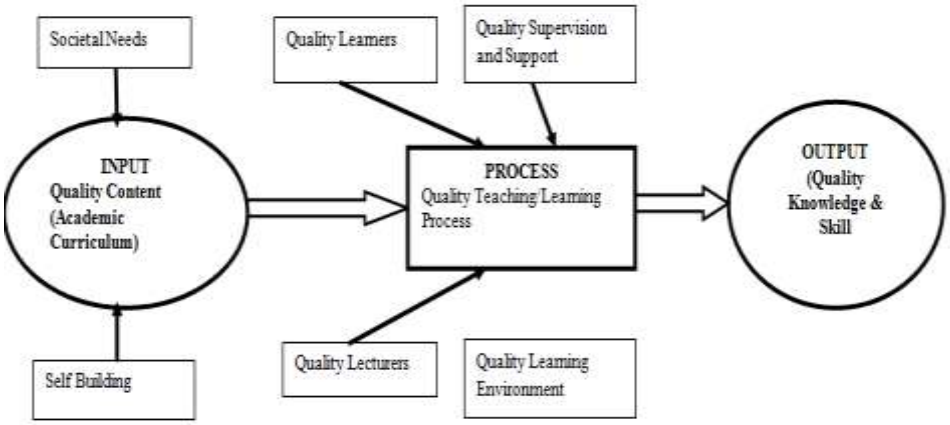


Figure 4: TQM system in tertiary institution.
Source: Field Study.

Fig. 3 shows the system theory of Total Quality Management as proposed for academic institutions especially tertiary institutions.

The TQM in the tertiary institution (within the scope of this study) is aimed at achieving quality teacher education and the output is quality knowledge and skill. It is expected that once the input is quality enough and process is error free, the product will be quality.

TQM ensures that:

1. Students will pass in their examination due to the quality input and quality process;
2. Students will be useful to the society based on the quality content which considers the need of the society in its content;
3. Students will pass excellently well and none of the students that passed will be below the institution's measure of competence (though competence among them may vary due to difference in level of talent).

Total Quality Management (TQM) is a synthesis of well-known management practices aimed at creating an organizational culture where everyone will work to contribute to overall quality of the products and services. A committee was formed to undertake the self study. Members of the committee included faculty members from different departments both clinical and basic science some of whom had occupied key administrative jobs in the college (dean, vice dean). One of the most important tasks of this committee was to

establish clear mission and objectives that reflect a real change in the KAU College of medicine towards application of Total Quality Management (TQM) [46].

Empirical research studies undertaken in Turkey, United State of America and United Kingdom and in Kenya overtly demonstrated its effectiveness in arresting the trend of educational fortunes and it has the kicking potentials of continuously improving educational outcome. Ijaiya [47] did a research on the inspection of quality control and quality assurance in academics titled "From Quality Control to Quality Assurance: A Panacea for Quality Education in Nigerian Schools". The objective of the research was to determine how qualitative education can be guaranteed in Nigerian schools. It therefore examined the concept of quality and quality control and highlight quality control practices. It also identified factors that stifle quality in Nigerian schools, and suggested the adoption of Total Quality Management in the educational system.

The findings of the research entail the descriptive failure of both quality control and quality assurance in the education system, two factors which are part components of Total Quality Management. She states that, "there is every expectation that Total Quality Management will become a reliable process for improving school quality in Nigeria in the future."

2.6 Operational Definition Of Terms

To avoid ambiguity, the following terms are defined as used in this study:

Quality: This is a measure of excellence or a state of being free from defects, deficiencies and significant variations brought about by strict and consistent commitment of public tertiary educational institutions through a refined process of systematic activities with adequate measures of maintaining continuous standards and improvement to produce high competent graduates.

Public Tertiary Institutions: These are the post-secondary educational institutions which include the public universities and public colleges of education in Lagos state.

Total Quality Management: Basically, it is an integrative philosophy of management for continuously improving the quality of products and processes. In academics (as used in this study), it is the refinement of academic system with introduction of standard input (society expected and field relevant curriculum), continuous improvement of standard within the academic system and the production of students that not only pass but pass excellently and competently well.

Teacher Education: It is the process of training that deals with the art and science of acquiring professional teaching competence, growth and development in the academic higher institutions. According to this study, teacher education refers to the training in Faculties of Education in Public Universities and Public Colleges of Education.

Quality Teacher Education: It is a process of training that deals with the science of acquiring necessary skills and professional growth, academic and emotional qualities of teachers for quality assurance and internal efficiency in teaching.

Practice: It is the application of TQM principles in tertiary institutions for continuous improvement of standard within the system and the production of students that not only pass but pass excellently and competently well.

2.7 Research Questions

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

Q1: How far is Total Quality Management put into practice in acheiving teacher education in public tertiary institutions in Lagos State?

Q2: What is the relationship between Total Quality Management practices and quality teacher education in State Government owned public tertiary institutions in Lagos State?

Q3: Is there any difference in Total Quality Management practices and quality teacher education between public colleges of education and universities in Lagos State?

2.8 Research Hypotheses

The following research hypotheses were formulated to guide the study:

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

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

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

2.9 Objective

The objective of this research is to examine the level of awareness, recognition and practice of any quality management in the tertiary educational institutions in Lagos State.

III. MATERIALS AND METHODS

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 (AOCOED), Ijanikin.
- Federal College of Education (Technical) (FCET), Akoka.
- Michael Otedola College of Primary Education (MOCOPED) Inaforija, Epe.

3.2 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 Ogunsanya 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 1 illustrates the distribution of sample.

Table 1: 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.

3.3 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.

3.4 Reliability Of The Instrument

Cronbach's alpha coefficients were calculated to estimate the reliability of TQMP-QTEQ. Sekaran [48] 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 2.

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 QTE indicators 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 2: 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**.**

3.5 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.

IV. FINDINGS AND DISCUSSIONS

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 3 to 10 present the analysis of general information on the respondents.

Table 3: 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 3

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 4: 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 4 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 5: SampleNature by faculties and colleges of Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Faculty of Education in Public Universities in Lagos State	315	40.5	40.5	40.5
	Public Colleges of Education in Lagos State	463	59.5	59.5	100.0
	Total	778	100.0	100.0	

Table 5 shows public Colleges of Education in Lagos State as having the highest number of participants representing 59.5 per cent (463) while faculty of Education in Public Universities in Lagos State accounted for 40.5per cent (315). The implication of this data is that majority of participants were from Colleges of Education in Lagos State.

Table 6: 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 6 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 onTable 6, 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 7: Quality Management Terms' Awareness

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Quality Control	182	23.4	23.4	23.4
	Quality Assurance	163	21.0	21.0	44.3
	Total Quality Management	115	14.8	14.8	59.1
	System Thinking	157	20.2	20.2	79.3
	Lean Six Sigma	161	20.7	20.7	100.0
	Total	778	100.0	100.0	

Table 7 shows the quality management terms' awareness by the respondents. Analysis in Table 7 indicates that majority of the respondents (182 or 23.4%) returned that they are aware of quality control while others are aware of quality assurance (163 or 21%), lean six sigma (161 or 20.7%), system thinking (157 or 20.3%) and total quality management (115 or 14.8%) in that order of magnitude. The results indicate that respondents were relatively less aware of TQM practices in their institutions.

Table 8: 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 8 shows the level of importance attached to the identified quality management terms by the institutions. As indicated on Table 8, 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 9: 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 9 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 10: 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 10 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.

4.2 Descriptive Analysis

This section 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.

4.2.1 Descriptive Analysis on Total Quality Management Practices and Quality Teacher Education Dimensions

This section intended to reveal the responses of management and staff, and students about Total Quality Management and Quality Teachers Education in totality. Tables 11 and 12 show the results of means of perception of the respondents.

Table 11: Descriptive Analysis on Quality Teachers Education

QTE	QL	QLE	QC	QP	QLEC	QSP	Average
Management & Staff	2.63	2.65	2.62	2.61	2.75	2.73	2.67
Students	2.51	2.68	2.72	2.71	2.71	2.73	2.67
Average	2.57	2.67	2.67	2.66	2.73	2.73	2.67

NB: QL - Quality Learners, QLE - Quality Learning Environment, QC- Quality Content, QP- Quality Process, QLEC- Quality Lecturers, QSS -Quality, Supervision and Support.

Table 11 shows the descriptive analysis of responses on quality teacher education in public tertiary institutions in Lagos State. The results indicate that there is no difference in the perceptions of management and staff, and students about quality teacher education. The mean response of management and staff range from 2.61 to 2.75 while mean response of students range from 2.51 to 2.73. The management and staff scored highest on quality lecturers (*mean=2.75*) while the students scored highest on Quality Supervision and Support (*mean = 2.73*). The results imply that the respondents mostly emphasized on quality lecturers, and Quality Supervision and Support as most significant aspects of quality teacher education. Each of these dimensions has the highest average score of 2.73.

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 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.

4.2.2 Descriptive Analysis on the awareness of quality management philosophies across the public tertiary institutions in Lagos.

Table 13 shows the result of the data analysis on the awareness of quality management philosophies across the institutions and their adoption rate.

Table 13: Awareness of Quality Management Philosophies across Institutions

		Quality Control %	Quality Assurance %	System Thinking %	TQM %	Lean Six Sigma %
UNILAG	Awareness of existence	92	80	35	45	15
	Awareness of its adoption	82	70	0	0	0
LASU	Awareness of existence	81	89	22	44	13
	Awareness of its adoption	80	88	0	0	0
FCET	Awareness of existence	91	86	15	32	8
	Awareness of its	82	84	0	0	0

	adoption					
MOCOPED	Awareness of existence	87	78	20	30	7
	Awareness of its adoption	79	77	0	0	0
AOCED	Awareness of existence	88	88	15	25	4
	Awareness of its adoption	78	81	0	0	0

As indicated in Table 13, the high percentages revolve only across quality control and quality assurance. Awareness of TQM is relatively poor across the institutions with an average percentage of 29.2% across all the institutions. Lean Six Sigma seems to be something strange to many respondents and maintain zero adoption across all the institutions. Though, TQM awareness is at 45% at UNILAG and 44% at LASU, its adoption for application purpose is yet to be observed. The results here are further depicted in Fig. 5.

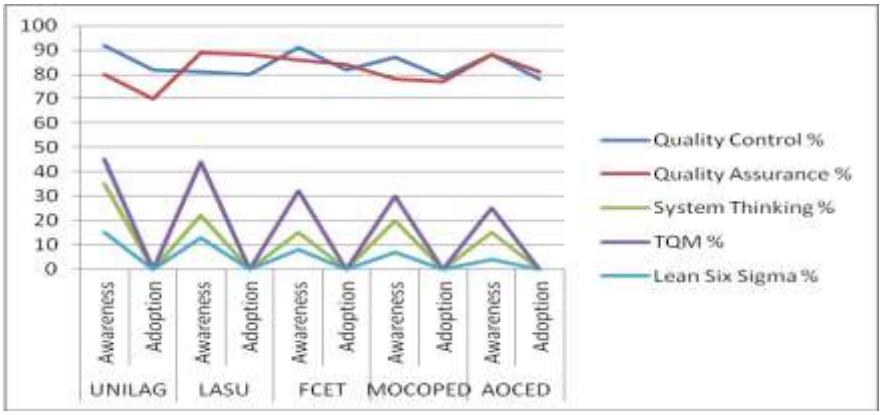


Figure 5: Quality Management awareness and adoption across the institutions

Quality Control and Quality Assurance maintain high percentage across the institutions as compared to other quality management philosophies. System thinking awareness is brief across UNILAG, LASU and FCET but faded to none across MOCOPED and AOCED. TQM also suffer insufficient popularity across the institutions without being conscious of its practical application.

4.2.3 Description Analysis on the importance of Total Quality Management Practices components

Table 14: 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 14 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 tertiary institutions in Lagos State. To test this hypothesis, data collected on Total Quality Management Practices and quality teacher education in public tertiary institutions were subjected to Pearson's product-moment correlation analysis. Data were obtained by pooling the responses collected from the dimensions ofTotal Quality Management and quality teacher education in public tertiary institutions.The results are presented in Table 15.

Table 15: Pearson's Product-moment Correlation Analysis of Total Quality Management Practices and quality teacher education of public tertiary institutions in Lagos State

Variables	N	Mean	Std. Dev.	R	Sig.	Decision
Total Quality Management Practices	778	79.23	11.050	.695*	.000	Reject
Quality Teacher Education	778	70.67	13.362			

* Correlation coefficient is significant at 0.05 level.

The result of the test performed indicates 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).* This implies that the null hypothesis one which states that there is no significant relationship between Total Quality Management Practices and Quality Teacher Education in public tertiary institutions in Lagos State is rejected. The implication of this is that, Total Quality Management Practices have a significant influence on quality teacher education in public tertiary institutions in Lagos State.

Hypothesis Two

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

Variables	N	Mean	SD	R	Sig.	Decision
Total Quality Management	302	36.98	16.740	.352*	.022	Reject
Quality Teacher Education	302	24.71	10.514			

* Correlation coefficient is significant at 0.05 level

From Table 16 the correlation coefficient between Total Quality Management Practices and Quality Teacher Education is 0.352 which is significant at 0.05 level *(r=.352; p<0.05).* This implies that there is a low significant positive relationship between Total Quality Management Practices and Quality Teacher Education in Federal Government owned tertiary institutions in Lagos State. Therefore, hypothesis four which states that there is no significant relationship between Total Quality Management Practices and Quality Teacher Education in Federal Government owned tertiary institutions in Lagos State was rejected. Hence, Total Quality Management Practices have an influence on quality teacher education in Federal Government owned tertiary institutions in Lagos State.

Hypothesis Three

This hypothesis states that there is no significant difference in Total Quality Management Practices and Quality Teacher Education between public colleges of education and universities in Lagos State. To test this hypothesis, data collected on the Total Quality Management Practices and Quality Teacher Education in public colleges of education and universities were subjected to the independent t-test. The data employed were obtained by pooling the responses collected from the dimensions of Total Quality Management and Quality Teacher Education in public colleges of education and universities. The results of the t-test analysis are presented in Tables 17 to 18. While Table 17 shows the descriptive statistics, Table 18 provides the test analysis.

Tables 17: Descriptive Statistics of significant difference in Total Quality Management Practices and Quality Teacher Education in public colleges of education and universities

Group Statistics					
	Colleges of education and universities	N	Mean	Std. Deviation	Std. Error Mean
TQMP-QTE in colleges of education and universities	TQM-QTE in Public Colleges of Education	463	2.6909	.36388	.01691
	TQM-QTE in Public Universities	315	3.2580	.36491	.02056

Table 18: t-statistics of significant difference in Total Quality Management Practices and Quality Teacher Education in public colleges of education and universities

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
TQMP-QTE in colleges of education and universities	Equal variances assumed	1.832	.099	-21.302	776	.000	-.56710	.02661	-.61933	-.51487
	Equal variances not assumed			-21.314	673.169	.000	-.56710	.02662	-.61937	-.51483

The results of independent t-test analysis of the difference in Total Quality Management Practices and Quality Teacher Education between public colleges of education and universities are presented Tables 4.22 and 4.23. The results in Table 4.23 indicate that there is significant difference in the Total Quality Management Practices and Quality Teacher Education in public colleges of education and universities (*tdf=776) = 21.302, p<0.05).* The mean values indicate that, significantly, Total Quality Management Practices and Quality Teacher Education is lower in public colleges of education *(Mean = 2.6909)* than in public universities *(Mean = 3.2580).* Hence, hypothesis six which states that there is no significant difference in Total Quality Management Practices and Quality Teacher Education between public colleges of education and universities in Lagos State is rejected. This implies that Total Quality Management Practices and Quality Teacher Education differ significantly between public colleges of education and universities in Lagos State in favour of the universities

4.3 Discussion Of Findings

One major findings of this study 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. The positive but substantial significant relationship between TQM Practices and quality teacher education found in the present study confirms what has been found in other studies on quality tertiary education in Nigeria. This result is in line with the findings of James [49] who reported that Total Quality Management has positive correlation with quality teacher education in business education. To ensure total quality management in Business Education, Ukor [50] observes that there is need to have adequate lecturers, facilities, monitoring of content delivery, workshop and training of staff and so on. Ukor [50] states that no school can be better than the quality of its teachers at its disposal, quality of its laboratories, which is adequately stocked with the necessary and requisite instructional facilities/equipment to facilitate the teaching and learning to achieve the mission and vision of education. Also, Tony and Mariane [51] opine that most colleges should recognize that continuous improvement is essential if they are to survive and prosper. This is based on the notion that the pre-eminent principle for quality management is not control but improvement.

This study 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 [52; 53]. Salami and Akpobire [52] 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*. [53] reported positive significant relationship between quality output management and perceived corporate image in Federal Government owned tertiary institutions.

This study also reveals that there is a substantial significant relationship between Total Quality Management Practices and quality teacher education in State government owned public tertiary institutions in Lagos State. This finding is in agreement with the results of earlier study conducted by [54] who reported positive relationship between TQM and quality teacher education in tertiary institutions in Lagos State. According to him, and in line with what goes on around the world as far as teacher quality is concerned, the author identifies the following selected factors as elements of teacher quality namely academic qualification, teaching experience, training on the job and level of ICT compliance in relation to work efficiency. He concludes that teachers in schools are expected to possess desirable personal and professional qualities that will enable them perform well and achieve the aims and objectives of education as spelt out in Nigeria's National Policy on Education

Yet, one major finding of this study is that there is a significant difference in Total Quality Management Practices and quality teacher education between public colleges of education and universities in Lagos State. This difference could due to the different nature of the institutions (colleges of education and universities), the former producing NCE teachers for the primary and junior secondary schools and latter producing university degree holders generally for the secondary and particularly for the senior secondary schools. This is perhaps why Gbenu [54] reported a significant difference existing among the six Education Districts in Lagos State in terms of teacher quality as the teachers are of different qualifications from both colleges education and universities. The difference could also be attributed to the way and manner of implementation of TQM and the differences arising from the components of Quality Teacher Education in terms of learners (admission requirements), lecturers (qualification requirements) and contents (NCE curriculum versus university degree curriculum).

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 [55] 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 therefrom. 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.

V. CONCLUSION

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 Lagos state public tertiary institutions are very much aware of quality control and quality assurance as well as of TQM. As quality control and quality assurance focus on removing defective products (which are to be returned to the system), TQM sees these as wastes of resources and focuses on the process to produce defect-free products. Thus the Lagos State public tertiary institutions put TQM into practice to an appreciable extent in order to achieve Quality Teacher Education.

5.1 Implication 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 practise 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.

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