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QUALITY MANAGEMENT PRACTICES IN KENYAN EDUCATIONAL INSTITUTIONS: THE CASE OF THE UNIVERSITY OF NAIROBI

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Abstract

Quality management practices have been investigated extensively (Kaynak, 2003). Although a number of studies had been done on the concept and context of quality management and higher education respectively, none had been done within the context of public universities in Kenya, the case of the University of Nairobi. There was need therefore for a study to be carried out focusing on the University of Nairobi's academic services in conjunction with the main QM features. From the findings one can conclude the following, based on the objectives of the study; Firstly, the University of Nairobi has applied quality management and to a very great extent has ensured that the Quality Management Policy is appropriate to its purpose. Public universities should remove the status quo to be supportive to any formulation of new ideas in order to respond to an ever-changing environment in H.E. Crucially further research should be done to determine how Quality management can contribute to organizational financial performance and customer satisfaction.

Keywords: *Quality Management Practices, Continuous Improvement, Quality and Higher education.*

1. Introduction

1.1 General Background

Quality authorities like Joseph Juran (1950's); Edward Deming (1950's) and Philip Crosby (1980's) have put forth several approaches to improve company performance. These approaches are embodied in a set of quality management practices, known as Total Quality Management (TQM). On account of these policies, different approaches have been adopted for the introduction of quality management in universities, such as self-assessment and external assessment of the institutions, accreditation and certification systems, and different models of TQM (Wiklund *et al.*, 2003). Quality Management (QM) presents a strategic option and an integrated management philosophy for organizations, which allows them to reach their objectives effectively and efficiently, and to achieve sustainable competitive advantage (Goldberg and Cole, 2002).

Even TQM's promoters confess that organizations have not found it so easy to implement the quality Management Practices and to achieve the expected benefits (Kirk, 2000, pg. 14). More critically, Brown (2000) concluded that there are still organizations where, despite this criticism, the quality management philosophy continues to be a central focus of the business and a mechanism for contributing to better performances. This study extends previous research on the 'QM Practices" by establishing the most critical QM practices and tools used in the University of Nairobi's education services; and the challenges facing QM implementation.

QM is generally described as a collective, interlinked system of quality management practices that is associated with organizational performance (Cua et al. (2001), and Kaynak (2003), underlined the importance of causal relations between quality management practices. There is a prevailing belief that higher education has entered a new environment in which quality plays an increasingly

important role (Bergman, 1995). Feigenbaum (1994) believed that "quality of education" is the key factor in "invisible" competition between countries since the quality of products and services is determined by the way that "managers, teachers, workers, engineers, and economists think, act, and make decisions about quality". Higher education is being driven towards commercial competition imposed by economic forces (Seymour, 1992). Cost sharing in Kenyan higher education was introduced in 1991 as a response to the ever-declining state budget, which did not keep pace with high student intake when the first cohort of the 8-4-4 of students entered the university (Sanyal and Martin, 1998). The University of Nairobi is the pioneer admitting almost half of the students who qualify for higher education, with the highest capacity of internationally recognized degree courses (www.unobi.ac.ke).

1.2 The Concept of Quality Management (QM)

The word "quality" has been derived from the Latin word *qualis*, meaning, "what kind of". With a wide variety of meanings and connotations attached to it, quality is a difficult and elusive term to define, having thus been referred to as a "slippery concept" (Pfeffer and Coote, 1991). It is slippery because it has a wide variety of meanings. The word implies different things to different people. It has, thus, been defined with different perspectives and orientations, according to the person, the measures applied and the context within which it is considered. Amid the wide gamut of such definitions, there seems to be no consensus definition, but they all deal either with the product or the services producing these products/services. From the perspective of the consumers or users, the product or service-based definition is more useful. From the perspective of the organization providing goods/services, the process-perspective is more useful (Sangeeta and Banwe, 2004).

From a managerial philosophy viewpoint, the elements of QM are varied and this is very apparent in higher education. The different terms like strategic quality management, total quality improvement, and total quality leadership are actually examples showing the different emphasis placed on particular aspects of what is generally called quality management (Sangeeta and Banwe, 2004. Seymour (1992) identified four philosophical principles for what he called strategic quality management: "meeting or exceeding customer needs", "everyone's job", "Continuous improvement" and "leadership". He believed that the domination of customers is a reality that displays itself, for example with the free selection of university, course of study, or occasionally lecturer by students.

Relating to continuous improvement, Seymour (1992) highlighted the importance of processes and the necessity for a never-ending improvement strategy using the plan-do-check-act (PDCA) cycle. Tribus (1993) expressed the "process over the product principle" for the classroom stating that for improving students' achievements, the teaching process and not the examinations should be addressed. Harris (1992) defined the stages in a PDCA cycle developed for course improvement as designing courses to actually meet students' needs (plan), teaching courses (do), assessing how Fstudents use learning and surveying students' opinions (check), and modifying according to assessment findings (act).

1.2.1 Total Quality Management (TQM)

Quality management is a method for ensuring that all the activities necessary to design, develop and implement a product or service are effective and efficient with respect to the system and its performance (Deming, 1986). Quality management (QM), also called total quality management, evolved from many different management practices and improvement processes. QM is not specific to managing people, but rather is related to improving the quality of goods and services that are produced in order to satisfy customer demands. QM permeates the entire organization as it is being implemented. TQM has its roots in the quality movement that has made Japan such a strong force in the world economy. The Japanese philosophy of quality initially emphasized product and performance and only later shifted concern to customer satisfaction (Sergesketter, 1993).

Youngless (2000), argued that rather than trying to inspect the quality of products and services after they have been completed, TQM instills a philosophy of doing the job correctly the first time. It all sounds simple, but implementing the process requires an organizational culture and climate that are often alien and intimidating. Changes that must occur in the organization are so significant that it takes time and patience to complete the process. Just as the process does not occur overnight, the results may not be seen for a long period of time. Some experts say that it takes up to ten years to fully realize the results of implementing quality management. According to Bank, (1992), Total Quality Management (TQM) refers to management methods used to enhance quality and productivity in organizations, particularly businesses. TQM is a comprehensive system approach that works horizontally across an organization, involving all departments and employees and extending backward and forward to include both suppliers and clients/customers (Barnard, 1999).

TQM is only one of many acronyms used to label management systems that focus on quality. Other acronyms that have been used to describe similar quality management philosophies and programs include CQI (continuous quality improvement), SQC (statistical quality control), QFD (quality function deployment), QIDW (quality in daily work) and TQC (total quality

control). TQM provides a framework for implementing effective quality and productivity initiatives that can increase the profitability and competitiveness of organizations (Deming, 1992).

Quality management practices have been investigated extensively (Saraph et al., 1989; Flynn et al., 1994; Waldman, 1994; Powell, 1995; Ahire et al., 1996; Anderson and Sohal, 1999; Najmi and Kehoe, 2000; Zhang et al., 2000; Sun, 2001; Sila and Ebrahimpour, 2002; Kaynak, 2003). Although a plethora of practices have been described, similarities among practices can be discerned. The distinct generic practices proposed in a large set of articles are: top management commitment and support, organization for quality, employee training, employee participation, supplier quality management, customer focus, continuous support, improvement of quality system, information and analysis, and statistical quality techniques use.

The above generic practices were further grouped into three main categories following the classification of Flynn et al. (1995a), Pannirselvam and Ferguson (2001) and Sousa and Voss (2002), namely: management practice: issued from the top management; infrastructure practices: intended to support core practices; and core practices: based on tools and techniques specifically related to quality.

Issues of educational quality, rather than mass production, need to move to the forefront of the educational agenda of policy makers at this level of education. Considering this huge public and private investment in university education, there is an urgent need to evaluate how effectively this investment is being utilized by examining the quality of the educational infrastructure, the cadre of qualified tutors and other resources in place, and the quality of teaching and learning (Unesco, 2003).

1.2.2 Origins of TQM

Although TQM techniques were adopted prior to World War II by a number of organizations, the creation of the Total Quality Management philosophy is generally attributed to Dr. W. Edwards Deming. In the late 1920s, while working as a summer employee at Western Electric Company in Chicago, he found worker motivation systems to be degrading and economically unproductive; incentives were tied directly to quantity of output, and inefficient post-production inspection systems were used to find flawed goods (Hunt, 1992).

Deming teamed up in the 1930s with Walter A. Shewhart, a Bell Telephone Company statistician whose work convinced Deming that statistical control techniques could be used to supplant traditional management methods. Using Shewhart's theories, Deming devised a statistically controlled management process that provided managers with a means of determining when to intervene in an industrial process and when to leave it alone. Deming got a chance to put Shewhart's statistical-quality-control techniques, as well as his own management philosophies, to the test during World War II. Government managers found that his techniques could be easily taught to engineers and workers, and then quickly implemented in over-burdened war production plants (Weiss, and Gershon, 1989). One of Deming's clients, the U.S. State Department, sent him to Japan in 1947 as part of a national effort to revitalize the war-devastated Japanese economy. It was in Japan that Deming found an enthusiastic reception for his management ideas. Deming introduced his statistical process control, or statistical quality control, programs into Japan's ailing manufacturing sector. Those techniques are credited with instilling a dedication to quality and productivity in the Japanese industrial and service sectors that allowed the country to become a dominant force in the global economy by the 1980s (Harry and Sergesketter, 1993).

While Japan's industrial sector embarked on a quality initiative during the middle 1900s, most American companies continued to produce mass quantities of goods using traditional management techniques. America prospered as war-ravaged European countries looked to the United States for manufactured goods. In addition, a domestic population boom resulted in surging U.S. markets. But by the 1970s some American industries had come to be regarded as inferior to their Asian and European competitors. As a result of increasing economic globalization during the 1980s, made possible in part by advanced information technologies, the U.S. manufacturing sector fell prey to more competitive producers, particularly in Japan (Svenson, et al 1994).

In response to massive market share gains achieved by Japanese companies during the late 1970s and 1980s, U.S. producers scrambled to adopt quality and productivity techniques that might restore their competitiveness. Indeed, Deming's philosophies and systems were finally recognized in the United States, and Deming himself became a highly sought after lecturer and author. The "Deming Management Method" became the model for many American corporations eager to improve. And Total Quality Management, the phrase applied to quality initiatives proffered by Deming and other management authorities, became a staple of American enterprise by the late 1980s. By the early 1990s, the U.S. manufacturing sector had achieved marked gains in quality and productivity (Saylor, 1992).

1.3 Quality Management and Higher Education

Defining quality in higher education has proved to be a challenging task. Cheng and Tam (1997, p. 23) suggest that “education quality is a rather vague and controversial

concept" and Pounder (1999, p. 156) argues that quality is a "notoriously ambiguous term". As a result of the difficulty in defining quality, the measurement of quality has also proved to be contentious. There have been various attempts to draw on industry models such as the quality dimensions of Gronroos, Garvin and Parasuraman (Owlia and Aspinwall, 1996), SERVQUAL (Oldfield and Baron, 1998; Aldridge and Rowley, 1998), importance-performance analysis (Ford *et al.*, 1999) and the balanced scorecard (Cullen *et al.*, 2003) to develop quality assessment models for higher education. Internationally, the tool most frequently drawn upon (Cruickshank, 2003) however is that of total quality management (TQM), defined as: … a management approach of an organization, centered on quality, based on the participation of all its members and aiming at long run success through customer satisfaction and benefits to all members of the organization and to society (ISO 8402 in Wiklund *et al.*, 2003, p. 99).

The rationale for adoption is that TQM has the potential to encompass the quality perspectives of both external and internal stakeholders in an integrated manner and thereby enable a comprehensive approach to quality management that will assure quality as well as facilitate change and innovation. However, there have been a number of limitations identified in the wholesale adoption of TQM in higher education. Roffe (1998) suggested that while there are a small number of quality indicators in industry, these are more numerous and complex in higher education and are therefore more difficult to assess.

It has even been purported that the practice of TQM in higher education is deteriorating into managerialism because of the disparity between TQM techniques and educational processes, as well as the lack of shared vision within institutions or educational fields (Srikanthan and Dalrymple, 2003). As a result of this debate, Hewitt and Clayton (1999, p. 838) recommend that a model of educational quality that is different from, but capable of being related to commercial models, is beginning to emerge. However, it is not yet complete.

Srikanthan and Dalrymple (2003, p. 134) suggested that "a fresh view is necessary of quality in higher education". A starting point for this process is arguably a comprehensive assessment of current practices to determine the extent to which different meanings of quality and different stakeholder perspectives are taken into account. Drawing on relevant literature from both education and industry, a new framework for a quality audit tool has therefore been developed in order to assess current quality management approaches within higher education.

According to Lewis and Smith (1994) the perception of "quality of education" by many academics is increasingly becoming a problem for many outside the system. Unhappy customers and low employee morale are also mentioned as major challenges in universities (Coate, 1993). Engelkemeyer (1993) categorized the shortcomings of present higher education systems as poor teaching, anachronistic programmes, incoherent curricula, excessive price, and growing and inefficient administrative bureaucracies. QM "is seen by many as having enormous potential to respond to the challenges" (Hansen, 1993). It can be applied as a means for improving student/ staff morale, increasing productivity, and delivering higher quality services to both internal and external customers (Cowles, 1993).

Difficulties in defining customer requirements, while there is a variety of stakeholders (e.g. students, parents, employers, faculty members, government, and general society) having different interests, adds to the complexity. This characteristic of a higher education system, however, cannot overshadow the need for an operational definition of quality, one that provides a way for improvement. An important point which can be observed is the presence of a strong link between quality and market issues; higher quality can be gained through attracting more capable students and hiring higher quality staff, as well as absorbing more industrial grants which are all market related. This proposes the possible adoption of commercially based approaches such as QM in a public sector like higher education (Stensaasen, 1995).

Although higher education is able to adopt many of the principles of QM, it is reasonable to expect some problems when applying them to a different organizational structure to that of the commercial environment. The concern is that there will be a direct relationship between the conception of higher education being taken, the definition of quality being used and the performance indicators chosen to measure quality (Tam, 2001).

1.4 Characteristics of Education Services

Lovelock (1983) offered a useful conceptual foundation that involved five criteria, each of which can be examined on four dimensions. Using Lovelock's framework, education services can be described as having the following characteristics: The nature of the service act – the education service act is directed at people (their minds rather than their bodies), it is primarily "people based" rather than "equipment based" (Thomas, 1978), and involves largely intangible actions (Shostack, 1977). The relationship with the customer – education involves a lengthy and formal relationship with the client and a continuous delivery of the service. Students have what Lovelock (1983) refers to as a "membership" relationship with the service provider, offering an opportunity to develop strong client loyalty and enhanced client services.

The level of customization and judgement in service delivery – some services require greater customization and judgement on the part of service providers than others. The extent to which education services are customized is variable. Small tutorials or individual supervision are more customized than mass lectures. In most cases, the extent to which a service provider exercises judgement in meeting the needs of individual students is high. This is particularly the case with teaching staff. A problem arising from this is the possibility that quality can be affected by the variability of service delivery (Nicholls, 1987). The nature of demand relative to supply – a service can involve a widespread demand (e.g. electricity) or a narrow demand (e.g. insurance). At the same time, the ability to alter supply quickly, to meet demand fluctuations, varies. In education, demand is subject to relatively narrow fluctuations over time. However, supply can be difficult to manage, with limitations on the availability of staff and places in courses (Lovelock, 1983).

The method of service delivery – the delivery of services may be classified into those requiring single or multiple site outlets and the nature of the customer interaction with the service. Customers may move to a service provider, or a service provider may move to meet them. International education services traditionally required the student to come to the institution to complete their courses. However, this is changing, with the establishment of offshore teaching programs and distance education and modern technologies (Soutar and Mazzarol, 1995).

1.5 The Kenyan Public Universities and the University of Nairobi

University education in Kenya began in 1963 with just 571 students enrolled in Nairobi University College (Weidman, 1995). Since then, the system has undergone some commendable expansion, and by 1998 there were a total of six public universities and 18 private universities with varying degrees of recognition in the country. With the establishment of the 8-4-4-system, university education takes a period of four years to complete, however there are schools such as medicine and law that take an additional year or two. In addition to the universities and their constituent campuses, higher education in Kenya also includes polytechnics, institutes of science and technology and diploma level teacher training colleges (Encyclopedia of Higher Education, 1992).

Notwithstanding the expansion in the past several years, the capacity of the higher education sector in Kenya is still limited and accommodates only 7.5 percent of students graduating from secondary schools, and 2 percent of the expected age cohort (Weidman, 1995). Between 1990 and 2000, it was reported that 180,000 of the students who attained the minimum entry qualification failed to gain admission to public universities (Kigotho, 2000). Therefore, access to higher education in Kenya is extremely competitive and students must earn a grade point average on the Kenya Certificate of Secondary Education significantly over and beyond the minimum eligibility requirement.

Formal education in Kenya dates back to the colonial times. At independence, the government took over the education sector. Kenya has since attached education to economic and social development (Sifuna, 1998). The University of Nairobi, a body corporate established by an Act of Parliament Cap 210 of the Laws of Kenya is the pioneer institution of University education in Kenya. Being the only institution of higher learning in Kenya for a long time, the University of Nairobi responded to the national, regional and Africa's high level manpower training needs by developing and evolving strong, diversified academic programmes and specializations in sciences, applied sciences, technology, humanities, social sciences and the arts. To date, the range of programmes offered number approximately two hundred. The University has benefited from its location, in the country's capital, Nairobi, as well as, from the efforts of the nation's diverse population. (www.unobi.ac.ke).

The University of Nairobi owes its origin to several developments in higher education within the country and the region. The inception of the University of Nairobi is traced back to 1956 when the Royal Technical College admitted its first lot of A-level graduates for technical courses in April the same year. Soon after the arrival of students at the college, the pattern of education in East Africa came under security. Through the recommendation of a working party formed in 1958 chaired by the vice chancellor of the University of London, Sir John Lockwood, the Royal Technical College of East Africa was transformed. On 25th June 1961, the College became the second University College of East Africa; under the name Royal College Nairobi on 20th May 1964. On the attainment of University College status, the institution prepared students for bachelor's degrees awarded by the University of London, while also continuing to offer college diploma programmes (www.unobi.ac.ke).

The University College Nairobi provided educational opportunities in this capacity until 1966 when it began preparing students exclusively for degrees of the University of East Africa and not London, as was the case before. In 1970, the University College Nairobi transformed into the first national University in Kenya and was renamed the University of Nairobi. In view of the rapid expansion, The University underwent a major reconstruction in 1983 resulting in decentralization of the administration, by creation of six campus colleges headed by principals of colleges being: College of Agriculture & Veterinary Sciences situated at Upper Kabete Campus;

College of Architecture & Engineering situated at the Main Campus; College of Biological & Physical Sciences situated at Chiromo Campus; College of Education & External Studies situated at Kikuyu Campus; College of Health Sciences situated at the Kenyatta National Hospital; College of Humanities and Social sciences situated at the Main Campus - Faculty of Arts; Parklands-Faculty of Law and Lower Kabete Campus -Faculty of Commerce. Since then, there are seven Universities and seventeen private Universities competing with University of Nairobi (www.unobi.ac.ke).

Superior skills can be defined in terms of staff capability, systems, or marketing savvy not possessed by a competitor. A superior resource is defined in terms of physical resources that are available to help strategic implementation, such as operating scale, location, comprehensiveness of a distribution system, brand equity, or processing assets. The successful conversion of skills and resources into a unified set of competencies is the basis for a cost or differentiation strategy that succeeds in the marketplace. The bundle of competencies that a firm takes to the marketplace may be available to competitors (Barney, 1991; Mahoney and Pandian, 1992; Bharadwaj et al., 1993). The University of Nairobi, school of business like most higher learning institutions in Kenya is faced with the need to control an ever large and rapidly changing strategic environment (www.unobi.ac.ke). Performance is a function of competitive advantage achieved by turning a source advantage resulting from superior skills and resources into a competitive advantage (Day and Wensley, 1988).

The University of Nairobi records the largest number of student admissions for degree courses per annum. Quality infrastructure has been regarded as critical operational issue for the University of Nairobi to achieve its desired goal of becoming an international centre of excellence. The University of Nairobi has continued to rehabilitate the existing infrastructure, and complete many of the stalled projects. For example the Central Examinations Center situated at Chiromo is in progress, which when completed, it is expected to strengthen further the examination process in the University of Nairobi. The University has also continued to expand and strengthen its Information and Communication Technologies (ICT) infrastructure by establishing and equipping computer laboratories for students and staff. This, no doubt, has contributed to the improvement its ranking that is the 21st in Africa from position 26 in the previous year. The University is also grateful to its donors and partners who have contributed towards the acquisition of the critically needed ICT (www.unobi.ac.ke).

1.6 Statement of the Problem

Issues of Quality of Education, rather than mass production, need to move to the forefront of the educational agenda of policy makers at higher education level. Considering the huge public and private investment in university education, there is an urgent need to evaluate how effectively the investment is being utilized by examining the quality of the educational infrastructure, the cadre of qualified tutors and other resources in place, and the quality of teaching and learning (UNESCO, 2003).

The University of Nairobi is within the new global market, which is characterized by rapid information change, intense information flows and increasing competition through the reduction of barriers to trade and exchange, the University is forced to slowly emerge as an organization driven by the commercial imperative of market led forces. Yet the University of Nairobi's strategies for resource utilization are embedded in models of higher education. This had been coupled with other major challenges such as: inadequate funding especially for research and development, quality and relevance, inadequate use of ICT, lack of a unified accreditation system, un-harmonized legal frameworks, inadequate management capacity, drug and substance abuse. Hence there was need to document the most critical quality management practices used in its education services; while determining the challenges facing the University of Nairobi in the implementation of the continuous improvement principle of QM (www.unobi.ac.ke).

A number of researches had been done in the area of Quality and Quality Management. McCulloch (1993) in his study found out that the language of QM needs to be carefully adopted; he concluded that terms like customer, product, input, output, indicators, and efficiency are all problematic in higher education. This is because of the ever-changing demand of the customers and challenges posed by lack of enough resources. In accepting this idea, however, it seems that QM is inappropriate, since customer orientation, measurement, and cost reduction are among its main principles. For this, Coate (1993) concluded that experience shows arguments about language to be time-consuming and non-productive.

Other studies carried out by Cua et al. (2001) and Kaynak (2003), found that there is an underlined importance and causal relations between quality management practices and competitive advantage. Furthermore, many authors (Cua et al., 2001; Kaynak, 2003) suggested a positive association between QM practices and organizational performance. The conclusions from both the surveys and case studies found out that the different background of each institution and differences originate from five critical factors: degree of comprehensiveness of QM practices throughout the campus; inclusion or otherwise of academic sections; degree of employee involvement; time span of QM programmes; and lastly the degree of completion of the programmes when reporting.

Although a number of studies had been done on the concept and context of quality management and higher education respectively, none had been done within the context of public universities in Kenya, the case of the University of Nairobi. There was need therefore for a study to be carried out focusing on the University of Nairobi's academic services in conjunction with the main QM features. The following three research questions were focused in this study: What was the extent to which Quality Management was applied in the University of Nairobi? Second, what were the quality management practices used in the University of Nairobi? Third, what were the challenges faced in Quality Management implementation in the University of Nairobi

2.0 Research Strategy

This was a case study on the quality management practices in Kenyan educational institutions, particularly at the University of Nairobi. The research relied on records of events that had already taken place; hence, the researcher did not manipulate any casual factors or challenges that the academic managers/management posed to quality management in Universities.

The target population include all managers that constituted the University of Nairobi's management board. This did not include the other subsidiaries operating under the University's umbrella/name. Random Sampling was appropriate to obtain a sample from the population. The Sample was based on the following members of the University's Management Board drawn from respective schools/faculties/institutes/boards (see appendix 1).

Management Board	**Total Population (N)**
Vice chancellor	1
Deputy vice chancellor ()-Administration & Finance	1
Deputy vice chancellor-Academic Affairs	1
Deputy vice chancellor-Student Affairs	1
Principals of each University College	6
Deputy principal-CHSS	1
Academic Registrar	1
Administration Registrar	1
Planning Registrar	1
Finance Officer	1
Deans of faculties/schools	13
Directors of Schools /boards /institutes	18
Departmental Heads	95
Total	**140**

Simple random sampling assisted to minimize bias when dealing with the population sample. The sample consisted of the Senior Managers, Supervisors and junior staff. In Simple Random Sampling, the respondents from various cadres were selected randomly. Based on the above, a Sample of Seventy-Five (75) respondents was considered. This conformed to the widely held rule of thumb that to be representative, a sample should have 30 or more test units (Wayne and Terrell, 1995).

The following data collection instruments were used: questionnaires (both structured and unstructured); interviews (personal interviews which consisted of structured questions; secondary data such as files, pamphlets, office manuals circulars, policy papers and; observations (was done in a structural way).

The main instruments for data collection were questionnaires and document analysis. Questionnaires were used to obtain information from the University's Management board. The questionnaire was divided into three sub questionnaires: Questionnaire One: Extent to which Quality Management is applied; Questionnaire Two: The quality management practices and Questionnaire Three: Challenges in the Implementation of Quality Management Systems. Respondents were allowed fair latitude in their answering of interview questions

On the validity of Instruments, the researcher also carried out a pilot study to appraise the questionnaire soundness of the items and to estimate time required to answer the items. The pilot study covered some of the some 20 members of the management team in the University of Nairobi not covered in the sampled population. The results of the pilot study were discussed with the respondents and adjustments were made accordingly. The validity of instruments measures the consistency of instruments. Best and Kahn (2000) considers the reliability of the instruments to be the degree of consistency that the instruments or procedure demonstrates. What it measures it does so consistently. The reliability of a standardized test is usually expressed as a correlation coefficient, which measures the strength of association between variables. Such coefficient vary between 0.00 and 1.00 with the former showing that there is no reliability and the later showing there is perfect reliability which is an ideal situation. Reliability was ascertained by splitting the instruments into two; by placing all odd numbered in one sub-set and all even numbered items in another subset and then finding the coefficient of internal consistency. The reliability was estimated to be 0.89 meaning that the instruments will be reliable.

Data analysis was based on the research questions designed at the beginning of the research. Frequency tables, percentages and means were used to analyse the data. Responses in the questionnaires were tabulated, coded and processed by use of a computer. Once the responses were received, the questionnaires were edited for completeness and consistency before processing. Data

was coded to facilitate categorization. The data collected on the strategic responses was analysed quantitatively on the basis of the variables to be highlighted. Descriptive statistics was used especially the mode to determine the most frequent response on the factor under study. The mean was also used to determine the average response of the relationships between the variables under study. The presentation of the data utilized the use of tables and charts. These tools were selected for their clarity, preciseness, ease of understanding and interpretation.

The Statistical Package for Social Science (SPSS) programme was used to analyse the data, make conclusions and recommendations from the study. The responses on open-ended questions were reported by descriptive narrative. The results of the study were compared with literature review to establish the quality management practices in the University of Nairobi's education services.

3.0 Data Analysis, Findings and Discussions

This section covers data analysis and findings of the research. The data is summarized and presented in the form of proportions, means, and tables. Data was collected from Forty-Five (45) members of the Management Board of the University of Nairobi. The collected data has been analyzed and interpreted in line with the aims of the study namely, to determine the extent to which Quality Management was applied in the University of Nairobi; to establish the quality management practices used in the University of Nairobi; and lastly to determine the challenges faced in Quality Management implementation in the University of Nairobi. The respondents were: the Vice chancellor, the Deputy vice chancellors, Principals of each University College and their Deputies, Registrars, Deans of faculties/schools, Directors of Schools /boards /institutes and the Departmental Heads. Out of the Seventy-Five (75) members of the University of Nairobi's management board who were sampled and the questionnaires were administered, only Forty-Five (45) responded. This gave a response rate of 60% percent.

3.1 The Application of Quality Management in the University Academic Services

The respondents (Top management: DVC's, Registrar Dean of students and Finance manager) were asked to indicate the extent to which Quality Management is applied in the University of Nairobi's academic Services. There are very many quality certifications. The Quality Management System standards created by ISO are meant to certify the processes and the system of an organization and not the product or service itself. ISO 9000 standards do not certify the quality of the product or service. From the research data, the university of Nairobi's quality system is derived from ISO 9000, which is actually in line with the International Organization for Standardization that created the Quality Management System (QMS) standards in 1987 comprising of a series of standards that comprise ISO 9001:1987, ISO 9002:1987 and ISO 9003:1987; which were applicable in different types of industries, based on the type of activity: designing, production or service delivery. Thus the University of Nairobi has applied quality management to a great extent which is 100% in most of its academic process.

A quality management policy is important for an organization which is committed to quality service delivery. To test the extent onto which the university has applied quality management in its academic services, the respondents (Top Management) were asked to indicate extent to which they have used some basic aspects with respect to the University of Nairobi's Quality policy in its academic function. From the results in table 4.2 below, and based on the measures on the likert-scale (where 1 = Very Great Extent and 5 = Very Small Extent), the University of Nairobi to a very great extent (Mean = 1) has ensured that the Quality Management Policy is appropriate to the purpose of the University of Nairobi; and it provides the framework for establishing and reviewing quality objectives. This is in line with EFQM, (2003) documentation that excellent organization design, with a sound quality management can improve processes in order to fully satisfy, and generate increasing value for customers and other stakeholders.

Based on the measures on the likert-scale , the university of Nairobi has to a very great extent (Mean = 1) done the following: provided evidence of its commitment to the development and implementation of the University of Nairobi's QMS; defined its processes to ensure its academic/educational products meet the Commission of Higher Education regulatory requirements; implemented actions necessary to achieve planned results and continual improvement of their educational processes; and lastly communicated the importance of meeting customer as well as statutory and regulatory requirements. And to some great extent defined its processes to ensure its academic/educational products meet customer requirements.

3.2 The Quality Objectives in the University of Nairobi's Academic Function

The respondents (Top Management) were asked to indicate the extent based on the measures on the likert-scale 1-5 (where 1 = Very Great Extent and 5 = Very Small Extent), to which they agreed with some aspects that were touching on the University of Nairobi's Quality objectives in its academic function. From the research data, the university of Nairobi has to a very great extent (Mean = 1) established quality objectives including those needed to meet requirements for product at each (relevant) function and level; documented its objectives including those requirements needed for products with measurable quality objectives; and lastly the QMS

planning is performed to meet the quality objectives and requirements. Every institution needs to have quality objectives which can be used to guard against any erroneous outputs from its services and activities. University of Nairobi is not an exception.

3.3 The Documentation Requirements in the University of Nairobi's Quality Management Systems

The respondents (Principals and Directors) were asked with reference to the Documentation Requirements in the University of Nairobi's quality management systems based on the measures on the likert-scale 1-5 (where 1 = Very Great Extent and 5 = Very Small Extent), to indicate the extent to which the quality management system documents some basic aspects relating to quality. From the research data, the university of Nairobi has to a very great extent (Mean = 1) made use of a quality manual which is well documented; documented all the documents needed by the University of Nairobi to ensure the effective planning, operation and control of its processes and lastly documented all the procedures required by this international standards. A proper documentation of every process aspect an entity is very important. This is because it acts as a centre of reference and corrections can easily be made in case of any diversion from norms.

3.4 The Establishment of a Written Quality Manual in the University of Nairobi

From the results above, it has been established that the university of Nairobi has to a very great extent (Mean = 1) made use of a quality manual which is well documented. The respondents (Principals and Directors) were asked with reference to the Quality Manual in the University of Nairobi's quality management systems to indicate the extent to which the University's quality manual that includes its critical aspects and elements. The results are as in table 4.6.

Table 4.6 Quality Manual Aspects of the University of Nairobi

Quality Manual Aspects of the University of Nairobi	Descriptive Statistics	
	Mean	Std. Deviation
The University of Nairobi ensures the documents remain legible and readily identifiable	1.5098	.50488
The University has defined the scope of quality management system, including details of and justification for any exclusion	1.9804	.14003
The University has a description of the interaction between the processes of quality management system	2.0000	.00000
The University of Nairobi reviews and updates as necessary and re-approves documents	2.0000	1.00000
The University of Nairobi evaluates the need for changes to the University of Nairobi's QMS	2.0196	.14003
The University of Nairobi's management review include an evaluation of the QMS to ensure its continuing suitability, adequacy, and effectiveness	2.5098	.50488

Source: Research Data

From the results in table 4.6 above, the university of Nairobi has to a very great extent (Mean = 1) ensured that the documents remain legible and readily identifiable; and with a defined the scope of quality management system, including details of and justification for any exclusion. The University has also to a high extent (Mean = 2) described the interaction between the processes of quality management system; reviewed and updated as necessary and re-approved documents to evaluate the need for changes to the University of Nairobi's QMS to ensure its continuing suitability, adequacy, and effectiveness.

3.3.5 The University of Nairobi's Internal Audit in Quality Management in its Academic Function

The respondents (Principals and Directors) were asked to indicate the information they need most when they analyze data in the University of Nairobi's Internal Audit in Quality Management based on the measures on the likert-scale 1-5 (where 1 = Very Great Extent and 5 = Very Small Extent). From the research data, 51 % of the respondents felt that the analysis provides information relating to customer satisfaction (dissatisfaction); conformance to customer requirements; and suppliers: but very little information on the characteristics and trends of processes and products including preventive action.

The respondents (Principals and Directors) were further queried on how the University's Internal Audit in Quality Management is carried out, by indicating the extent to which they agreed with some of the key aspects of Internal Audit in Quality Management, and from the research data, the university of Nairobi has to a very great extent (Mean = 1 and 2, with a significant standard deviation) taken a corrective action to ensure conformity of the product, when planned results are not achieved; the University of Nairobi measures and monitors processes to demonstrate the processes ability to achieve planned results; it also conducts internal audits at planned intervals to determine whether the QMS conforms to the requirements of the ISO 9001:2000.

The University of Nairobi applies suitable methods to monitor and, where applicable, measure the quality management's system processes. It has also managed to monitor information relating to customer perception as to whether the University of Nairobi has fulfilled customer requirements. The respondents were uncertain about how the University of Nairobi determines, collects and analyzes data to asses the suitability of the QMS.

3.5 The Challenges Faced in Quality Management Implementation in the University of Nairobi

3.5.1 The University of Nairobi's Responsibility, Authority and Communication & Review in Quality Management

The biggest challenge in quality system implementation is the ability of an institution to carry responsibility the quality system, channelling authority, communication and Review in Quality Management in their core function. The respondents (Departmental Heads) were asked to indicate the extent to which they conquered with some aspects that relate to the University of Nairobi's Responsibility, authority and communication in Quality Management & Review in Quality Management in its academic function. From the research data, the respondents were uncertain about how the University of Nairobi's management review evaluates the need for changes to the University of Nairobi's QMS; how the Management representatives provide input to University of Nairobi top management on the performance of the QMS and needs for improvement; how the Management representatives promote awareness of customer requirements throughout the University of Nairobi; how the University of Nairobi's Management Output Review in Quality Management includes actions to improve the effectiveness of the quality management system and its processes Improvement of product related to customer requirements. Lastly, how the University of Nairobi's Management Output Review in Quality Management includes actions to resource needs.

Also from the research data, with respect to the University of Nairobi's Management Input Review the respondents were uncertain about how the University of Nairobi's process performance and product conformity; the status of preventive and corrective actions; the follow-up actions from previous management reviews; the planned changes that could affect the quality management system; and lastly on the recommendations for improvement.

3.5.2 The University of Nairobi's Resource Management in Quality Management in its Academic Function

The respondents (Departmental Heads) were asked to indicate the extent to which they agreed with some of the basic aspects underlying the University of Nairobi's Resource Management in Quality Management in its academic function; and how the University's Management has identified and implemented effective arrangements for communication with its customers in relation to some customer focus issues.

From the research results and data, the respondents were uncertain about how the University provides training or take other actions to satisfy competence needs; how the University ensures personnel are informed about the relevance and importance of their activities and how they contribute to the achievement of the quality objectives; how the University has planned (defined the sequence) the processes and sub-processes it needs for product realization (to have in place to produce its product or provide it's academic services); how the University of Nairobi identifies; how they determine and provide competent personnel to perform work affecting quality; and lastly how the university of Nairobi's management determines and provides resources needed to enhance customer satisfaction by meeting customer requirements. On the issue of communication, the respondents were also uncertain how the following information relating to its customers is communicated; Product/degree information; enquiries, contracts or order hauling, including amendments; and lastly how customer feedbacks, including customer complaints are handled at the moment.

3.5.3 Design, Development and the Challenges Affected the University of Nairobi's Implementation of a Quality Management System

The respondents were asked to indicate the extent to which some challenges have/are affected/affecting the University of Nairobi's implementation of a quality management system, with respect to the University of Nairobi's Design and development in Quality Management in its academic function. From the research data, the respondents were uncertain (Mean = 3) about how the University of Nairobi's change process that include an evaluation of the effects of changes on constituent parts, which are the campuses. They were also uncertain on how the University of Nairobi has established criteria for selection, evaluation, and re-evaluation of its suppliers; how validation for production and service provision processes is done i.e. Re-validation; how the University monitors information relating to customer perception as to whether the University of Nairobi has fulfilled customer requirements.

Also from the research data and based on the measures on the likert-scale 1-5 (where 1 = Very Great Extent and 5 = Very Small Extent), the university of Nairobi has to a very great extent (Mean = 1 and 2, with a significant standard deviation) faced with following major challenges in the implementation of its quality management system: failure to define the TQM

Challenge in University of Nairobi Academic function; the impact and validity of distance learning; and lastly there is poor utilization of faculty time. The university of Nairobi is uncertain (Mean = 3, with a significant standard deviation) on the extent to which it is faced with following major challenges in the implementation of its quality management system: the University of Nairobi Academic Culture is not Receptive to TQM; it is hard to establish whether students actually learn in any situation; there is inappropriate use of technological innovations in instruction and lastly, there is no viability of faculty tenure.

4.0 Summary and Conclusions

Based on the three specific objectives of this study on the extent to which Quality Management was applied in the University of Nairobi; the quality management practices used in the University of Nairobi; and lastly the challenges faced in Quality Management implementation in the University of Nairobi's academic function.

4.1 Summary

The university of Nairobi's quality system is derived from ISO 9000, which is actually in line with the International Organization for Standardization created the Quality Management System (QMS) standards in 1987 comprising of a series of standards comprising ISO 9001:1987, ISO 9002:1987 and ISO 9003:1987; which were applicable in different types of industries, based on the type of activity: designing, production or service delivery. Thus the University of Nairobi has applied quality management to a great extent which is 100% in most of this academic process.

The university of Nairobi has to a very great extent (Mean = 1) done the following: provided evidence of its commitment to the development and implementation of the University of Nairobi's QMS; defined its processes to ensure its academic/educational products meet the Commission of Higher Education regulatory requirements; implemented actions necessary to achieve planned results and continual improvement of their educational processes; and lastly communicated the importance of meeting customer as well as statutory and regulatory requirements. Also it has been established that the University of Nairobi has to a great extent (Mean = 1) made use of a quality manual which is well documented; documented all the documents needed by the University of Nairobi to ensure the effective planning, operation and control of its processes and lastly documented all the procedures required by this international standards. The university of Nairobi has to a very great extent (Mean = 1) made use of a quality manual which is well documented. The respondents (Principals and Directors) were asked with reference to the Quality Manual in the University of Nairobi's quality management systems to indicate the extent to which the University's quality manual that includes its critical aspects and elements

The university of Nairobi has to a very great extent (Mean = 1) ensured that the documents remain legible and readily identifiable; and with a defined the scope of quality management system, including details of and justification for any exclusion. The University has also to a high extent (Mean = 2) described the interaction between the processes of quality management system; reviewed and updated as necessary and re-approved documents to evaluate the need for changes to the University of Nairobi's QMS to ensure its continuing suitability, adequacy, and effectiveness.

The university of Nairobi has to a very great extent (Mean = 1 and 2, with a significant standard deviation) takes a corrective action to ensure conformity of the product, when planned results are not achieved; the University of Nairobi measures and monitors processes to demonstrate the processes ability to achieve planned results; it also conducts internal audits at planned intervals to determine whether the QMS conforms to the requirements of the ISO 9001:2000. Also the University of Nairobi applies suitable methods to monitor and, where applicable, measure the quality management's system processes. It has also managed to monitor information relating to customer perception as to whether the University of Nairobi has fulfilled customer requirements.

The university of Nairobi has to a very great extent (Mean = 1 and 2, with a significant standard deviation) faced with following major challenges in the implementation of its quality management system: failure to define the TQM Challenge in University of Nairobi Academic function; the impact and validity of distance learning; and lastly there is poor utilization of faculty time. This is in line with an observation that unhappy customers and low employee morale are major challenges in universities (Coate, 1993). Engelkemeyer (1993) categorized the shortcomings of present higher education systems as poor teaching, anachronistic programmes, incoherent curricula, excessive price, and growing and inefficient administrative bureaucracies.

4.2 Conclusions

Based on the results from data analysis and findings of the research, one can safely conclude the following, based on the objectives of the study; Firstly, the University of Nairobi records the largest number of student admissions for degree courses per annum. Quality infrastructure has been regarded as critical operational issue for the University of Nairobi to achieve its desired goal of becoming an international centre of excellence. There are very many quality certifications. Thus the University of Nairobi has applied quality management to a great extent which is 100% in most of

this academic process. Secondly, a quality management policy is important for an organization which is committed to quality service delivery. The University of Nairobi to a very great extent has ensured that the Quality Management Policy is appropriate to its purpose; and it provides the framework for establishing and reviewing quality objectives.

Thirdly, the university of Nairobi has to a very great extent done the following: provided evidence of its commitment to the development and implementation of the University of Nairobi's QMS; defined its processes to ensure its academic/educational products meet the Commission of Higher Education regulatory requirements; implemented actions necessary to achieve planned results and continual improvement of their educational processes; and lastly communicated the importance of meeting customer as well as statutory and regulatory requirements. And to some great extent defined its processes to ensure its academic/educational products meet customer requirements.

Fourthly, the university of Nairobi has to a very great extent established quality objectives including those needed to meet requirements for product at each (relevant) function and level; documented its objectives including those requirements needed for products with measurable quality objectives; and lastly the QMS planning is performed to meet the quality objectives and requirements. Fifthly, a proper documentation of every process aspect of an entity is very important. This is because it acts as a centre of reference and corrections can be easily made in case of any diversion from norms. The University of Nairobi has to a very great extent made use of a quality manual which is well documented; documented all the documents needed by the University of Nairobi to ensure the effective planning, operation and control of its processes and lastly documented all the procedures required by these international standards.

Sixthly, the university of Nairobi has to a very great extent takes a corrective action to ensure conformity of the product, when planned results are not achieved; measures and monitors processes to demonstrate the processes ability to achieve planned results; it also conducts internal audits at planned intervals to determine whether the QMS conforms to the requirements of the ISO 9001:2000. The University of Nairobi applies suitable methods to monitor and, where applicable, measure the quality management's system processes.

Seventh, the University of Nairobi's management review evaluates the need for changes to the University of Nairobi's QMS; how the Management representatives provide input to University of Nairobi top management on the performance of the QMS and needs for improvement; how the Management representatives promote awareness of customer requirements throughout the University of Nairobi; how the University of Nairobi's Management Output Review in Quality Management includes actions to improve of the effectiveness of the quality management system and its processes Improvement of product related to customer requirements. Lastly, how the University of Nairobi's Management Output Review in Quality Management includes actions to resource needs.

Eighth, the University provides training or take other actions to satisfy competence needs; how the University ensures personnel are informed about the relevance and importance of their activities and how they contribute to the achievement of the quality objectives; how the University has planned (defined the sequence) the processes and sub-processes it needs for product realization (to have in place to produce its product or provide it's academic services); how the University of Nairobi identifies; how they determine and provide competent personnel to perform work affecting quality; and lastly how the university of Nairobi's management determines and provides resources needed to enhance customer satisfaction by meeting customer requirements.

Ninth, the University of Nairobi's change process includes an evaluation of the effects of changes on constituent parts, which are the campuses. They were also uncertain on how the University of Nairobi has established criteria for selection, evaluation, and re-evaluation of its suppliers; how validation for production and service provision processes is done i.e. Re-validation; how the University monitors information relating to customer perception as to whether the University of Nairobi has fulfilled customer requirements.

The university of Nairobi has to a very great extent is faced with following major challenges in the implementation of its quality management system: failure to define the TQM Challenge in University of Nairobi Academic function; the impact and validity of distance learning; and lastly there is poor utilization of faculty time.

5.0 Recommendations

5.1 Recommendations for Improvement

The findings of the study indicate that there are a number of issues to be addressed. The following challenges need to be addressed within the University of Nairobi: skills, communication/management support and funding.

Since the three major challenges is the uncertainty about how the University of Nairobi's change process which includes an evaluation of the effects of changes on constituent parts, which are the campuses; the University

of Nairobi has not established criteria for selection, evaluation, and re-evaluation of its suppliers; and no validation for production and service provision processes is done i.e. Re-validation without monitoring information relating to customer perception as to whether the University of Nairobi has fulfilled customer requirements. These have led to: failure to define the TQM Challenge in University of Nairobi Academic function; the impact and validity of distance learning; and lastly there is poor utilization of faculty time. The university should not think that they are successful since there is no change, which is permanent. They should remove the status quo to be supportive to any formulation of new ideas in order to respond to an ever-changing environment in Kenyan higher Education. This will also curb the resistance from second level management.

5.3 Suggestion for Further Research

Every institution needs to have quality objectives which can be used t guard against any erroneous outputs from its services and activities. The University of Nairobi is not an exception. A quality management policy is important for an organisation which is committed to quality service delivery. To test the extent to which the university has applied quality management in its academic services, it is not an easy task due to various challenges. The respondents were very busy and as such getting time to fill the questionnaire was not easy. This is because the respondents either were attending academic seminars/Trips or there were examinations which were going on at that time. Also most of the respondents did not understand the quality management practices in place in the University of Nairobi thus making it difficult to give relevant information.

Areas of further research that were identified include a similar study to be carried out on other sectors of higher education, A study on the quality management practices used in the other sectors of higher education; and lastly the challenges faced in Quality Management implementation in the other sectors of higher education's academic function.. Crucially further research is should be done to determine how Quality management can contribute to a organizational financial performance and customer satisfaction and to what extent can the benefits if any be quantified by the organizations.

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Appendix I: List of Schools/Faculties/Institutes/Boards

Schools

Medicine
Computing & Informatics
Economics
Journalism
Pharmacy
Built Environment
Education
Mathematics
Physical Sciences
Law
Business
Dental Sciences
Engineering
Nursing Sciences
The Arts & Design

Faculties

Social Sciences
Veterinary Medicine
Arts
Agriculture

Institutes/Boards

Postgraduate Studies
African Studies
Development Studies
Housing and Building Research
Common Undergraduate Studies
Sports and Games
Nuclear Science
Institute for Tropical & Infectious Diseases
Institute of Diplomacy and International Studies
Population Studies & Research
Centre for International programmes and Links
University of Nairobi Science and Technology Park
Director, Student Welfare Authority
Co-ordinator, University of Nairobi Information & Computing Services
Co-ordinator, Centre for Advanced Studies of Environmental Law & Policy (CASELAP)