

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

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**A Project Report Submitted in Fulfilment of the Requirements for the
Award of the Degree of Master of Business and Administration (MBA),
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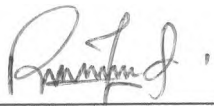
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DECLARATION

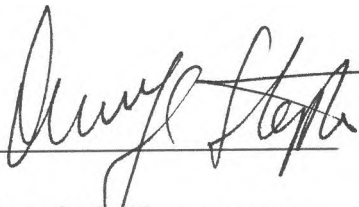
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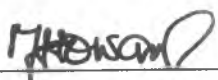
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This project has been presented for examination with my approval as the appointed supervisor and moderator.

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ABSTRACT

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 target population included all managers that constituted the University of Nairobi's management board.

The research methodology was based on the case study. An open ended and closed ended questionnaire was used to collect data, the questionnaire was divided into three (3) sub questions which were answered by the Top management, Principals and Directors and Heads of Departments respectively. A random sampling method was used to obtain a sample from the population of seventy-five (75). The collected data has been analyzed by the SPSS tool and descriptive narrative 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.

From the findings one can conclude the following, based on the objectives of the study; Firstly, the University of Nairobi has applied quality management to a great extent which is 100% in most of this academic process. Secondly, 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 has to a very great extent defined its processes to ensure its academic/educational products meet the Commission of Higher Education regulatory requirements.

The findings of the study indicate that there are a number of issues to be addressed and suggestions for further research. It 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.

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I am deeply indebted to the University of Nairobi's management staff and all those other people who graciously gave their time to be interviewed or fill the research instrument. Mr. John Mokoro and Lillian Osero, I also offer my thanks and appreciation.

DEDICATION

To my father Mr.Z. Nyaoga,
Thank you for taking me to school the first day.

To my mother Mrs.T.Nyaboke,
Thank you for your love.

To my Brother James Bosire,
Thank you for the moral and material support.

To my fiancée Veronicah Kemunto,
Thank you for your Love and Encouragement.

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LIST OF ABBREVIATIONS

BEM:	Business Excellence Models
CASELAP:	Co-ordinator, Centre for Advanced Studies of Environmental Law & Policy
CQI:	Continuous Quality Improvement
EFQM:	European Foundation for Quality Management
GDP:	Gross Domestic Product
GNI:	Gross Net Income
GRI:	Global Reporting Initiative
HEIs:	Higher Education Institutions
IBM:	International business Machines
ICT:	Information and Communication Technologies
ISO:	International Organization for Standardization
MBNQA:	Malcolm Baldrige National Quality Award
MRM:	Management Review Meeting
NCR:	Non-Conformances
PDCA:	Plan-Do-Check-Act cycle
QFD:	Quality Function Deployment
QIDW:	Quality In Daily Work
QM:	Quality Management
QMS:	Quality Management System
SD:	System Development
SPSS:	Statistical Package for Social Science
SQC:	Statistical Quality Control
TQC:	Total Quality Control
TQM:	Total Quality Management
UNEP:	United Nations Environment Programme
WBSCD:	World Business Commission for System Development

CHAPTER ONE: 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).

1.1.1 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 students use learning and surveying students' opinions (check), and modifying according to assessment findings (act).

1.1.2 Quality Management Practices

Quality management practices have been investigated extensively by various researchers (Kaynak, 2003). Although a plethora of practices have been described, similarities among practices can be discerned. The distinct generic practices proposed in quality management literature are: top management commitment and support, organization for quality, employee training, employee participation, supplier quality management, customer focus, continuous support, and improvement of quality system, information and analysis, and use of statistical quality techniques (Kaynak, 2003).

The above generic practices are further grouped into three main categories according to the classification of Flynn et al. (1995a), 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.

There is a body of work that tries to describe and justify how principles and practices of quality management can help improve universities (Biehl, 2000). The main conclusions of these works centre around two aspects. Firstly, the feasibility of using quality management in the educational context. Secondly, the effectiveness of this management approaches for the improvement of educational institutions in areas such as planning, human resources, resource administration, and educational and administrative process management.

On the other hand, there are other works that tend to lean on the contributions of quality authorities such as Deming, Juran, or Crosby. This is the case with studies such as Landesberg (1999) and Martin (1998). These contributions try to show how the doctrines of the great teachers can be transferred from the industrial to the education field, helping to transform the educational institutions. Finally, there are works attempting either to offer models for TQM implementation (Pires Da Rosa *et al.*, 2003) or to base themselves on existing excellence models, such as the Malcolm Baldrige National Quality Award or the European Foundation for Quality Management (EFQM) excellence model. The works of

Goldberg and Cole (2002), Osseo-Asare and Longbottom (2002), can be considered as examples of excellence models applied to the educational field.

1.1.3 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).

1.1.4 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).

1.1.5 The Higher Education System in Kenya

Kenya got its independence from Great Britain in 1963. With annual growth of 2.2 percent, by the year 2000, the total population of Kenya was 31.1 million in 2000 (World Bank, 2005). According to the World Bank Stratification, Kenya is among the least developed countries of the World. The 2000 report of the Bank, indicates that the Gross Net Income (GNI), GNI Per Capita and GDP of the country in US\$ stand at 10.7 billion, 360, and 10.4 billion respectively. Representing a significant share of central government expenditure - for example, 6 percent of GNP in 1994 (Weidman, 1995) - education is historically among the most important sectors of the government. After independence, the educational system in Kenya was structured after the British 7-4-2-3 model, with seven years of primary schooling, four years of secondary education and two years of advanced secondary education to be eligible for the 3-year university bachelor's degree program. Since the 1980s, however, there has been a shift to follow the 8-4-4 model of the American system with eight years of primary schooling followed by four years of secondary education and a four-year bachelor's degree program (International Higher Education, 1991).

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.

1.1.6 The Kenyan Public Universities and the University of Nairobi

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).

1.2 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

1.3 Objectives of the Study

The study aimed at achieving the following objectives:

- a) To determine the extent to which Quality Management was applied in the University of Nairobi
- b) To establish the quality management practices used in the University of Nairobi
- c) To determine the challenges faced in Quality Management implementation in the University of Nairobi.

1.4 Significance of the Study

The findings of the study were to be useful to the following stakeholders:

- a) Researchers/ Academicians, as the findings from the research will assist them to broaden their syllabus on the continuous improvement principle of QM.
- b) The University of Nairobi will also benefit from the insights with respect to this study in their policy formulation and implementation in their strategic plan with respect to the continuous improvement principle of QM in both non-educational and educational services.
- c) Other Universities and academic institutions will also use the findings in policy formulation and implementation with respect the continuous improvement principle of QM.



CHAPTER TWO: LITERATURE REVIEW

2.1 Quality Management

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).

2.1.1 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).

2.1.2 TQM Principles

Specifics related to the framework and implementation of TQM varies between different management professionals and TQM program facilitators, and the passage of time has inevitably brought changes in TQM emphases and language. But all TQM philosophies share common threads that emphasize quality, teamwork, and proactive philosophies of management and process improvement. As Weiss and Gershon (1989) observed in *Production and Operations Management*, "the terms quality management, quality control, and quality assurance often are used interchangeably. Regardless of the term used within any business, this function is directly responsible for the continual evaluation of the effectiveness of the total quality system." They go on to delineate the basic elements of total quality management as expounded by the American Society for Quality Control: policy, planning, and administration; product design and design change control; control of purchased material; production quality control; user contact and field performance; corrective action; and employee selection, training, and motivation.

For his part, Deming pointed to all of these factors as cornerstones of his total quality philosophies. In his book *Out of the Crisis*, he contended that companies needed to create an overarching business environment that emphasized improvement of products and services over short-term financial goals. He argued that if such a philosophy was adhered to, various aspects of business—ranging from training to system improvement to manager-worker

relationships—would become far more healthy and, ultimately, profitable. But while Deming was contemptuous of companies that based their business decisions on statistics that emphasized quantity over quality, he firmly believed that a well-conceived system of statistical process control could be an invaluable TQM tool. Only through the use of statistics, Deming argued, can managers know exactly what their problems are, learn how to fix them, and gauge the company's progress in achieving quality and organizational objectives (Saylor, 1992).

2.2 The Quality Management Process

According to Svenson, et al (1994) proposed the following steps that must be taken in the process of shifting to quality management in an organization:

Provide a QM environment: A QM environment is one in which the management-driven culture disappears and a participative culture takes its place. The basic tenets of QM are that employees must be involved and that there must be teamwork. Managers must be willing to involve workers in the decision-making process. Workers who function as a team have much more to offer collectively than do individual workers. Pooled resources are more valuable than just one person's contribution.

Modify reward systems: Reward systems need to be overhauled so as to recognize and encourage teamwork and innovation. The team, not the individual, is the foundation for TQM companies. If a company continues to use traditional compensation plans that create competition between workers, the team concept cannot be implemented. Traditional pay plans are often based on seniority, not on quality and performance. With QM, pay systems focus on team incentives. Each person is paid based on the team's performance. If one person on the team doesn't perform at the level expected, the team members will normally handle the situation. In some cases, payment is based on the performance of the entire company, which requires an even greater team effort.

Prepare workers for TQM: Workers must constantly be trained with the tools that are needed to upgrade the company's quality. Workers must understand the philosophy of QM before the tools can be used effectively. Managers must be dedicated to transforming their companies into "learning organizations" in which workers want to upgrade their skills and take advantage of the opportunities and incentives to do so. Companies that are successful with

TQM allocate up to about 5 percent of their employees' time on training. Some of this training time might include cross training that is, schooling workers in the skills to do a different job in the organization

Prepare employees to measure quality. To ensure gains in quality, the results must be measured objectively as the company progresses toward its quality objectives. This requires that employees be trained to use statistical process control techniques. Without knowledgeable workers using quantitative tools, the organization cannot achieve the intended TQM results.

Identify the appropriate starting place. One of the most difficult tasks in the beginning phases of implementing QM is to determine where to start. One approach to this beginning is to assume that 80 percent of all the company's problems stem from 20 percent of the company's processes (Pareto's Law). By identifying the problematic processes that fall in this 20 percent category, one can begin to focus on what needs attention first. Focusing attention on these problems first will return bigger payoffs and build momentum for the future.

Share information with everyone. If a team approach is to be used and if employees are expected to be involved in the decision-making process, it is imperative that information be shared with everyone. The decision-making process requires that workers be fully informed.

Include quality as an element of design. From beginning to end, customer satisfaction should be the focus of the quality management system. That means that the goal of customer satisfaction must be included in the planning processes and then maintained day in and day out.

Make error prevention the norm. One approach to producing quality products is to have a group of inspectors who will find the defective items and get rid of them. This is not the QM approach. With QM, the approach is continuous improvement of quality to assure that there are no products that are defective. The quality is built into the manufacturing process, and workers are continually improving products and processes. This approach is more cost-effective for the organization because it eliminates the waste of materials and workers' time.

Encourage cooperation and teamwork. If mistakes are made, it is the fault of a team of workers, not just one worker. In many organizations that do not use TQM, managers are

often on the hunt for someone to blame for problems that are found. This type of environment creates unhealthy stress and discourages innovative thought and practices by workers. The combination of a team approach and QM means seeking to improve the system when problems arise.

Make continuous improvement the goal. Processes and products should continually be improved. There is no end to the improvement process. This is true for even the best of the best companies. Total quality management never ends.

2.2.1 Prerequisites for Management in QM

Deming (1992) in his attempt to explain quality, he created fourteen points for management to adapt: first, Create constancy of purpose toward improvement of product and service, with the aim to become competitive, to stay in business, and to provide jobs; second, adopt a new philosophy. We are in a new economic age. Western management must awaken to the challenge, must learn their responsibilities, and must take on leadership for change; third, cease dependence on inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product in the first place; four, end the practice of awarding business on the basis of the price tag. Instead, minimize total cost. Move toward a single supplier for any one item, based on a long-term relationship of loyalty and trust; five, improve constantly and forever the system of production and service, in order to improve quality and productivity, and thus constantly decrease costs; six, Institute training on the job.

Seven, institute leadership. The aim of supervision should be to help people, machines, and gadgets to do a better job. Supervision of management is in need of overhaul, as is supervision of production workers; eight, drive out fear, so that everyone may work effectively for the company; nine, break down barriers between departments. People in research, design, sales, and production must work as a team, in order to foresee problems in production and in use that may be encountered with the product or service; ten, eliminate slogans, exhortations, and targets for the work force asking for zero defects and new levels of productivity (Allen, 1997).

Exhortations only create adversarial relationships, since the bulk of the causes of low quality and low productivity belong to the system and thus lie beyond the power of the work force. Eliminate work standards (quotas) on the factory floor, substituting leadership. Eliminate management by objective, by numbers, and by numeric goals, also substituting leadership; twelve, remove barriers that rob hourly workers of their right to pride of workmanship. The goals of supervisors must be changed from sheer numbers to quality; twelve remove barriers that rob people in management and in engineering of their right to pride of workmanship. This means, interalia, abolishment of the annual or merit rating and of management by objective; thirteen Institute a vigorous program of education and self-improvement; fourteen, put everybody in the company to work to accomplish the transformation. The transformation is everybody's job; It is readily apparent that the process of implementing a quality management system in an organization is closely aligned with the thinking of Deming (Allen, 1997).

The importance of quality is emphasized with the awards that are presented to companies that achieve high standards of quality. The Malcolm Baldrige National Quality Award was one of the first given. The 1991 award application identified several categories that companies must address to receive the award. It must be noted that very few awards are presented. Companies are rated on leadership, information and analysis, strategic quality planning, human resources utilization, quality assurance of products and services, quality results, and customer satisfaction. It is a very prestigious honor for a company to be recognized with this award. Other awards and certifications are also presented. However, they constantly change and new ones are added regularly, so they will not be discussed here. Quality management has become an important philosophy in businesses around the world, and this approach to building better products and services will continue. (Johnson, 1996),

2.3 The Quality Managing Practices

Sohail, (2003) in a case study of an institution, which had implemented a quality system and was the first private college in Malaysia to be awarded the ISO 9002 certification investigated and documented the most critical quality management practices as: *Changes in procedures; Continuous training; Conduct management review meeting (MRM); Certification; A review of the quality system after ISO certification; Student enrolment; Overall pass rate; Staff satisfaction;*

Changes in procedures: The document control manager was responsible for handling document amendments. A proper amendment system was created following the documented procedure on document preparation and amendment. Any change was initiated by filling in a change request form, which recorded the changes made.

Continuous training: Whenever there was any change in the departmental procedures, the heads of departments were given the responsibility for conducting continuous training for their members of staff. This was to ensure that the staffs were continuously informed of the current status of the procedures.

Conduct management review meeting (MRM): Once the internal quality audit has been completed at least once before the compliance audit, the management review meeting was conducted. The purpose of the meeting was to review the quality management system to ensure its continuing application; effectiveness and implementation were in line with the needs of the organization. Prior to the compliance audit, all head of departments were responsible for conducting an independent audit within their own departments to ensure that all quality records were updated, finalized and properly filed. The quality records were properly controlled by using a matrix that was attached to each of the procedures. The matrix clearly stated the coding of the records; where it should be stored; who can have access to the records and the retention period of the records. The compliance audit was conducted for a period of three days and the audit covered various core areas. A total of five minor non-conformances (NCR) were reported. Immediate corrective actions were taken in response to the NCR.

Certification: The College was awarded its certification of ISO 9002 on 19 November 1998, under the scope of "Provision for higher education, training and education supporting services". The college was the first private college in Malaysia that was awarded the certification in total (all departments).

A review of the quality system after ISO certification: With the heads representing their department on the steering committee, any issue pertaining to the individual departmental management was easily resolved. Efforts to co-ordinate and link tasks of the various departments resulted in a more co-ordinated management across the board. The college functioned in a more co-ordinated manner across all the departments. It is observed that there has been a consistency in approach to the delivery of lectures. The administration of the

program is regulated and monitored through the program co-ordinator. Consequently, communication among program courses has been more organized, manageable and consistent with the requirements of standardization. However, the drawback has been that there is some kind of restriction on the lecturers, as the system is rigid and inhibits them from delivering the course content with their instinctive flair and creativity. The course materials provided for the students are standardized. The respective heads of department monitors the progress of the achievement in order to ensure that all employees are on track towards achieving the objectives of the college.

With record maintenance and filing systems being standardized, record traceability is much more systematic within a department. Information required by other departments is easily available. Further, with the job responsibilities of the employees being clearly defined and documented, each and every employee is clearly aware of their objectives and is able to set their achievement targets. Achievement targets for the various departments are set in discussion with the chief executive officer at the management review meeting. Heads of departments assess the performance of their subordinates based on the set targets. Overlapping of duties, work overload and work redundancies are lessened tremendously. As a result, employees are seen as being more satisfied with their work schedules.

Student enrolment: A survey was conducted to gather information on the reasons for student enrolment. Students studying various courses at the institution were randomly selected. The survey showed that interest in the course offered, availability of hostel facilities and courses with consistent employability have been the three major reasons for students to enroll at the institution. The quality of education and the ISO 9002 certification have also been the other major reasons for students to enroll at the college. It is interesting to note that the nearness to place of residence and lower tuition fees have been the least important reasons for pursuing studies. It is obvious from this that quality in education has a premium. A cross comparison between genders on the reasons reveals interesting results. While an overwhelming percentage of male respondents cited an interest in course offered as a major reason for enrolling, this has been in stark contrast to the results from female respondents. Clearly a major reason for female respondents to enroll has been the nearness to place of residence. While the award of ISO 9002 has been a reason for enrolling by an overwhelming number of female respondents, this has not been so in the case of the male respondents.

Overall pass rate: A review of the records relating to the overall pass rate at the HEI reveals that a progressive trend is in evidence. The student pass rate for year 2001 was 93.6 per cent; for 2000 it was 89.3 per cent, and in 1999, it was 79 per cent. While the cause of this cannot be conclusively established, indications are that the implementations of quality measures are largely the contributing factors for this trend.

Staff satisfaction: A survey was conducted to collect information on the level of the teaching staff satisfaction. A survey conducted in the second half of 2001 whereby the respondents were divided into two groups, with those having been in service for three years or less and those with three years or more showed that: the three-year service was chosen as a cut-off as the college was established in 1994 and the quality implementation exercise commenced in 1997. It was evident that male staff with more than three years of experience is more satisfied as compared to those with fewer than three years at the institution. As for the female staff, length of stay does not appear to influence satisfaction. Overall, majorities of the staff are satisfied with the system in existence. Given the dichotomous grouping of data, phi-coefficient correlation coefficient and its significance were obtained (Siegel and Castellan, 1988). From the results obtained, it is obvious that there are no significant differences between the gender and the two groups of respondents for each of the measures.

Supplier satisfaction: Supplier satisfaction and confidence are also an essential aspect of quality in education in Higher Education Institutions (HEIs). Suppliers here mean the parent body or universities that have been permitted by Commission of Higher Education to administer their tertiary programmes. If a HEI are unable to produce high achievers in the university programmes, Commission will normally withdraw the permit granted, it is evident that the Universities have been able to forge partnerships and maintain relations with a number of universities and institutes, since obtaining the quality certification.

2.3.1 Other Quality Management Practices Include:

Leadership: Excellent leaders develop and facilitate the achievement of the mission and vision. They develop organizational values and systems required for sustainable success and implement these via their actions and behaviors (EFQM, 2003).

The management's commitment and leadership in quality must be visible, permanent and present at all management levels (Dean and Bowen, 1994), since it acts as the guide and

promoter of the TQM implementation process. Nevertheless, to be successful, one has to move into action. Here, investment in human, material and financial resources supporting the achievement of the objectives and the development of policies and strategies becomes indispensable (Pires Da Rosa et al., 2003). Moreover, the involvement of the entire workforce must be fostered and their efforts directed towards improvement recognized.

The above aspects are confirmed by empirical studies conducted by some authors such as Eskildsen and Dahlgaard (2000) or Flynn et al. (1994), which demonstrated the significant positive correlation between leadership and the other key TQM implementation factors

Policy and strategy: Excellent organizations implement their mission and vision by developing a stakeholder focused strategy that takes account of the market and sector in which it operates. Policies, plans, objectives, and processes are developed and deployed to deliver the strategy (EFQM, 2003). Policy and strategy must be put into practice through the deployment of the key processes, suitable policy and staff management, and through the establishment of partnerships (Winn and Cameron, 1998).

The theoretical and empirical literature studied focuses on the development and implementation of specific quality policies and strategies (Saraph et al., 1989), and on how these should be integrated into the organization's policies and strategies (Wilson and Collier, 2000). Other studies make no explicit reference to policy and strategy but analyze it as a fundamental aspect within other dimensions such as the "shared vision" (Dow et al., 1999). This includes aspects such as the establishment in the organization of strategic planning processes encompassing the points of view and requirements of internal and external customers. (EFQM, 2003)

Detert and Jenni (2000) speak of a "system thinking" which requires all members of the organization to take into account how their actions affect those of other people in the university institution. In a centre of higher education, this overall vision may be demonstrated using clear goals shared by all: professors, students and managers. These goals must take shape in all the activities of the university via the strategic planning process (Zink and Schmidt, 1995).

People management: Excellent organizations manage, develop and release the full potential of their people at an individual, team-based and organizational level. They promote fairness

and equality and involve and empower their people. They care for, communicate, reward and recognize, in a way that motivates staff and builds commitment to using their skills and knowledge for the benefit of the organization (EFQM, 2003).

The importance of this yardstick is emphasized by Ahmad and Schroeder (2002) who noted that human resource management is the cornerstone on which an important part of the success of TQM rests, since the quality improvement process is one of organizational learning based on people. Essential activities for people management include appropriate selection, reward and professional development (Flynn et al., 1994), the establishment of training plans (Gatewood and Riordan, 1997), the commitment to and involvement with quality (Ahire et al., 1996), or the establishment of an effective communication system (Zink and Schmidt, 1995). In the education field, Detert and Jenni (2000) and Osseo-Asare and Longbottom (2002) emphasise the role of training as a key factor and imply the continuous acquisition of new knowledge and skills by all employees.

In short, an appropriate personnel recruitment and selection policy, along with a workforce which is trained, involved and committed to quality and to the improvement of the activities of the organization must have an effect on performance and improvement of the organization's key processes. This leads to achievement of better results. (Flynn et al., 1994),

Partnerships and resources: Excellent organizations plan and manage external partnerships, suppliers and internal resources in order to support policy and strategy and the effective operation of processes. During planning and whilst managing partnerships and resources they balance the current and future needs of the organization, the community and the environment (EFQM, 2003). The importance of relationships with suppliers and the management of tangible and intangible resources is an aspect frequently addressed in the literature on quality management (Eskildsen and Dahlgard, 2000). In the field of higher education, resource and partnership management is not a subject that is particularly discussed in the literature. In spite of this, universities, like any other organisation, must optimise the scarce resources they have, and appropriately manage the suppliers of specific inputs which represent a significant cost in budgetary terms (Osseo-Asare and Longbottom, 2002; Pires Da Rosa et al., 2003). This will lead to better and more efficient management of their processes or key activities. Eskildsen and Dahlgard (2000), in an empirical analysis of the EFQM model, discovered a

significant positive relationship between partnership management and key process management.

Process management: Excellent organizations design, manage and improve processes in order to fully satisfy, and generate increasing value for, customers and other stakeholders (EFQM, 2003).

Analyzing the structure of the relationships in the EFQM model, process management appears to be the link between the other agents and the results. The key processes of a higher education centre will not be the same as those in other organizations, but once they have been identified, there should be no differences in terms of their management and improvement (Zink and Schmidt, 1995). The key processes are considered to be those that have a significant effect on the critical results for a given organization (Kanji and Tambi, 1999). In universities, these processes are identified by Zink and Schmidt (1995) and Pires Da Rosa et al. (2003) as the processes of administration and service, teaching and learning, and research.

2.4 Quality Management System Implementation

Jablonski (1992) offered a five-phase guideline for implementing total quality management: preparation, planning, assessment, implementation, and diversification. Each phase is designed to be executed as part of a long-term goal of continually increasing quality and productivity. Jablonski's approach is one of many that have been applied to achieve TQM, but contains the key elements commonly associated with other popular total quality systems.

Preparation—during preparation, management decides whether or not to pursue a TQM program. They undergo initial training, identify needs for outside consultants, develop a specific vision and goals, draft a corporate policy, commit the necessary resources, and communicate the goals throughout the organization.

Planning—in the planning stage, a detailed plan of implementation is drafted (including budget and schedule), the infrastructure that will support the program is established, and the resources necessary to begin the plan are earmarked and secured

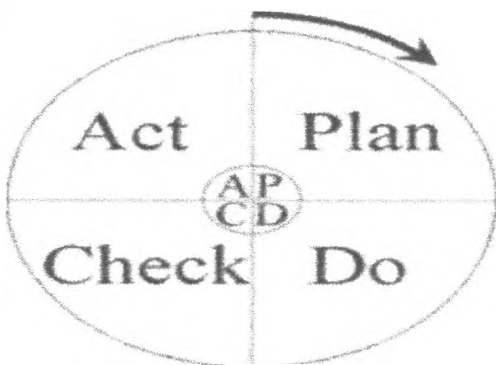
Assessment - this stage emphasizes a thorough self-assessment-with input from customers/clients - of the qualities and characteristics of individuals in the company, as well as the company as a whole

Implementation: at this point, the organization can already begin to determine its return on its investment in TQM. It is during this phase that support personnel are chosen and trained, and managers and the work force are trained. Training entails raising workers' awareness of exactly what TQM involves and how it can help them and the company. It also explains each worker's role in the program and explains what is expected of all the workers. Diversifications—in this stage, managers utilize their TQM experiences and successes to bring groups outside the organization (suppliers, distributors, and other companies have impact the business's overall health) into the quality process. Diversification activities include training, rewarding, supporting, and partnering with groups that are embraced by the organization's TQM initiatives.

2.4.1 Quality Improvement

W. Edwards Deming is best known for his management philosophy establishing quality, productivity, and competitive position. He has formulated 14 points of attention for managers, some of these points are more appropriate for service management: Break down barriers between departments; Management should learn their responsibilities, and take on leadership. Improve constantly; Institute a programme of education and self-improvement (Hewitt and Clayton, 1999). The following diagram is the Shewhart cycle (PDCA) for quality improvement, made popular by Deming

Shewhart Cycle



Source: Hewitt, F. and Clayton, M. (1999), "Quality and complexity – lessons from English higher education", *International Journal of Quality & Reliability Management*, Vol. 16 No. 9, pp. 838-58, .

The philosophy is to keep improving the quality of an organization. It is defined by four keys: *Plan*: Design or revise business process components to improve results. *Do*: Implement the plan and measure its performance. *Check*: Assess the measurements and report the results to decision makers. *Act*: Decide on changes needed to improve the process. The

consolidation phase enables the organization to take stock of what has been taking place and to ensure made to processes that require documentation (both to allow processes to be repeatable and to facilitate recognition of the achievement of some form of quality standard)

2.4.2 Quality Standards

The International Organization for Standardization created the Quality Management System (QMS) standards in 1987. These were the 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. The standards have been regularly reviewed every few years by the International Organization for Standardization (ISO). The version of these standards was revised in 1994 and was called the series; comprising of the ISO 9001:1994, 9002:1994 and 9003:1994 versions. The last revision was in the year 2000 and the series was called ISO 9000:2000 series.

However the ISO 9002 and 9003 standards were integrated and one single certifiable standard was created under ISO 9001:2000. Since December 2003, ISO 9002 and 9003 standards are not valid, and the organizations previously holding these standards need to do a transition from the old to the new standards. The document gives guidelines for performance improvement over and above the basic standard (ISO 9001:2000).

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. Recently the International Organization released a new standard, ISO 22000, meant for the food industry. This standard covers the values and principles of ISO 9000 and the HACCP standards. It gives one single integrated standard for the food industry and is expected to become more popular in the coming years in such industry. The most elaborated and accepted concept of quality management is the model of the EFQM Excellence Model.

2.4.3 Making QM Work

Jablonski, (1992) in his journal *Implementing TQM*, identified three characteristics necessary for TQM to succeed within an organization: participative management, continuous process improvement; and the utilization of teams. Participative management refers to the intimate involvement of all members of a company in the management process, thus de-emphasizing

traditional top-down management methods. In other words, managers set policies and make key decisions only with the input and guidance of the subordinates that will have to implement and adhere to the directives. This technique improves upper management's grasp of operations and, more importantly, is an important motivator for workers who begin to feel like they have control and ownership of the process in which they participate.

Continuous process improvement, the second characteristic, entails the recognition of small, incremental gains toward the goal of total quality. Large gains are accomplished by small, sustainable improvements over a long term. This concept necessitates a long-term approach by managers and the willingness to invest in the present for benefits that manifest themselves in the future. A corollary of continuous improvement is that workers and management develop an appreciation for, and confidence in, TQM over a period of time.

Teamwork, the third necessary ingredient for the success of TQM, involves the organization of cross-functional teams within the company. This multidisciplinary team approach helps workers to share knowledge, identify problems and opportunities, derive a comprehensive understanding of their role in the over-all process, and align their work goals with those of the organization.

Jablonski (1992) also identified six attributes of successful TQM programs: Customer focus (includes internal customers such as other departments and coworkers as well as external customers); Process focus; Prevention versus inspection (development of a process that incorporates quality during production, rather than a process that attempts to achieve quality through inspection after resources have already been consumed to produce the good or service); Employee empowerment and compensation, Fact-based decision making; and Receptiveness to feedback

2.5 Literature on QM from Higher Education

The quality improvement movement began in both the United States and Japan before World War II. Throughout the war, Americans continued to improve concepts related to manufacturing productivity. After the war, the Japanese pursued the idea of quality improvement. It was W. Edwards Deming, an American, who helped the Japanese focus on their fixation with quality (Jablonski, 1992)

According to Matthews (1993), barriers to applying QM in higher education are related to the highly generic and idealistic mission of the institutions, the lack of agreement on the meaning or implications of quality, and the academic freedom and tenure which have resulted in an administration having relatively limited control over key personnel. The difficulty resulting from the freedom, as Hansen (1993) stated, is that most academic staff "do not view their work as contributing directly either to their institution's output or to the satisfaction of the institution's customers, however customers are defined". Seymour (1992) observed that the problem arising from this type of autonomy is that organizations operate like a random collection of elements driving off in different directions with no unifying purpose. The lack of a strong power base, the number of constituencies, and the autonomous spirit in universities are factors, which make leadership very difficult. (Scaffer, 1991)

The continuous improvement principle of QM also poses problems. Four main constraints of improvement attempts in higher education (and probably in all public sectors), according to Seymour, (1992), are unwillingness to change, compartmentalization, lack of competition, and conformance to minimum requirements. Cyret (1991) observed that there is a feeling among academic staff that everything possible to achieve excellence is being done. Bergman (1995) related this feeling to the self-sufficiency, fragmentation, individualism, and isolated power of the professional body forming barriers to any transformation process. However, he believed that academic core values such as knowledge, critical thinking, academic freedom, personal integrity, and decentralization could be of help if they were considered as a basis for the change process.

Early in the 1990s, at least partially in response to the corporate interest of firms such as IBM that had invested considerable time and resources in promoting the use of TQM in higher education, several attempts were made to summarize its collegiate impact. Particularly notable were reviews by the American Association for Higher Education (1993, 1994) and an entire issue in the journal *Total Quality Management* (1996). A perusal of these publications reveals they are notable for their focus on TQM processes and implementation rather than on evidence. Little actual empirical evidence is included, unless one is interested in the fact that perhaps 50 per cent of all institutions of higher education had established some sort of quality-oriented council by the middle of the decade (Burkhalter, 1996).

Further, recent empirical evidence on TQM in higher education prototypically involves a non-academic process such as bill collection; cheque writing, admissions applications, and physical plant inventory and job scheduling. That is, the reported implementations of TQM focused primarily on the efficiency of non-academic processes and issues (round table discussion in *TQM in Higher Education*, 1994). Indeed, Owlia and Aspinwall (1996), writing in *Total Quality Management*, which is the “true believers” journal, observed that the focus of TQM always has been on the non-academic sides of institutions of higher education, a conclusion reiterated more recently by Barnard (1999).

That said, when academic issues were posed as a part of TQM, they nearly always focus upon variables such as student and consumer satisfaction. That is still true (Owlia and Aspinwall, 1998; Barnard, 1999; Kanji and Bin Al Tambi, 1999a, b). Kanji and Bin Al Tambi (1999a) note that UK institutions they surveyed did not utilize financial measures of the effectiveness of TQM. Exemplary here is Lozier and Teeter (1996), who reported that the use of TQM methods in an undergraduate statistics class resulted in higher student satisfaction. Lozier and Teeter also reported on the use of TQM at several other institutions (Drexel, Samford, Belmont, Penn State and Georgia Tech), where attention was given to the introduction of specific academic innovations such as collaborative work groups that were then compared with conventional instructional methods.

2.6 Why TQM has not been More Successful in Higher Education

The easiest answer to this question might seem to be, TQM simply does not work as advertised. And this is fundamentally true. Yet, the more interesting response would be – why is this so? Why did almost two-thirds of collegiate institutions using TQM in 1991 abandon it by 1996? (Klocinski, 1999). There are three major classes of reasons.

2.6.1 Failure to Focus on the Big Questions

A look at the limited amount of TQM empirical evidence available in the higher education realm reveals that the vast majority of TQM efforts in colleges and universities have focused on the non-academic facets of these institutions’ operations (American Association for Higher Education, 1993, 1994) and the April 1996 issue of *Total Quality Management* (1996)). As noted elsewhere, these implementations usually involve a non-academic process

such as bill collection, cheque writing, admissions applications, and physical plant inventory and job scheduling.

As Koch and Fisher (1998) have noted, such improvements are valuable to any institution of higher education, for they have the potential to release badly needed resources for the academic enterprises which are the *raison d'être* of colleges and universities. The most important challenges facing institutions of higher education today relate to larger questions of curriculum and what should be taught, the viability of faculty tenure, the use of faculty time, the propriety of technological innovations in instruction, the impact and validity of distance learning, whether students actually learn in any situation, the division of resources and attention between undergraduate and graduate education, the extent to which institutions should become involved in economic development ventures, tuition and fee levels, campus diversity, alcohol and drug abuse, and so forth. The brutal truth is that TQM has had very little of consequence to say about any of these issues. All of which is to say that TQM has missed the mark on the most important higher education questions of the day. It focuses on how students register rather on than what they learn or the role of faculty tenure.

Thus, the most important reason why TQM has fallen short in academe is that it simply has not spoken to the most important issues facing colleges and universities. Many, if not most, of the most pressing issues involve questions of value – what should these institutions do and to what purposes do they extend themselves? Of the “larger questions” noted in the above paragraph, TQM is irrelevant to the absolutely critical value judgments and answers academic institutions must eventually generate on these matters, whether or not they consciously do so. TQM conceivably could assist colleges and universities in determining its success in answering these questions, for example, how well it serves distance-learning students or how efficient is its interlibrary loan program. But a fair reading of the received evidence on TQM in higher education reveals not just a paucity of TQM contributions in these essential areas, but a virtual absence of contributions. All would agree that efficient operation of an institution’s physical plant is important, and would concur that administrative task in areas such as registration and bill paying must be performed efficiently. Institutions that ignore such processes soon regret that decision. Even so, such issues are not at the heart of a modern collegiate institution and, more so than any other reason, that is why TQM’s relevance to higher education has been so disappointingly small (American Association for Higher Education, 1993, 1994)

2.6.2 Academic Culture is not Receptive to TQM

Youssef *et al.* (1998) cogently point out that, while the general philosophy and language behind TQM are attractive to nearly all academics, many elements of modern university culture make it difficult for TQM actually to be implemented. Perhaps the most important element in academic culture that frustrates the introduction of conventional TQM procedures is the doctrine of academic freedom as it plays out in individual professorial classrooms and their professional lives. Faculty members traditionally have had the right to profess their disciplines as they see fit and to seek truth, wherever that search leads them. The content of their courses, the nature of their research, and their professional values over the years have been subsumed under the umbrella of academic freedom. Consequently, faculty feel free (and perhaps well justified) to reject evaluative processes such as TQM that might result in satisfaction or productivity measures that could be used to influence how they do their teaching and research. "Don't you ever try to tell me what to teach on the basis of popularity polls," asserted a faculty member to me after being asked by his department to consider TQM-oriented techniques in his classroom.

Related to this are the academic institutions of tenure and confidentiality. While tenure originally was designed as a protection of the academic freedom of threatened faculty, it has morphed into an employment security mechanism and is seen as such by most faculties. Hence, in contrast with the situation in a business firm, where a manager might order those who report to him to cooperate with TQM efforts, and penalize or even dismiss those who do not do so, such action is virtually impossible in higher education if the presumed target is a faculty member who holds academic tenure. In addition, the very strong academic tradition of confidentiality of evaluation, promotion, tenure, and salary activities usually means that the "managers" in higher education (administrators) cannot utilize or publicize the circumstances of an individual faculty member. Thus, incentives and disincentives frequently are less strong and even invisible. In any case, the prevalence in academe of "across the board," automatic salary increments implies that the range of behavior modification tools available to academic managers generally is less than that available to other managers (Zbaracki, 1998)

It also is true that faculty members tend to work alone more often than together (Youssef *et al.*, 1998). Team teaching is rare and professorial research in many disciplines (though

certainly not all) tends to be a solitary activity. Indeed, teamwork and group approaches in general are less common in higher education than in many other segments of society. Yet, teamwork is one of the keystones of TQM. It is true that academic institutions dote upon committees and this suggests teamwork; however, academic committees frequently seem designed to frustrate or delay action and usually are heavily process-oriented. They are less an example of faculty members working together and more one of administrative structure and process being utilized to protect and insulate individual faculty members, thus reinforcing the interpretations of academic freedom and individual work that were noted above. Zbaracki (1998) noted that one of the effects of TQM is, if anything, to reinforce the penchant of faculty for committees, meetings, and process-oriented activity. Committees are not a way to get things done; they are way not to get things done.

Zbaracki (1998) goes on to argue that academic committees are consistent with the time-honored notion of "shared governance," which posits that governing boards, administrators, and faculty should share the responsibility of governing and operating institutions of higher education. This phenomenon frequently occurs via joint governing board/administrator/faculty committee membership, or even outright ceding to faculty by boards and administrators of the authority and the essential right to make decisions in areas such as curriculum, evaluation, and promotion and tenure. This reality tends to cloud lines of authority and, from the standpoint of managerial theory, frequently separates authority from accountability. Faculty members in a shared governance situation can behave in a manner that many would call irresponsible, but not bear a significant burden for what they say or do, or do not do. For example, a faculty member will seldom be penalized for failing to attend meetings, whether or not they are important, and whether or not they have anything to do with TQM.

This does not suggest that shared governance is a bankrupt notion; far from it. It is one of the corner stones of modern US higher education and generally has served institutions well. It does suggest, nonetheless, that the ability of a college or university to implement TQM can easily be frustrated by shared governance mechanisms that non-academics find arcane and a matter of wonderment. It is one thing for a college president to announce that she is going to implement a TQM program; it is quite another for her to be able to accomplish what she has announced. One consequence is that the reluctant Professorate is not heavily invested in most

campus TQM programs. Carey (1998) reported those faculties were not involved at all in TQM efforts in approximately one-half of the 60 institutions whose efforts he analyzed.

An important reason why many faculties shy away from TQM programs is that such programs are viewed as “business-like” intrusions whose presence is inappropriate on campuses. Many faculties are repelled by the idea that they might force them to pre- and post-test the students in their courses, or administer student satisfaction surveys on a weekly or even daily basis, in order to gauge faculty effectiveness. As I note below, there is a remarkable lack of consensus on college campuses with reference to why colleges and universities exist. The introduction of TQM programs that emanate from the corporate sector and the notion of continuous measurement are antagonistic actions to many faculties. As Youssef *et al.* (1998) correctly noted, the usual faculty member is accustomed to measurement such as teacher evaluations occurring once a semester, at the end of a semester. Yet, TQM posits continuous measurement, perhaps after each lecture. Many faculties are threatened by this idea and hence reject TQM.

Finally, as Youssef *et al.* (1998) once again observe, the process of evaluation and measurement in higher education is bi-directional, at least where faculty and students are concerned. In a garden-variety corporate TQM situation, customers provide feedback on products, services, and personnel. Rare is the corporation that evaluates its customers and provides feedback to them (“You’re not a very good customer, Mary”). But that is exactly what occurs in higher education. Yes, students evaluate faculty and courses, but faculty also evaluate students – who are customers – by means of grades, letters of recommendations, subsequent admissions decisions, and so forth. The bi-directional nature of evaluation in higher education subtly changes the sociology of the situation. Will either students or faculty “tell the truth” when they know that there could be retribution later? The evaluation channel, then, suffers from more contamination in higher education than in corporate settings.

All the previous reasons help explain both why TQM has never taken off in higher education and why TQM efforts that have been undertaken have tended to examine the non-academic activities of colleges and universities. While higher education has always generated substantial volumes of rhetoric about TQM, and faculty have been among its foremost proponents, the truth is that the groves of academe have never been a fertile ground for

substantive TQM projects. Nor will they ever. The intrinsic nature of higher education and its distinctive culture militate against TQM ever acquiring a significant, real foothold in colleges and universities

2.6.3 Failure to Define the TQM Challenge in Higher Education

Failure to Define the TQM Challenge in Higher Education: what is it? One of several potential benefits organizations accrue from TQM processes is a clarification of who they are and what they do. One cannot talk about quality or measure it unless one has a defined notion of what one is doing and who is being served. It is generally agreed that, in order to do useful TQM, one must know who one's customers are. That is, whom is the organization attempting to serve? In the case of the Ford Motor Company, the answer is reasonably clear – it is primarily the individuals who purchase their automobiles, financing, parts, and service from Ford (Carey, 1998)

However, as Youssef *et al.* (1998) and others pointed out, the customers of higher education are much more diverse and not so easily defined. They variously include students, faculty, parents, alumni, sports fans and fine arts supporters, professional sports teams, business firms, those who utilize faculty research, individuals and organizations who rent facilities, farmers, high technology organizations, and governments, to name only a few. Because it is difficult to specify who the customers of higher education are, it is commensurately difficult to delineate how one should measure their satisfaction, even if one were to agree that it is satisfaction rather than other variables that one should use to measure the results of TQM. Few institutions in society are as complex in composition and motives as US colleges and universities. For that reason, identifying their customers is hardly an easy task and is one reason why TQM efforts often have fallen short in academe

Much the same considerations hold with respect to determining the products of higher education. The Ford Motor Company produces automobiles and other identifiable items such as parts and service. What is it that academic institutions produce? Education? Students? Credit hours? Degrees? Certificates? The performance of students in an examination? The ability of graduates to earn income, or is it the actual earned income of those graduates? The satisfaction and active citizenship of those graduates? The ability to understand a complex and rapidly changing world? Research? Winning athletic teams? Prize-winning theater

productions? One need not extend this list of questions very far to see that most individuals believe that colleges and universities produce many different products. The very complexity of this issue makes the implementation of TQM on most campuses an extremely difficult undertaking. If the denizens of higher education cannot agree on what they are producing, how can they apply quality-enhancing methodologies to those processes? Questions surrounding the identity of customers and products lead naturally to the "biggie": what are colleges and universities attempting to accomplish with whatever products they produce and then dispense or sell to whatever customers they have? That is, what is the purpose of higher education? What is the objective function and what are the constraints?

Once again, it is easier to posit an answer if one poses the analogous question for a manufacturing firm such as the Ford Motor Company. With an appropriate bow to the considerable literature on the motivation of firms, it is possible to assert with only some arm waving that Ford ostensibly attempts to maximize its profit, or the return to its stockholders, or the rate of return on its invested capital, or some similar variable. No such consensus exists in higher education, especially where faculty are concerned. Higher education publications, such as *The Chronicle of Higher Education*, are filled with continuing and even bitter arguments over the soul of the academy and quarrels over why colleges and universities exist. These disputations reflect the fractious, diverse, and decentralized nature of the academy and magnify the difficulty of defining a TQM study that actually deals with one of the central issues of modern US higher education. Consequently, there is a strong tendency for TQM to be applied to rather peripheral issues such as how efficiently campuses handle their mail.

Some believe one can eliminate such ambiguity and disagreement by focusing on individual colleges and universities that have adopted specified missions. True, concentrating on an institution such as Babson (which traditionally has focused on business-related education) or Eastman (music) is helpful, for these institutions have much better defined missions and cultures. But what about the California-Berkeley, Michigan, and MIT, or perhaps Illinois Wesleyan, Shaw, and Southern Utah? What are their objective functions? What are they attempting to maximize or minimize? What are the constraints? If one cannot answer these global questions, then it is difficult to apply TQM to the things that really matter in institutions of higher education. Yes, one can attempt to determine whether students in an organic chemistry class are more or less satisfied with a specific instructional technique, or

one can attempt to improve the satisfaction of faculty with the cleanliness of their offices. Once again, however, these are marginal considerations in the context of the modern college or university (EFQM, 2003)

It is not the fault of TQM that it is so difficult for institutions of higher education to specify their objective functions and constraints. Nonetheless, that difficulty necessarily diminishes the impact of TQM on college campuses. The more complex the enterprise, the less useful is TQM. That, more than any other reason, is why TQM's impact on higher education has been so small (Dale, 1999).

2.7 Theories and Conceptual Framework for Quality Management

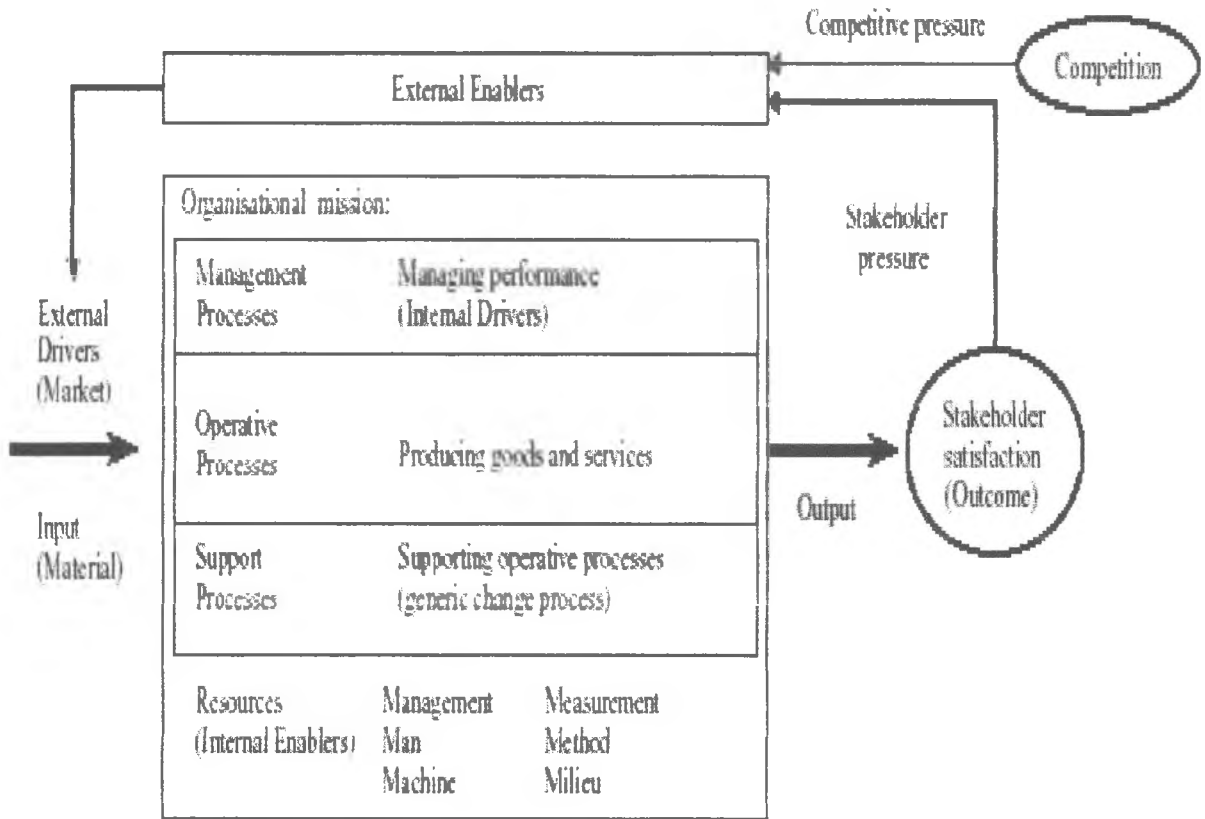
Commonly quoted core values for QM are "customer focus", "continuous improvement", "focus on processes", "focus on facts", "participation of everybody", and "committed leadership" (Dale, 1999; Dahlgard et al, 1998; Bergman and Klefsjo, 2003). From Figure 2.1, if the core values in business excellence models (BEM) are taken as examples of TQM-values, then a considerable number of values such as "valuing employees and partners", "systems perspective", "social responsibility", and "focus on results and creating value" could also be added (EFQM, 2003)

The term methodology is commonly used to describe activities that are performed in a certain order. Some methodologies applied to TQM include benchmarking, self-assessment, business process management and six-sigma. An important methodology within TQM is the self-assessment process based on criteria in BEM. The American Malcolm Baldrige National Quality Award (MBNQA), the European Foundation for Quality Management (EFQM) Excellence Model and the SIQ Model for Performance Excellence specify criteria based on TQM core values (MBNQA, 2004; EFQM, 2003; SIQ, 2003). Applying these criteria successfully is proven to improve economic performance (Hansson and Eriksson, 2002). Typical tools used in TQM initiatives include control charts, cause and effect diagrams, and process maps. In research covering 76 survey-based studies of TQM in the period 1989-2000 it was found that process management was characterized as a critical factor in one third of the studies (Sila and Ebrahimpour, 2003). The value of "focus on processes", the methodology of business process management and the tools of process mapping are chosen as the main components.

There does not seem to be any generally accepted definition of what a process is (Lindsay et al., 2003). According to Hammer (1996) and Harrington et al. (1997) there are a number of process definitions with common ingredients such as conversion from input to output, repetitive and interlinked activities, adding value for a customer. However, the differences between existing definitions are not extreme, and this makes it possible to present a synthesis reflecting a change from customer focus to stakeholder focus. Stakeholder is defined as: "Any identifiable group or individual who can affect the achievement of an organization's objectives or who is affected by the achievement of an organization's objectives" (Freeman and Reed, 1983). This definition was used here with the clarification that customers, future generations and nature, amongst others, are seen as stakeholders. Combining these concepts extends the process definition into: "A process is a network of activities that, by the use of resources, repeatedly converts an input to an output for stakeholders".

Organizational processes are categorized according to different principles. Two common principles used for categorization are the nature of the process and the hierarchies of details (Rentzhog, 1996). An example of the nature of the process is the classification into management, operative and support processes (Cakar et al., 2003, Bergman and Klefsjo 2003). Operative processes, which sometimes are called main processes or core processes, are defined as those that deliver output to the external stakeholders. The support processes that provide support to the operative processes and the management processes covering strategy, planning and control have internal stakeholders.

Figure 2.1. Organizational System Model for TQM, Indicating the Different Types of Processes, Measurements and Elements



Source: Adapted from Isaksson and Garvare (2003b)

Stakeholder focus on sustainability could be regarded as System Development-values. One of the best known initiatives for measuring the organizational performance is the Global Reporting Initiative (GRI) guidelines document (GRI, 2002), mentioned by the United Nations Environment Programme (UNEP) and the World Business Commission for System Development (UNEP, 2004; WBSCD, 2003). The GRI claimed that, as of early 2004, almost 400 companies from various countries refer to the GRI guidelines in their sustainability reports. This includes companies such as British Airways, General Motors and IBM (GRI, 2004).

In this application, the GRI guidelines could be seen as a methodology and the framework of GRI indicators considered as a tool. The principle of “focus on processes” is well founded in BEM and in the ISO 9000 quality management system (EN ISO 9000, 2000). However, the GRI guidelines do not mention any “focus on processes” and do not differentiate the nature of indicators such as policy, input, output and impact (GRI, 2002).

There is a certain risk of misinterpretation when speaking about a bottom line and then including policy and input in it. With the use of an organizational process model it should be possible to categorize measurements into different types to hopefully simplify the performance assessment process, “focus on processes”, could, therefore, be an important inclusion for a TQM-SD management system.

The main reporting principles mentioned in the GRI-guidelines are transparency and inclusiveness, but also auditability. These three principles could be related to the value of accountability. An aim to maximize system benefits over time would require the participation of most stakeholders, which implies access to organizational information. Doing this requires an organization that truly believes in being accountable for its performance. The values of “stakeholder focus”, “sustainability” and “accountability”, the methodology of applying the GRI guidelines and the tool of GRI indicator framework comprise the System Development (SD) components for the combined TQM-SD management system discussed here.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This part describes the procedures that the researcher used in the study to collect and analyze the data collected from the field. This section covered the following major areas: Research design, target population, sample and sampling procedure, research/data collection instruments, validity and reliability of instruments, data collection procedures, operationalization of the variables, ethics, limitations and data analysis procedures.

3.2 Research Design

The case study strategy was chosen as the most appropriate. 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.

3.3 Population

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.

3.4 Sampling Frame

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 3).

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

Source: www.unobi.ac.ke

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).

3.5 Research Instruments

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 (See Appendix 2). 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

3.7 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.

3.8 Instrument Reliability

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 is estimated to be 0.89 meaning that the instruments will be reliable.

3.9 Data Analysis Techniques

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.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter 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.

4.2 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, and the results are displayed in table 4.1 below.

Table 4.1 The University of Nairobi's quality Basis

The University of Nairobi's quality Basis	Distribution	
	Frequency	Percentage
ISO 9000	5	100
S9100	0	0
GE S1000	0	0
TOTAL	5	100

Source: Research Data

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 results in table 4.1, 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.

Table 4.2 The University of Nairobi's Quality Policy in its Academic Function

The University of Nairobi's Quality Policy in its Academic Function	Descriptive Statistics	
	Mean	Std. Deviation
Top management ensures the policy is appropriate to the purpose of the University of Nairobi	1.6000	.54772
The quality policy provides the framework for establishing and reviewing quality objectives	1.6000	.54772
There is a specific commitment in the quality policy to comply with requirements and continually improve the effectiveness of the QMS	2.8000	1.64317
The quality policy is reviewed for continuing suitability	2.8000	1.64317

Source: Research Data

4.3 The Quality Management Practices in the University Academic Services

4.3.1 General Quality Management Practices

Quality Management System standards created are meant to certify the processes and the system of an organization and not the product or service itself. This implies that the standards do not certify the quality of the product or service. With the recent release of a new standard, ISO 22000, the values and principles of ISO 9000 are expected to become more popular in the coming years. With these new developments, the respondents (Top Management) were asked to indicate the extent to which they have put in place on a scale of 1-5 (where 1 = Very Great Extent and 5 = Very Small Extent), an elaborated and accepted concept of quality management system in practice so as to become the centre of excellence. The results are as shown in table 4.3 below.

Table 4.3 General Quality management Practices

General Quality management Practices	Descriptive Statistics	
	Mean	Std. Deviation
The top management has provided evidence of its commitment to the development and implementation of the University of Nairobi's QMS	1.0000	.00000
The University of Nairobi has defined its processes to ensure its academic/educational products meet the Commission of Higher Education regulatory requirements	1.6000	.54772
The University of Nairobi implements actions necessary to achieve planned results and continual improvement of their educational processes	1.6000	.54772
The top management has communicated the importance of meeting customer as well as statutory and regulatory requirements	1.6000	.54772
The University of Nairobi has defined its processes to ensure its academic/educational products meet customer requirements	2.0000	.00000
The University of Nairobi measures its processes to ensure its educational products conform to customer requirements	2.0000	.00000
The University of Nairobi monitors its processes to ensure its educational products conform to customer requirements	2.0000	.00000
The University of Nairobi manages and analyses its processes to ensure its educational products conform to customer requirements	2.0000	.00000
The University of Nairobi ensures the availability of resources and information necessary to support the operation and monitoring of its educational processes	2.6000	.54772

Source: Research Data

From the results in table 4.2, and 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.

4.3.2 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, and the results are displayed in table 4.4 below.

Table 4.4 Aspects on the University of Nairobi's Quality Objectives

Aspects on the University of Nairobi's Quality Objectives	Descriptive Statistics	
	Mean	Std. Deviation
The top management has established quality objectives including those needed to meet requirements for product at each (relevant) function and level	1.5098	.50488
Objectives include those requirements needed for products	1.5098	.50488
Quality objectives are measurable	1.5294	.54233
The QMS planning is performed to meet the quality objectives and requirements	1.5294	.54233
The integrity of the QMS is maintained during changes initiated in processes and activities	2.4706	1.51463
Objectives support the University of Nairobi's quality policy commitment to continual improvement	2.4902	1.50163
Quality objectives are consistent with the quality policy	2.5098	1.50163

Source: Research Data

From the results in table 4.4 above, 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.

4.3.3 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. The results are as in table 4.5.

Table 4.5 The Documentation Requirements in the University of Nairobi's Quality Management Systems

The Documentation Requirements in the University of Nairobi's Quality Management Systems	Descriptive Statistics	
	Mean	Std. Deviation
The university has a quality manual	1.5098	.50488
The university has documented all the documents needed by the University of Nairobi to ensure the effective planning, operation and control of its processes	1.5098	.50488
The university documents procedures required by this international standard	1.5294	.54233
The university documents statements of a quality policy and quality objectives	1.9804	.14003

Source: Research Data

From the results in table 4.4 above, 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.

4.3.4 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

4.3.5 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. The responses are as in table 4.7 below.

Table 4.7 The University's Internal Audit in Quality Management

The University's Internal Audit in Quality Management	Descriptive Statistics	
	Mean	Std. Deviation
When planned results are not achieved, a corrective action is taken, as required, to ensure conformity of the product	1.5098	.50488
The University of Nairobi measures and monitors processes to demonstrate the processes ability to achieve planned results	1.9804	.14003
The University conducts internal audits at planned intervals to determine whether the QMS conforms to the requirements of the ISO 9001:2000	2.0000	1.00000
The University of Nairobi applies suitable methods to monitor and, where applicable, measure the quality management's system processes	2.0000	1.00000
The University monitors information relating to customer perception as to whether the University of Nairobi has fulfilled customer requirements	2.0000	1.00000
Monitoring and measurement activities are included as well as other sources for points of data collection for purpose of analysis	2.0000	.00000
If nonconforming degree programme/course unit is detected after delivery the University takes actions when planned results are not achieved, is corrective action taken, as required, to ensure conformity of the product	2.4706	.54233
The University of Nairobi uses data to evaluate (identify) where continual improvement of the quality management system can be made	2.4902	.50488
The University of Nairobi determines, collects and analyzes data to assess the suitability of the QMS	3.0000	.00000

Source: Research Data

From the results in table 4.7 above, 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 assess the suitability of the QMS

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

4.4.1 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. The results are in table 4.8 below

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.

4.4.2 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. The results are as follows in table 4.8 below.

Table 4.8 Resource Management in Quality Management in its Academic Function

Resource Management in Quality Management in its Academic Function	Descriptive Statistics	
	Mean	Std. Deviation
The University provides training or take other actions to satisfy competence needs	3.2353	.90749
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	3.2941	1.10080
The University of Nairobi 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)	3.2941	1.10080
The University of Nairobi identifies how they determine and provide competent personnel to perform work affecting quality	3.4118	1.20294
The university of Nairobi's management determines and provides resources needed to enhance customer satisfaction by meeting customer requirements	3.9608	.69169

Source: Research Data

From the research results in table 4.8, 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 its 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.

4.4.3 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. The results are presented in table 4.9 below.

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.

Table 4.9 Challenges Affecting the University of Nairobi's Implementation of a Quality Management System

Challenges Affecting the University of Nairobi's Implementation of a Quality Management System	Descriptive Statistics	
	Mean	Std. Deviation
Failure to Define the TQM Challenge in University of Nairobi Academic function	2.9608	1.21591
The impact and validity of distance learning	3.1176	1.14275
There is poor utilization of faculty time	3.1765	1.09006
The University of Nairobi Academic Culture is not Receptive to TQM	3.4706	.83314
It is hard to establish whether students actually learn in any situation	3.4902	1.50163
There is inappropriate use of technological innovations in instruction	3.5098	1.28643
There is no viability of faculty tenure	3.5294	1.13759
It is hard to choose the curriculum and what should be taught	4.7059	.46018

Source: Research Data

From the results in table 4.9 above, 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.

Also from results in table 4.9 above 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 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.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings and makes conclusions on 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. It also includes the study recommendations for improvement and for further research

5.2 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.

5.3 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.

5.4 Recommendations

The findings of the study indicate that there are a number of issues to be addressed and suggestions for further research. 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.

5.5 Limitations of the Study.

Every institution needs to have quality objectives which can be used to 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.

5.6 Suggestions for Further Research

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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APPENDICES:

APPENDIX ONE: LETTER OF INTRODUCTION

Dear Sir/Madam, -----

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

I am a student pursuing a postgraduate degree at the school of business, University of Nairobi, currently in research year. My research is focusing on “**Quality Management Practices in Kenyan Educational Institutions: the Case of the University of Nairobi**”. The specific objectives of the survey component of the research are to determine the extent to which Quality Management is applied in the University of Nairobi, secondly, to establish the quality management practices used in the University of Nairobi and third, to determine the challenges faced in Quality Management implementation in the University of Nairobi.

If you are interested in the results from this study you are welcome to request a copy of the final report by supplying your name and email address. Any queries regarding the questionnaire or the overall study can be directed to the undersigned. Please be assured that this information is sought for research purposes only and your responses will be strictly confidential. No individual’s responses will be identified as such and the identity of persons responding will not be published or released to anyone. All information will be used for academic purposes only.

Please assist me in gathering enough information to present a representative finding on the current status of the most critical quality management practices and tools used in the University of Nairobi’s education services, by completing the attached questionnaire. Your participation is entirely voluntary and the questionnaire is completely anonymous. Thank you very much for helping with this important study.

Sincerely,

Richard Bitange Nyaoga

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E-mail: rnyaoga@yahoo.com

APPENDIX TWO: RESEARCH QUESTIONNAIRE

QUESTIONNAIRE ONE: FOR TOP MANAGEMENT

EXTENT TO WHICH QUALITY MANAGEMENT IS APPLIED IN THE UNIVERSITY OF NAIROBI

1. What is your quality system based on or derived from? (Check all that apply)

ISO-9000	S9100	Nadcap GQS	MIL-I-45208
ASQR-01	GE S1000	Boeing DI-9000	

2 Please indicate the extent to which the University of Nairobi has embraced the following aspects with respect to the University of Nairobi's quality Management Practices.

Please tick (v) on the extent column key numbers based on the key below

[1] = Very Great Extent

[2] = Great Extent

[3] = Uncertain

[4] = Small Extent

[5] = Very Small Extent

Statement	Extent				
	[1]	[2]	[3]	[4]	[5]
The University of Nairobi has defined its processes to ensure its academic/educational products meet customer requirements					
The University of Nairobi has defined its processes to ensure its academic/educational products meet the Commission of Higher Education regulatory requirements					
The University of Nairobi measures its processes to ensure its educational products conform to customer requirements					
The University of Nairobi monitors its processes to ensure its educational products conform to customer requirements					
The University of Nairobi manages and analyses its processes to ensure its educational products conform to customer requirements					
The University of Nairobi implements actions necessary to achieve planned results and continual improvement of their educational processes					
The University of Nairobi ensures the availability of resources and information necessary to support the operation and monitoring of its educational processes					
The top management Has provided evidence of its commitment to the development and implementation of the University of Nairobi's QMS					
The top management has communicated the importance of meeting customer as well as statutory and regulatory requirements					

3. Has the University of Nairobi's top management ensured that customers' requirements have been determined and are fulfilled with the aim of enhancing customer satisfaction?

a) Yes [] No []

Explain _____

4. To what extent do you agree with the following statements with respect to the University of Nairobi's Quality policy in its academic function? Please tick (v) on the extent column key numbers based on the key below

- [1] = Very Great Extent
- [2] = Great Extent
- [3] = Uncertain
- [4] = Small Extent
- [5] = Very Small Extent

University of Nairobi's Quality policy	Extent				
	[1]	[2]	[3]	[4]	[5]
Top management ensures the policy is appropriate to the purpose of the University of Nairobi					
There is a specific commitment in the quality policy to comply with requirements and continually improve the effectiveness of the QMS					
The quality policy provides the framework for establishing and reviewing quality objectives					
The quality policy is reviewed for continuing suitability					

5. To what extent do you agree with the following statements with respect to the University of Nairobi's Quality objectives in its academic function? Please tick (v) on the extent column key numbers based on the key below.

- [1] = Very Great Extent
- [2] = Great Extent
- [3] = Uncertain
- [4] = Small Extent
- [5] = Very Small Extent

University of Nairobi's Quality Objectives	Extent				
	[1]	[2]	[3]	[4]	[5]
The top management has established quality objectives including those needed to meet requirements for product at each (relevant) function and level					
Quality objectives are measurable					
Quality objectives are consistent with the quality policy					
Objectives support the University of Nairobi's quality policy commitment to continual improvement					
Objectives include those requirements needed for products					
The QMS planning is performed to meet the quality objectives and requirements					
The integrity of the QMS is maintained during changes initiated in processes and activities					

Thank You for Taking Your Time to Answer This Questionnaire

QUESTIONNAIRE TWO: FOR PRINCIPALS AND DIRECTORS

QUALITY MANAGEMENT PRACTICES USED IN THE UNIVERSITY OF NAIROBI

1. With reference to the Documentation Requirements in the University of Nairobi's quality management systems, to what extent does the quality management system document the following? Please tick (v) on the extent column key numbers based on the key below

[1] = Very Great Extent

[2] = Great Extent

[3] = Uncertain

[4] = Small Extent

[5] = Very Small Extent

University of Nairobi's Documentations	Extent				
	[1]	[2]	[3]	[4]	[5]
The university documents statements of a quality policy and quality objectives					
The university has a quality manual					
The university documents procedures required by this international standard					
The university has documented all the documents needed by the University of Nairobi to ensure the effective planning, operation and control of its processes					

2. With reference to the Quality Manual in the University of Nairobi's quality management systems, please indicate the extent to which the University has established a written quality manual that includes the following?

Please tick (v) on the extent column key numbers based on the key below.

[1] = Very Great Extent

[2] = Great Extent

[3] = Uncertain

[4] = Small Extent

[5] = Very Small Extent

University of Nairobi's Quality Manual & Control of Documents	Extent				
	[1]	[2]	[3]	[4]	[5]
The University has defined the scope of quality management system, including details of and justification for any exclusion					
The University has a description of the interaction between the processes of quality management system					
The University of Nairobi reviews and updates as necessary and re-approves documents					
The University of Nairobi ensures the documents remain legible and readily identifiable					
The University of Nairobi's management review include an evaluation of the QMS to ensure its continuing suitability, adequacy, and effectiveness					
The University of Nairobi evaluates the need for changes to the University of Nairobi's QMS					

3. Does the analysis of data in the University of Nairobi's Internal Audit in Quality Management provide in the information relating to:

- a) Customer satisfaction (dissatisfaction) []
 b) Conformance to customer requirements []
 c) Characteristics and trends of processes and products including for preventative action []
 d) Suppliers []

Others _____

6. To what extent do you agree with the following statements with respect to the University of Nairobi's Internal Audit in Quality Management in its academic function?

Please tick (v) on the extent column key numbers based on the key below

[1] = Very Great Extent

[2] = Great Extent

[3] = Uncertain

[4] = Small Extent

[5] = Very Small Extent

University of Nairobi's Internal Audit in Quality Management	Extent				
	[1]	[2]	[3]	[4]	[5]
The University of Nairobi conducts internal audits at planned intervals to determine whether the quality management system 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					
When planned results are not achieved, a corrective action is taken, as required, to ensure conformity of the product					
The University of Nairobi monitors information relating to customer perception as to whether the University of Nairobi has fulfilled customer requirements					
The University of Nairobi measures and monitors processes to demonstrate the processes ability to achieve planned results					
If nonconforming degree programme/course unit is detected after delivery or use has started, the University of Nairobi takes actions when planned results are not achieved, is corrective action taken, as required, to ensure conformity of the product					
The University of Nairobi determines, collects and analyzes data to asses the suitability of the QMS					
Monitoring and measurement activities are included as well as other sources for points of data collection for purpose of analysis					
The University of Nairobi uses data to evaluate (identify) where continual improvement of the quality management system can be made					

Thank You for Taking Your Time to Answer This Questionnaire

QUESTIONNAIRE THREE: FOR DEPARTMENTAL HEADS

THE CHALLENGES FACED IN QUALITY MANAGEMENT IMPLEMENTATION IN THE UNIVERSITY OF NAIROBI.

1. To what extent do you agree with the following statements with respect to the University of Nairobi's Responsibility, authority and communication in Quality Management & Review in Quality Management in its academic function? Please tick (v) on the extent column key numbers based on the key below. {[1] = Very Great Extent; [2] = Great Extent; [3] = Uncertain; [4] = Small Extent; [5] = Very Small Extent}

University of Nairobi's Responsibility, Authority and Communication in Quality Management: & Review in Quality Management	Extent				
	[1]	[2]	[3]	[4]	[5]
The Management representatives provide input to top management on the performance of the QMS and needs for improvement					
The Management representatives promote awareness of customer requirements throughout the University of Nairobi					
The University of Nairobi has established processes to ensure various levels and functions within the University of Nairobi communicate about the effectiveness of the quality management system					
The University of Nairobi's management review includes an evaluation of the QMS to ensure its continuing suitability, adequacy, and effectiveness					
The University of Nairobi's management review evaluates the need for changes to the University of Nairobi's QMS					
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.					
The University of Nairobi's Management Output Review in Quality Management includes actions to resource needs.					
Others					

2. To what extent does the University of Nairobi's Management Input Review include the following areas in Quality Management? Please tick (v) on the extent column key numbers based on the key below. { [1] = Very Great Extent; [2] = Great Extent; [3] = Uncertain; [4] = Small Extent; [5] = Very Small Extent}

University of Nairobi's Review Input	Extent				
	[1]	[2]	[3]	[4]	[5]
Process performance and product conformity					
Status of preventive and corrective actions					
Follow-up actions from previous management reviews					
Planned changes that could affect the quality management system					
Recommendations for improvement					

3. To what extent do you agree with the following statements with respect to the University of Nairobi's Resource Management in Quality Management in its academic function? Please tick (v) on the extent column key numbers based on the key below {[1] = Very Great Extent; [2] = Great Extent; [3] = Uncertain; [4] = Small Extent; [5] = Very Small Extent}

University of Nairobi's Resource Management in Quality Management	Extent				
	[1]	[2]	[3]	[4]	[5]
The university of Nairobi's management determines and provides resources needed to enhance customer satisfaction by meeting customer requirements					
The University of Nairobi identifies how they determine and provide competent personnel to perform work affecting quality					
The University of Nairobi provides training or take other actions to satisfy competence needs					
The University of Nairobi ensures personnel are informed about the relevance and importance of their activities and how they contribute to the achievement of the quality objectives					
The University of Nairobi 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)					

4. To what extent do you agree with the following statements with respect to the University of Nairobi's Design and development in Quality Management in its academic function? Please tick (v) on the extent column key numbers based on the key below {[1] = Very Great Extent; [2] = Great Extent; [3] = Uncertain; [4] = Small Extent; [5] = Very Small Extent}

University of Nairobi's Design and Development in Quality Management	Extent				
	[1]	[2]	[3]	[4]	[5]
The change process includes an evaluation of the effects of changes on constituent parts					
The University of Nairobi has established criteria for selection, evaluation, and re-evaluation of its suppliers					
There is validation for production and service provision processes include Re-validation					
The University of Nairobi monitors information relating to customer perception as to whether the University of Nairobi has fulfilled customer requirements					
The University of Nairobi has determined the methods to obtain and use this information					

5. To what extent has the University of Nairobi's Management identified and implemented effective arrangements for communication with its customers in relation to the following: Please tick (v) on the extent column key numbers based on the key below {[1] = Very Great Extent; [2] = Great Extent; [3] = Uncertain; [4] = Small Extent; [5] = Very Small Extent}

University of Nairobi's Review Output	Extent				
	[1]	[2]	[3]	[4]	[5]
Product information?					
Enquiries, contracts or order hauling, including amendments?					
Customer feedback, including customer complaints?					

6. To what extent have the following challenges affected the University of Nairobi's implementation of a quality management system? Please tick (v) on the extent column key numbers based on the key below {[1] = Very Great Extent; [2] = Great Extent; [3] = Uncertain; [4] = Small Extent; [5] = Very Small Extent}

Challenges Facing QM Implementation	Extent				
	[1]	[2]	[3]	[4]	[5]
It is hard to choose the curriculum and what should be taught					
There is no viability of faculty tenure					
There is poor utilization of faculty time					
There is inappropriate use of technological innovations in instruction					
The impact and validity of distance learning					
It is hard to establish whether students actually learn in any situation					
The University of Nairobi Academic Culture is not Receptive to TQM					
Failure to Define the TQM Challenge in University of Nairobi Academic function					

Thank You for Taking Your Time to Answer This Questionnaire

APPENDIX THREE: 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

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