Total Quality Management (TQM): A Continuous Improvement Framework for Boosting Higher Education in Ghana

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Abstract

Many researchers argue that the total quality management model should be modified in order to fit the higher education context. Yet, there is no quality management model which takes into account the nature of higher education and the need for professional autonomy, academic freedom and peer review. The purpose of this position paper is to develop a Total Quality Management (TQM) theoretical model that enhances and promotes professional autonomy, academic freedom and enhances quality academic teaching, learning and research processes of universities in Ghana. The purpose and objectives were addressed through a TQM theoretical and analytical review of literature in higher education. The paper further identifies areas of improvement in public sector higher education institutions in Ghana. Conclusions drawn from the review of related literature are that TQM is being adopted in higher educational institution but at a slower pace. Areas for further improvement include leadership, vision, ownership, evaluation, standardization, process and continuous improvement, employee training and student focus. Policy makers in higher educational institutions can opt for affirmative actions in order to bridge the gaps regarding TQM implementation which would in turn maximize the benefit to stakeholders. The authors of this paper espoused the implications of the new model on the quality practices of the institutions of higher learning in Ghana, especially the three major universities (University of Ghana, University of Cape Coast and the University of Science and Technology). Then based on the prevailing circumstances, they drew conclusion that even though, TQM emanated from the corporate sector, its significance is felt in the Higher Education sector too. This, in part, suggests TQM is an all-embracing, robust management tool needed for promoting quality delivery of education in institutions of higher learning.

Keywords: Quality, Total Quality Management, Quality Implementation, Quality in Higher Education, Continuous Improvement, Quality Management

Introduction

This position paper projects how Total Quality Management (TQM) as a quality management tool can be used to contextualize the Ghanaian institutions of higher learning. The paper introduces the concept of TQM taken into consideration several dimensions of the model. Since the focus of the paper was to develop a model to suit the local context using TQM, several theories and models had been dealt with and served as the basis for the development of the new model. Such theories and models are the Deming's vicious cycle, ISO 9000 and Crosby's model of TQM.

The Paper in Perspective

Higher education now finds itself in an increasingly competitive environment. Faced with skyrocketing tuition fees, declining demographics, reduced funding and resources, increased calls for accountability and increased productivity, and a *"buyer's market"*, colleges and universities are experiencing what many call *"crisis in higher education"* (Hung, 2003). In order to improve and sustain long-term stability and quality of education, new and innovative operating procedures and techniques need to be explored and implemented (Aspinwall, 2015). Although Total Quality Management (TQM) has already been embraced by a number of colleges and universities, it has primarily been implemented in the administrative, service, and non-academic units of those institutions. In order for TQM to effectively improve an institution's competitiveness, its philosophy and principles must be demand driven. The question that arises is why academic units have not readily embraced this management philosophy. The possible obstacles to effective implementation of TQM can be overcome to maximize its benefits in continuous improvement of our Universities. The thrust of this paper is to develop a TQM theoretical model that enhances and promotes professional autonomy, ensures academic freedom and enhances quality academic teaching, learning and research processes of Universities in Ghana.

An effective implementation of Total Quality Management (TQM) is the first step in realizing these changes (Hung, 2003). Several educational institution managers are already using this management technique. Such institutions appear to be going through several challenges in the use of TQM to improve management practices. Thus TQM has become a technique of choice in business, industry, colleges and   universities.

In light of this, many institutions have adopted the TQM technique. Although, several studies (Ahmed & Ali, 2012; Feng, Prajogo, Tan, & Sohal, 2006; Hui, Au, & Fock, 2004) had explored TQM practices in institutions of higher learning, there is still a gap in literature regarding the applicability of TQM in Ghanaian public universities. There is, therefore, the need to determine the viability of the applicability of TQM within the Ghanaian context. TQM as a management practice is useful in all organizations that aim to gain a competitive advantage over other players in the industrial sector. However, it is imperative to note that there are so many impediments that hinder effective implementation of the Total Quality Management (TQM) tool.

The thrust of this paper is to develop a TQM theoretical model that enhances and promotes professional autonomy, ensures academic freedom and enhances quality academic teaching, learning and quality research in universities.

Justification for this Paper

The question that arises is the need to study quality management in higher education. Higher education plays a significant role in contemporary society. For instance, over the last decades, the proportion of the youth entering higher educational institutions has increased in most developed countries (Ahmed & Ali, 2012). At the same time, there seems to be an increasing need for further education of people already in the workforce. Another motive for studying issues related to quality in higher education is that there are certain commonalities and differences that define aspects of higher education. The similarities and differences are worthy of investigation, because they tend to shed light on how quality issues could effectively be addressed.

Finally, previous studies on higher education have identified gaps in literature; however, it would be pretentious to assume that our attempts to understand the issues would

fundamentally reveal further insights into quality management at institutions of higher learning. The hurdle underlining TQM as a continuous improvement tool is how it could be used as a tool to achieve the complex multifaceted goals of institutions of higher learning. The insight gained from this might result in an understanding of related issues in other socio-cultural contexts.

Contributions of this Paper

Evidence from organizations achieving success suggested that most of these organizations had in one way, or the other, applied some of the principles of TQM. This paper would serve as a source of enlightenment to many educational institutions. In specific terms, interested stakeholders, such as students, parents, business/industry tertiary institutions, teachers/lecturers and administrators would be provided insights in understanding the rationale for the implementation of TQM in institutions of higher learning.

The scope of the new total quality management model would be applicable to any university that aims at supporting and motivating faculty to deliver a high-quality cutting edge teaching and research. However, this model specifically focuses on the academic departments and how they can ensure efficiency and effectiveness through its human capital.

Specifically, this paper would be beneficial to the following stakeholders: The Ministry of Education would gain more insights into how the Total Quality Management tool is implemented in educational institutions at all levels. This would promote quality standards in terms of management, planning and policy making. Institutional leaders who act as the managers of schools would gain insight into management challenges facing their institutions and probably find pragmatic measures in resolving them.

The board of governors of educational institutions would have a better understanding regarding the essence of leadership and use of resources in managing an institution effectively to ensure better customer satisfaction. It would further give insights into the impact of their involvement in school management and help improve quality of their output.

Operationalization of Key variables
Tertiary Institutions: These are post-secondary educational institutions.

Quality implementation: It is a process that occurs over a period of time which involves introducing new quality system within an organization.

Quality management: It is an aspect of the overall management function that determines cutting-edge policy issues.

Quality: These are features and characteristics of a product or service that is closely linked to satisfying stated or implied need.

Total quality management (TQM): It is an application of quantitative methods and human resources to improve all the processes within an organization in order to satisfy customers' immediate and future needs.

Scholarly Review
Theoretical Underpinnings

Though there are several theoretical underpinnings of Total Quality Management, for the purpose of this paper, the ISO 9000 and the Deming's vicious cycle and theories framed the paper. This stems from the fact that the ISO 9000 is described as a quality management system which directs and controls quality issues pertaining to a company's products and processes. However, within the context of institutions of higher learning, the focus is on continuous improvement in their operations, such as ensuring quality teaching, learning and research processes. This, therefore, suggests that directing and controlling quality is the major concern of the Quality Assurance Units.

ISO 9000 (International Organization for Standardization)

In fact, ISO 9000 is described as a quality management system which directs and controls quality issues in an organization. A quality system is a tool for controlling and improving the quality of a company's products and processes. The system must be documented because it is a foundation for quality audit. The international organization for standardization, which is responsible for ISO 9000, has different names in different countries. For instance, the term ANSI is used in USA, JISZ9000 in Japan, and BSEN ISO 9000 in the US. ISO9001, ISO9002, and ISO9003 contained needs for quality systems in different contract situations.

These three groups of standards can be classified as requirements standards. ISO 9001 was the most comprehensive part; including ISO 9000 family makes a distinction between the requirements for quality management systems and requirements for products.

The ISO 9000 standards: The quality management system in ISO 9000 series is based on "eight quality management principles" (Hung, 2003). These eight principles are customer focus, leadership, involvement of people, process approach, system approach to management, continual improvement, factual approach to decision-making and mutually beneficial supplier relationships.

- **Customer focus:** Satisfying different needs of customers in order for the organization to achieve its business goals.
- **Leadership:** Vital roles played by those in position of achieving the organization's objectives.
- **Process approach:** The inter-play between activities and resources in an organization. Harnessing all the human and material resources to promote productivity in an organization.
- **System approach to management:** A process of identifying a system of managing interrelated processes to enhance an organization's effectiveness.
- **Continual improvement:** Continuous improvement to enhance and promote competitiveness.
- **Factual approach to decision-making:** Important decisions in the organization are made by analyzing and interpreting related and useful data.
- **Mutually beneficial supplier relationships:** an organization and its suppliers forges an interdependent relationship, which benefits both the supplier and the company, will lead to success in achieving company goals.

Process identification, the sequence of these processes, process control, checking the availability of resources and information, and analyzing, measuring, and monitoring of the processes are special requirements for implementing a system according to standards. Also,

the standard is built on the four main areas. These areas are management responsibility, resource management, product realization and measurement, analysis and improvement.

TQM Model for Higher Education

Research evidence suggests that TQM has primarily been used in the industrial sector but there are reasons TQM should be applied in educational institutions. First, change is not easily accepted by the institution most of the time. Second is the risk of relying on the individual autonomy/authority of faculty members. In TQM, customer involvement and teamwork are key considerations according to Fisher (1993), however, a bit of modification are needed if it is to be applied in the educational sector. In fact, many institutions have reviewed the applicability of TQM in higher education and there are some proposed models to enhance its applicability. Motwani and Kumar (1997, pp.131– 135) have proposed a five step model that they believe is applicable to every institution. This model has five phases: **deciding, preparing, starting, expanding and evaluating.**

The model is clearly defined as what should be taken into consideration for effective implementation of TQM (Motwani & Kumar, 1997). However, a comparative analysis between the Deming Cycle and that of TQM revealed that there is a clear similarity between them. This suggests that the models can be merged to create a new robust model to serve as a blue-print or a guide for universities, especially, those who want to exploit the full benefits of TQM. It appears that the proposed TQM model is for quality improvement issues, but a blend of these models is robust enough to effectively address quality issues in the future. The proposed model will have a four-step cycle with the following features.

The **Plan** step in Deming cycle is divided into two parts. The first part is *Studying*. This involves conducting a feasibility study or an intensive research of what TQM is about and how it can be applicable to a specific organization. It is also significant to acknowledge that this stage requires top management support and commitment. Top management should fully understand the concept, its objectives and how these objectives would be accomplished. The second part of the plan step of this cycle is named *Preparing*; it focuses on performing an internal assessment in terms of the quality work done. It also entails defining values, methodologies and tools with the context of clearly defined objectives and visions.

The **Do** step in Deming cycle is about acting by implementing solutions. This entails issues and activities such as TQM, Core Values, Methodologies and tools, and distribution of some customer surveys to both internal customers and external customers. Also, Quality Assurance Units should be properly resourced to enable them perform their functions effectively to achieve the objective for which they were set up. Finally, measures must be put in place for its implementation.

The **Check** step in Deming cycle is evaluation. This involves the evaluation of the previous activities already undertaken. The most important activities at this point is to put in place effective mechanisms in order to achieve the stated objectives.

The **Act** step stipulates that if defects are found following from the evaluation, corrective measures should be taken. However, continuous improvement practices should be adopted if defects are not detected.

Theoretical Commentary

The literature reviewed so far suggests that several authors conceptualize definitions

and models of TQM differently. This suggests that each author's definition of the concept and its implementation strategy differ (Watson & Korukonda, 1995). However, no TQM discussion is complete without acknowledging the work of the five best known TQM experts, or "quality gurus" (Deming, 1982; Juran, 1974; Feigenbaum, 1951; Crosby, 1979; and Ishikawa, 1985). In a recent study, Reed, Igel and Laosirihongthong (2000) systematically reviewed the work and ideas of several TQM experts – Deming (1982, 1986), Juran (1974, 1988, 1989, 1992), Crosby (1979, 1996), Feigenbaum (1951, 1983, 1991), and Ishikawa (1985) – and pointed out the common elements that run through TQM. This review revealed six key elements of TQM. These are *customer satisfaction, cost reduction, leadership and top management commitment, training and education, teamwork and organisational culture*. In addition, Reed, Igel and Laosirihongthong (2000) also found commonly shared differences regarding the other TQM elements. The role statistical tools play in improving quality control was emphasised by everyone except Crosby (1996), who argued that the use of statistical control was not a core quality management issue. Similarly, while Feigenbaum, Ishikawa, and Juran stressed product design, Deming and Crosby did not. With the exception of Crosby, all mentioned planning, but each dealt with different aspects of it. Juran covered all facets of planning. Deming was concerned mostly with the stages of planned action, while Feigenbaum and Ishikawa focused on feedback and control. However, some of the definitions of TQM elements highlighted earlier need further discussion and interrogation.

Conceptual Review

The higher education total quality management model and how it impacts a university in terms of professional autonomy and scholarly activities are examined in order to study its positive and negative effects. The new management model that the thesis proposes is a quality management model that preserves academic values and freedom. Since higher educational leadership has a significant role in university management systems, the thesis reviews higher education leadership literature which includes leaders' roles in the new management model. This model takes into account the cross-cultural context that higher education operates in, especially in Ghana, as the context of the study. Moreover, cross-cultural contexts of the study in institutions of higher learning are extensively reviewed.

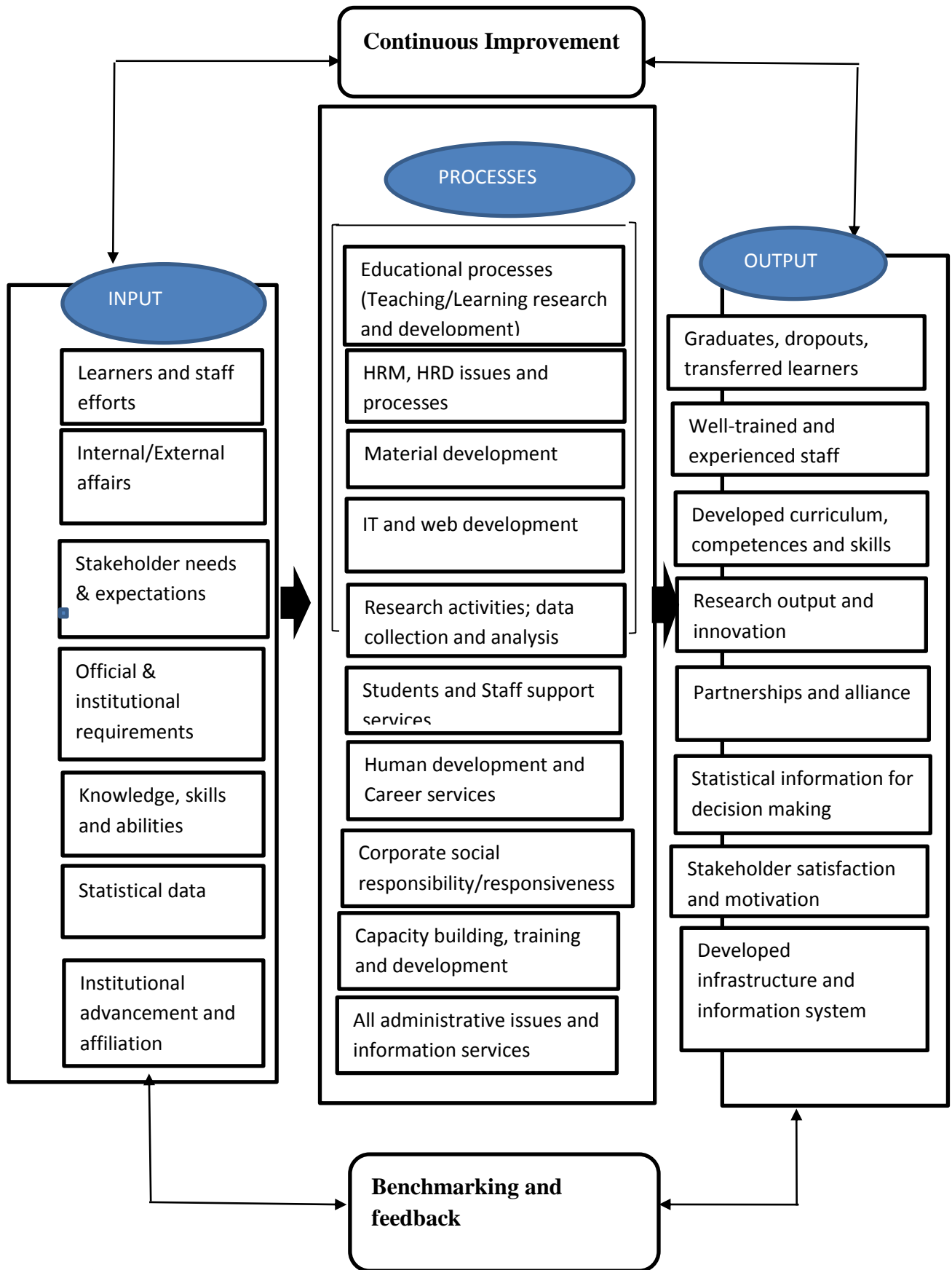## TQM in Higher Education and Curriculum Leadership

A review of literature regarding theory and application of Total Quality Management in education institutions (Aspinwall, 2015) suggests that TQM is an alternative tool for the continuous improvement in every institution of higher learning in their quest to increase quality in service delivery. For instance, Motwani and Kumar (1997, p. 66) in a study conducted in the US concluded that TQM has been adapted by many educational institutions, ostensibly to "improve communication, higher employee morale, increased productivity, improved process efficiency, and reduction in defects and costs".

Moreover, in a study which explored, top business schools in Pakistan (Public and Private combined), Ahmed and Ali (2012) through exploratory factor analysis revealed that the concept is still new in Pakistan's business schools. They further concluded that areas where some attention is required included training of employees (Human Resource Development), alignment of vision with academic processes and establishment of linkages between industry and curriculum. Asif, Awan, Khan and Ahmed (2013) in a study which explored critical factors of TQM in Pakistani Higher Education Institutes concluded that "leadership, vision, measurement and analysis, process control and evaluation, program design and resource allocation and stakeholder's focus" are critical success factors of TQM in higher education.

Conceptual Framework

It has already been established that TQM is not a "one shot" activity. Rather it involves a series of continuous improvement process that adopts the system's perspective with the underpinning assumption that an organization such as a university has so many interrelationships and interdependencies that rely on one another for survival. Therefore, the process diagram comprises *input, process*, and *output* that interact to ensure the organization (university) achieves its objectives. Figure 1 espouses the interactions among these inputs, process and output variables, which in turn ensure the successful accomplishment of objectives, set out by Universities within the context of Total Quality Management.

Figure 1: Conceptual Framework for Public Universities in the Ghanaian Context

Continuous Improvement

PROCESSES

INPUT

- Learners and staff efforts
- Internal/External affairs
- Stakeholder needs & expectations
- Official & institutional requirements
- Knowledge, skills and abilities
- Statistical data
- Institutional advancement and affiliation

- Educational processes (Teaching/Learning research and development)
- HRM, HRD issues and processes
- Material development
- IT and web development
- Research activities; data collection and analysis
- Students and Staff support services
- Human development and Career services
- Corporate social responsibility/responsiveness
- Capacity building, training and development
- All administrative issues and information services

OUTPUT

- Graduates, dropouts, transferred learners
- Well-trained and experienced staff
- Developed curriculum, competences and skills
- Research output and innovation
- Partnerships and alliance
- Statistical information for decision making
- Stakeholder satisfaction and motivation
- Developed infrastructure and information system

Benchmarking and feedback

Researchers' construct (2017)

From Figure 1, the framework consists of a typical process diagram stemming from the systems perspective that assumes that an organization such as a University has so many interrelationships and interdependencies that rely on one another for survival. The process diagram comprises *input, process*, and *output* that interact to ensure the organization (University) achieves its objectives. In short, the input comprises people, official requirements, internal and external issues, and information. The process consists of education, administrative and organizational issues, research, student and staff support services, HR, corporate social responsibility, and developmental issues. The output covers people, competences, research output, networking, information, and developed infrastructure.

Implications of the TQM Framework for Educational Policy and Practice
From the framework displayed, it can be deduced that:

TQM requires patience and critical mindedness: This stems from the fact that TQM journey is complex. Institutions of higher learning should mobilize resources to sustain the preparations and implementation of TQM for at least 5 years. The management of these institutions of higher learning should ensure that the TQM Unit and its operations are embedded in the strategic plan of these institutions to ensure its sustenance in the future.

TQM is Problem-solving oriented: In times of crises, there is a need for a leader who can "weather the storm" to be put in the helm of affairs. In a similar vein, institutions of higher learning should focus on adopting TQM model to solve both short-term and long term challenges that confront their quest in achieving their institutional goals.

TQM is a Self-improvement activity: Personal development should be one of the thematic areas to ensure organizational success. This leads to a win-win situation where both the individual involved and the organization benefit in the long-run.

Electronic platform is a driver of TQM: Good management requires data analysis. Data on paper usually tend not to contribute much towards institutional memory. Developing an electronic platform for handling all major activities and data is crucial for TQM success. The lack of communication tends to create a wrong impression of the ineffectiveness of TQM. People should be able to report on any flaws or make suggestions regarding how to make TQM effective through an electronic platform.

TQM is a project management approach: The quality team should comprise people from different departments who have in-depth knowledge about the institution. The academic ranking and/or position is theoretically not important, but a higher ranking of members of staff who are knowledgeable about the processes is important. It is crucial to have people with good IT skills, understanding of database structures, student related processes, quality tools, and project management skills as explained above. Suggested skills, positions, and/or areas to include in the team are software development, HR, post-graduate education, general educational process, Vice Chancellor's office, and student and support services. The quality circles should also consist of people who are open to quality improvement and can find the time to collaborate on quality improvement efforts. Anybody who cannot make any contribution due to lack of time should be taken off the team and substituted with a new person. The quality circles can consist of people with different ranks and positions because what is needed is to improve the processes at every point in time.

TQM requires an institution-wide approach: We generally tend to focus on

educational issues, but may neglect some administrative positions such as receptionists, security staff, phone operators, student affairs officers, etc. where most of the 'customer' interaction takes place. Challenges of customers such as parents encounter are complex and multifaceted and therefore TQM is comprehensively designed to cater for all aspects of the organization.

TQM is a process approach: Process approach is emphasized in ISO 9000. Its activities are driven by big or small processes connected to each other. Universities face complications due to lack of efficient process definitions, but not because of people. Process identification/definition may sound easy, but without proper planning and the right piece of software, it is almost impossible to tackle the issue. A typical process approach can be used to start identifying the processes and connecting them to each other within the overall picture.

TQM requires commitment of organizational resources: The longer the planning phase, the more successful the work will likely to be. Quick starts without proper planning would end abruptly. TQM work should not start without management's commitment first, assuming that they know for sure what they are getting committed to. It should be the first exploratory team's job to understand if TQM can be effectively implemented in the Universities.

TQM is a control mechanism: University managers need to get down to the workspace where the real action occurs. For this reason, observations will play an important role in the process improvement. Surveys can also be used to understand 'customer' satisfaction. However, without interviews and observations, surveys alone can yield false results.

Conclusion

Undoubtedly, TQM plays a significant role in the overall improvement of an organisation. TQM has the potential to deal with quality issues in assessing the efficiency of universities. Its application in higher institutions of learning has the possibility of promoting effective practices in its operations, thereby improving quality educational practices. Even though TQM emanated from the corporate sector, its significance is felt in the higher education sector too. This, in part, suggests TQM is all-embracing, robust management tool needed for promoting quality delivery of education in institutions of higher learning.

Universities have to maintain quality standards to ensure they remain competitive as service providers. This suggests that for them to remain relevant, its numerous stakeholders such as students and teachers should be of utmost concern to them. However, TQM can come to their rescue in their quest to ensure a holistic quality management in their service delivery. TQM can only serve as a useful tool if professionals are well trained to ensure its effective implementation which in turn will prepare citizens with great values who are prepared to make the needed sacrifices to promote quality education delivery for the betterment of both the individuals and society at large. Therefore, it is imperative that the concept of TQM should be adopted and its principles and requirements mastered in order to ensure its effective implementation by all educational institutions, especially, institutions of higher learning.

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