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TOTAL QUALITY MANAGEMENT IN HIGHER EDUCATION INSTITUTIONS

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Abstract

The paper addresses the issue of quality education. The definition of the concept is analyzed from a variety of aspects. The concept of Total Quality Management with a number of its education-related dimensions as evidenced from the literature is also considered in the paper. The authors emphasize that the measurement of the quality, inherently subjective, can be evaluated using different parameters following the researchers in the field, who regard three dimensions of quality in higher education - Product, Software and Service. Pre-requisites for the application of Total Quality Management (TQM) in higher education institutions and the challenges faced are also considered here. The authors draw a conclusion of the benefits of TQM for quality enhancement in education and meeting the needs and expectations of all the stakeholders.

Introduction

The issue of quality education has been a matter of concern for everybody, is widely discussed and debated, and remains to be immediately addressed because of growing aspirations of various stakeholders - students, parents, business, industry, academia and society. This concern for higher education has become a global phenomenon and new buzzwords like accountability, transparency, customer orientation, responsiveness and quality have been associated with higher education. Now one of the most urgent questions is the definition of quality of higher education and how it can be achieved. Therefore, by identifying what the quality means we shall have to undergo plenty of explanations, which somehow reflect industry, business and society perspective. Campell, and Rozsnay have defined concept of quality of education in many ways:
Quality as excellence: Quest to be the best.

Quality as fitness: Fits with customer (students and other stakeholders) needs and requirements.

Quality as zero error: This concept may be applied in industry but in education, all students can never be at the same level.

Quality as improvement: This emphasizes continuous improvement aiming to achieve and maintain quality which is taken as best at any point of time.

Quality as transportation: Education, which leads to a complete change in the skills, knowledge, attitude and character of student to make him capable of living and working in the knowledge society.

Quality as threshold: Setting certain benchmarks of quality and achieving these is called quality.

However, when we talk of quality we must understand the difference between education and industry because educational institutions are not factories, students are not products but learning and education of a student is product, and this product is an outcome of a collaborative effort not a simple result of paying some money to some educational institution and reaping the harvest.

As such, it can be concluded that quality education provides every student with an opportunity to improve knowledge, wisdom, knowhow and character and a quality educational institution create a situation, which allows its students to be high achievers through quality of its educational services. This quality assurance can be given only if one observes TQM.

Total quality management

This concept of Total Quality Management is taught in all educational institutions throughout the world. Usually it is taught in the context of business and industry. A lot of work has been done for Total Quality Management and now this has become a matured concept. Today TQM means the assurance that product meets all the specifications before it reaches to consumer.

Sallis (1996) has given chronology of quality management, as mentioned hereunder:

Table 1 The chronology of quality management

Before 1900	Quality as an integral element of craftsmanship
1900-1920	Quality Control by foreman
1920-1940	Inspection based quality control
1940-1960	Statistical Process Control
1960-1980	Total Quality Control
1980-1990	Total Quality Management
1990-Present	TQM - The culture of continuous improvement and organization wide quality management.

As precise universal definition of TQM is not available, hence, to understand TQM we have to understand the definitions given by some distinguished scholars. Suganthe & Samuel in “Total Quality Management “(2011) gave a set of definitions by different scholars, which is as under:

Table 2 Definitions of TQM

Total Quality is defined as conformance to requirements	Crosby (P.2, 1967)
A total approach to put quality in every aspect of management	Creech (P. 6, 1995)
TQM is the integration of all functions and processes within an organization in order to achieve continuous improvement of the quality of goods and services.	Omachonu and Ross (P. 3, 2004)
Quality in fitness for use	Juran (P. 2-2, 1974)

As it is evident from Table 2, there are various dimensions of TQM, if we go through the literature on TQM, we shall find some most cited and common dimensions of TQM. These concepts are widely used by researchers in higher education related researches as well as studies on industries.

Table 3 Concepts of TQM and their evidence from literature

CONCEPTS	EVIDENCE IN LITERATURE
Leadership (L)	Zhang (2000); Lim et.al. (2004); Rosa et.al. (2007); Bayraktar et.al. (2008) and Asif et.al., (2013)
Vision (V)	Zhang (2000); Aspinwall (1997); Venkatraman, (2007); Bayraktar et.al. (2008) and Asif et.al. (2013)
Measurement and Evaluation (M)	Zhang (2000); Bayraktar et.al. (2008) and Asif et.al. (2013)
Process Control and Improvement (PI)	Zhang (2000); Lim et.al. (2004); Rosa et.al. (2007); Bayrkatar et.al. (2008) and Asif et.al. (2013)

Program Design (PD)	Zhang (2000); Bayraktar et.al. (2008) and Asif et.al. (2013)
Quality System Improvement (QI)	Zhang (2000); Bayraktar et.al. (2008) and Pandi et.al. (2009)
Employee Involvement (E)	Zhang (2000); Venkatraman, (2007) and Bayraktar et.al. (2008)
Recognition and Reward (R)	Zhang (2000); Bayraktar et.al. (2008) and Ooi, (2009)
Education and Training (ET)	Zhang (2000); Bayraktar et.al. (2008) and Asif et.al. (2013)
Student Focus (S)	Zhang (2000); Bayraktar et.al. (2008) and Asif et.al. (2013)
Other Stakeholders' Focus (OS)	Bayraktar et.al. (2008) and Asif et.al. (2013).

Source: Total Quality Management in Public Sector Higher Education Institutions, Syed Sohab Zubain (2013)

Advantages of quality management

The Certified Manager of Quality/Organizational Excellence Handbook has mentioned the following advantages of quality management:

- Improved Competitive Position
- Adaptability to changes
- Increased productivity level
- Improved cost control and management
- Higher customer orientation and satisfaction
- Increased job security
- Higher stakeholder value
- Better and Innovative processes

These advantages of Quality Management are encouraging managers to implement this concept in all spheres of life not only in business and in industry only.

TQM implementation in higher education institutions

Aspinwall (1997) said” there appears to be no apparent reason for rejecting the applicability of TQM as general philosophy.”

This healthy practice needs to be implemented in higher education too, but for the success of TQM, one should understand the various dimensions and parameters of quality in higher education. Owlia and Appinwell mentioned three dimensions of quality in higher education - Product, Software and Service. The Product dimensions could be understood with the Table mentioned hereunder.

Table 4 Product dimensions of quality in higher education

DIMENSIONS	DEFINITION IN HIGHER EDUCATION
Performance	Primary knowledge/skills required for graduates.
Features	Secondary/Supplementary knowledge and skills
Reliability	The extent to which knowledge/skills learned are correct, accurate and up to date
Conformance	The degree to which, an institutional program /course meets established standards, plans and promises.
Durability	The depth of learning
Serviceability	How well an institution handles customer's complaints?

Source: Owlia and Aspinwall (1996)

In addition to Product dimensions, understanding of Software quality dimensions is also necessary. A table below exhibits the Software Quality Dimensions:

Table 5 Software quality dimensions in higher education

DIMENSIONS	DEFINITION IN HIGHER EDUCATION
Correctness	The extent to which the program/course complies with the specified requirements.
Reliability	The degree to which knowledge/skills learned is correct, accurate and up to date.
Efficiency	The extent to which knowledge/skills learned are applicable to the future career of graduates.
Integrity	The extent to which personal information is secure from unauthorized access.
Usability	The ease of learning and communicativeness in the classroom.
Maintainability	How well an institution handles customer's complaints?
Testability	How fair examinations represent a subject of study.
Expandability	Flexibility
Portability	The degree to which knowledge/skills learned is applicable to other fields.

Source: Owlia and Aspinwall (1996)

Service Quality Dimensions of education are also mentioned hereunder:

Table 6 Service quality dimensions in higher education

DIMENSIONS	DEFINITION IN HIGHER EDUCATION
Responsiveness	Willing and readiness of staff to help students
Reliability	The degree to which education is correct, accurate and up to date.
Understanding Customers	Understanding students and their needs
Access	The extent to which staff are available for guidance and advice
Competence	The theoretical and practical knowledge of staff and other presentation skills.
Courtesy	Emotive and positive attitude towards students.
Communication	How well the students and lecturers communicate in the class.
Credibility	The degree of trustworthiness of institution.
Security	Confidentiality of information
Tangible	Sufficiency and availability of equipments and facilities
Performance	Primary knowledge/skills required for graduates
Completeness	Supplementary knowledge/skills, use of computer.

Source: Owlia and Aspinwall (1996)

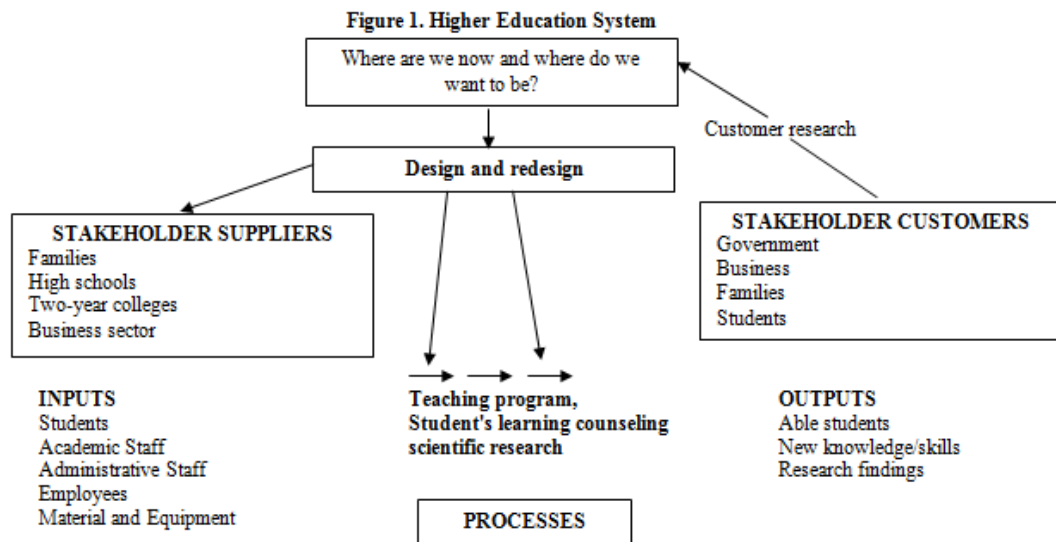
But before the implementation of TQM in Higher Education we shall have to understand the various fields and levels of higher education and their impact on them and simultaneously we shall have to understand the university system or say high education system to evolve a TQM model for implementation in higher education.

Application of TQM in higher education:

The TQM concept applied to higher education embraces all the fields and levels of education and has an effect on the following:

- Physical infrastructure (buildings, sport complexes, open field etc.)
- Academic infrastructure (laboratories, library, documentation, communication, information infrastructure, etc.)
- Curriculum
- Examinations and evaluation system
- Supplying academic and administrative personal and their improvement systems
- Research and publication
- Institutional development plans (strategic planning)
- University - industry - society relations

As mentioned by *Evans and Lindsay*, *ibid*, p. 51-52, Deming claimed his production system could be applied to service organizations as well as to manufacturing organizations. Figure 1 with reference to TQM applies Deming's production model to higher education. This system depends on the answers to these main questions. Who are the stakeholders (customers and suppliers)? What are the inputs and outputs? What are the key processes?



**Source: "Yuksekogretimde Toplam Kalite Yonetimi Yaklasmlari veABDOrnekleri",
<http://www.tubitak.gov.tr/btpd/btspd/platform/akred/ek3.html>**

Industry has a product or service which can be quantified but in educational institutions product can't be quantified in short term.

Due to peculiarity of higher education, a specific model is required for TQM implementation in higher education institutions.

Quality improvement in higher education institution (HEI):

HEI provides service to students, parents, futures employers and to the society at large and quality of any service could be measured with the satisfaction level of customers. Measurement of the quality can be subjective and may be evaluated on various parameters like effectiveness of educational program, updating of classrooms, quality of faculty, modernization of teaching methods, suitable infrastructure, etc. The results of education are intangible but the quality of learning can be measured and the problems in education can be solved through TQM.

With regard to the quality of education, *Willborn and Chung* mentioned that "The University assures students, their parents and the community that it will create situations which allow its graduates to be high achievers through the quality of its educational services. This quality arises from the hard work of teachers, administrators and students. A university must try to convince students of the value of successful learning wherever possible."

All stakeholders in higher education institutions, especially academic administrators always see the scope of improvement in quality of education. Quality of education is dependent upon the collective dedication of stakeholders, as dedicated teachers cannot do anything without the receptive and dedicated students, hence, for quality improvement to be successful everybody has to contribute.

Romana Key Michael and Others (1997) emphasized "The concept of TQM can indeed be applied to higher education but it must be modified to recognize some of the unique aspect of education." Quality is what the customer says it is, in the case of education because the product in higher education is not a visible and tangible product in the same sense as a manufactured product.

Sunil Belbar (1995) said, "Lecturers can continuously improve their teaching techniques to more effectively educate train and influence their students. TQM can guide such efforts, Lecturers must be open to ideas and should constantly evaluate the processes they use and innovatively apply TQM elements to their own teaching. TQM, basically "...stresses improvement in work processes."

Pre-requisites for application of TQM in higher education institutions

Following are the pre-requisites for application of TQM in Higher Education Institutions:

1. Institute must have well defined visions and goals.
2. All stakeholders of the institute must be aware of goals and vision of the Institute.
3. Those involved in the quality work must know the concept of quality.
4. All the segments of the institution must have a commitment for quality.
5. People should actively participate in quality work.
6. Task of different groups must be clearly communicated and these must be assigned some well-defined goals and objectives.
7. A quality model should be developed which can be replicated elsewhere.
8. Every quality process must be well defined and closely monitored.
9. A SOP must be developed for quality.
10. All the segments of the university must have the same quality procedure.
11. Quality work must not result in more work but rather in smart work.
12. All the stakeholders should make efforts to match the objectives of the institutions.
13. Practical quality tools must be used to facilitate more structured data collection and analysis.
14. Some external agency must be hired for quality audit and some accreditation agency must be invited for overall assessment of institute, as it will be a good motivation and will develop stakeholders confidence in the institution.

Challenges in application of TQM in higher education institutions

Many academicians doubt the success of TQM in higher education institutions due to the following reasons:

1. Many institutions do not agree to change their ways.
2. Involvement of students as customers in quality control process is taken as a threat to autonomy of the teacher.
3. Faculty is not ready to accept the basic concept of the quality - "the customer (here student) is always right."
4. Many academicians believe that students are not mature enough to understand their needs as *S.Helms and C.Key* mentioned that "Are students more than customers in the classroom?" We can say that it is believed that many times what students ask they really don't need that and if institutions work to do what students ask then institutions may ignore the need of the society.
5. Education institutions are not ready to accept any quality benchmark.

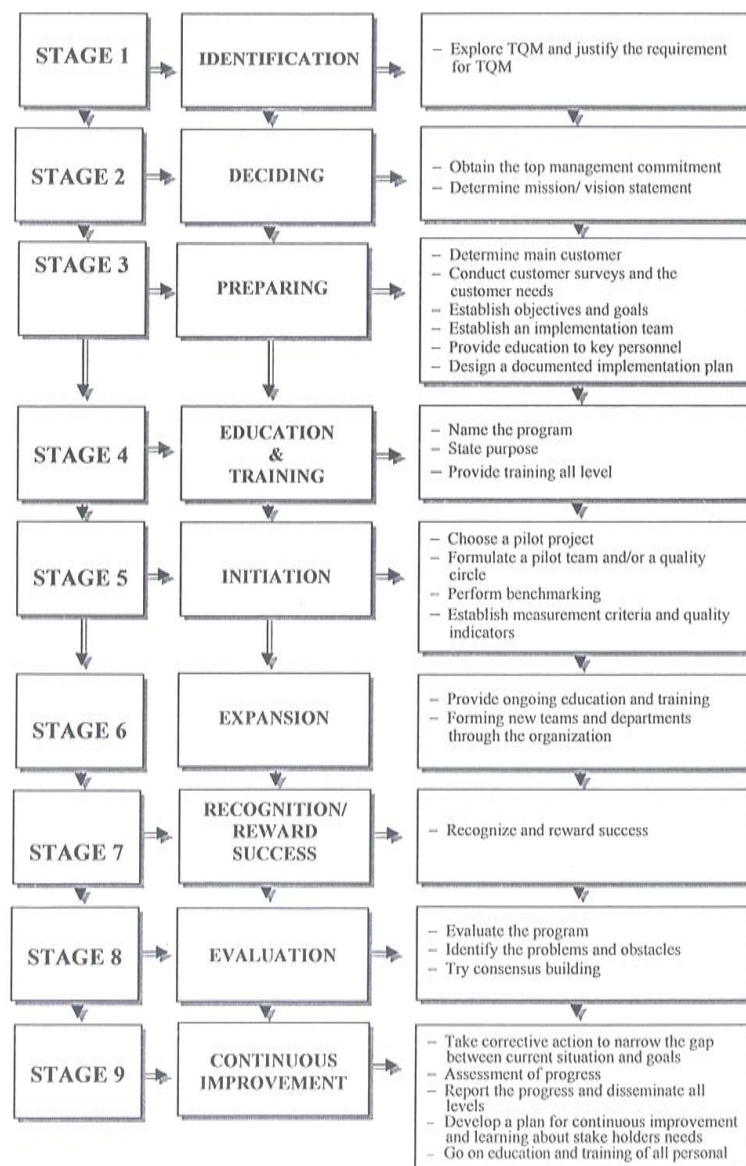
How to apply TQM in HEI

As mentioned above, higher education institutions are not ready to accept any intervention in their system and are satisfied with their own working, hence, are reluctant to implement TQM.

Still many academic administrators are fancied with the idea of TQM but they do not have an understanding of how it can be applied in higher education institutions.

An education institution, which is desirous of implementing TQM, must understand the TQM model for educational institutions as shown here below:

Figure 2 TQM model for education



After understanding the standard concept of TQM every higher educational institution should develop its own model according to its own requirements and should work on the following lines:

1. Top management should have a complete idea of TQM.
2. They must have a commitment to provide quality education and other related services to continuously satisfy the needs of its stakeholders and achieve excellence through TQM.
3. Institution must identify its stakeholders and define their needs and must evolve a specific quality policy for each.
4. There must be an effective Management Information System (MIS) at all levels to understand the quality concept of the institutions.
5. Institution should design a documented Total Quality Management implementation plan and all key personnel of the institution should be acquainted with it.
6. Every member of the institution must be educated, trained and empowered to implement TQM at each level and there must be left no scope for any ambiguity or confusion.
7. Initially TQM measures must be implemented as pilot project and for this a pilot be formulated representative of all levels of management.
8. TQM quality measures must be realistic and attainable and must be fixed only after consultation with customers and the person responsible for delivery of service.
9. An educational institution must develop its benchmarks against the standards in other peer institutions.
10. The institution from which the benchmarks have been taken has to be researched and identified as being the best in its class and having similar characteristics to one's own institution.
11. After the success of a pilot project, TQM can be implemented in the whole institutions and a team of experts may be formed to monitor the implementation.
12. After implementation a thorough evaluation of TQM must be carried out and suitable solution must be found if any gap is detected and good, performing employees should be rewarded to keep their morale high and to encourage creativity at the institution.

Quality is not a destination rather it is a never-ending journey, hence, TQM must be adopted as a continuous process and a forward plan must be developed and all the people engaged in TQM should be properly educated and trained.

Conclusion

Through TQM methods, higher education institutions can raise morale and productivity of their employees. Therefore, it is advisable to all higher education institutions to adopt TQM. If academia adopted the philosophy of TQM in general then they can satisfy all the stakeholders and can further improve higher education institutions. It is observed that through TQM institutions performance improved, their productivity was enhanced and the cost of delivery was reduced. Therefore, it can be recommended to all higher education institutions to adopt TQM and develop their own model keeping their own needs in view.

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