Development of a Model to Enhce Effective Total Quality Management in Higher Education Institutions

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Abstract: Improving the quality of education is a much-talked-about concern in a number of developing nations. There is a general awareness among the leaders that in order to meet the challenges of globalization the educational system must be upgraded. In addition to reforming the curriculum, another demand for the qualitative teachers have increased in developing nations. However this study has proposed a multi-variable model which includes about seven variables (i.e. faculty credentials, classroom facilities, management and administration, campus facilities, research facilities, technological facilities and the cost of education etc) which all are positively response to the quality education except only the cost variable. This study is an attempt to examine the multi-variable factors that affecting the total quality management to insure satisfaction level of the consumers (students) regarding the higher education quality.

Key words: Higher education · Educational quality · Education cost · Education system · TQM in Education

INTRODUCTION

What is great for one, may not be good enough for another; only because of the quality this difference happen. Deming [1] defines quality as "a predictable degree of uniformity and dependability at low cost and suited to the market". A modern definition of quality broadly refers to customer focus. Total Quality Management (TQM) is a management approach that aims for long-term success by focusing on customer satisfaction. Hence, TQM is based on the participation of all members of an organization in improving processes, products, services and the culture in which they work. Total Quality Management refers the organization's culture where the aim to increase the stakeholder's satisfaction through an integrated system of tools, techniques and training; with the continuous improvement of organizational processes that resulting in high quality products and services.

Generally focusing on teacher performance seems to be an essential first step toward achieving higher student achievement. Then, there is considerable evidence that establishes a definite link between the quality of education and management effectiveness. Quality education is dependent upon adapting teaching methods and materials according to the needs of students. Quality management is essential in any scheme aimed at improving overall student achievement. Several countries in the region such as Indonesia and Thailand have already begun to decentralize certain functions except some poor nations like Bangladesh.

Many leading universities education system, both state-governed and private, have incorporated the findings of recent research into the design of instruments by which teachers and management may carry out self-evaluations. These same instruments can be the basis by which external teams evaluate the performance of teachers and management. This paper deals with the performance evaluation method and quality development techniques for the higher education institutions and also a model given in this paper, will assist to identify the factors may affecting TQM.

Whenever quality in education is mentioned, it may be vital to establish what is understood by the term "quality," because different professionals such as educators, researchers and politicians perceive this term differently. The term "quality" is derived from the Latin word "*qualitas,*" which means the degree of excellence of a thing [2].

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Bolton and Drew [3], Parasuraman *et al.* [4] described service quality as the ability of an organization to meet or exceed customer expectations. Gordon and Partington [5] said "The success with which an institution provides educational environments which enable students effectively to achieve worthwhile learning goals including appropriate academic standards." Then "quality of education" has been described by Rowley [6] as "Quality and in particular quality assessment and assurance procedures, have received a great deal of attention in higher education all over the world in recent years."

Educational reforms has been a needs for quality education. Suchinda [7], states that educational reform is, among other things, seen as a crucial ingredient for building a nation of wealth, stability and dignity and the capability to compete with others in the age of globalization. He also notes some indicators, which need to be put in play, as follows: 1) strong leadership with clear vision and understanding of the mission of education, 2) control of the politics influencing education, 3) a duty of the government to solve any educational problems, 4) reduction of the gap between academics and the general public in the process of educational reform, 5) the main issues of educational reform-change in mentality, behavior and work culture in education, 6) parents' thoughts about traditional education needed to be reformed and 7) students' points of view need to be considered.

Many authors argue that in examining the determinants of quality, it is necessary to differentiate between quality associated with the process of service delivery and quality associated with the outcome of service, judged by the consumer after the service is performed. By the way, in the era of globalization, education is system being influenced all over the world including the developing countries. For this reason, Vietnam governments objective is to achieve basic changes in the quality and scope of the system so that it could respond to the socio-economic development and the people's demands within next 15 years [8].

Education Quality pertains to the relevance of what is taught and learned to how well it fits the present and future needs of the learners, given their particular circumstances and prospects. It also refers to significant changes in the educational systems, objectives, curricula and educational technologies. By the same token, Luu [9], conveys five challenges which creates obstacle to achieve quality in case of higher education: 1) the comparability of quality and standards, 2) the multi-nationalization of higher education, 3) the problem of

brain drain, 4) the problem of intellectual property and 4) maintaining a university as a learning organization. Thus, the quality issue in universities is of special interest in the contexts of all developing countries in the world.

Most of the researchers focus on quality education with different criticism but they might be unable to find the factors that clearly affecting to the higher education quality. However this paper is tried to identify the factors as a issue of TQM, affecting to the quality education.

This study may bring benefits to all those interested in total quality management issues. This research may be a useful reference to the university administrators, office staff, teachers and students elsewhere, when they need to look for additional information regarding total quality management issues. After reviewing this research, the chance may be available to evolve a new venue for cooperation in the long run for the administrative or managerial fields and other related issues within educational circle. From taking an interest in learning new models, implementing them and creating others, the researchers may see an impetus to engage in a comparative study among levels of education beyond one border in the regional and global environment.

MATERIALS AND METHODS

This study attempts to develop an empirical research model based on qualitative and quantitative variables. Once the existing body of literature has been thoroughly investigated, a conceptual model is proposed. The model is developed based on the analysis of previous theoretical studies. A holistic view of educational supply chain in Fig.1 have presented to clarify the study. The conceptual model is trying to find the factor affecting to the total quality management for the higher education institutions (universities). With this empirical model, the study have also used experience and observational survey in different private and public universities in Bangladesh.

RESULTS AND DISCUSSION

Importance of Total Quality Management in Higher Education Institutions: Education, being part of the service industry, is characterized differently from the manufacturing industry as its product(i.e. knowledge) is intangible. Effective education relies much on its personnel's knowledge, experience and ethics [10]. There are three functions have to follow same as other service provider organization.
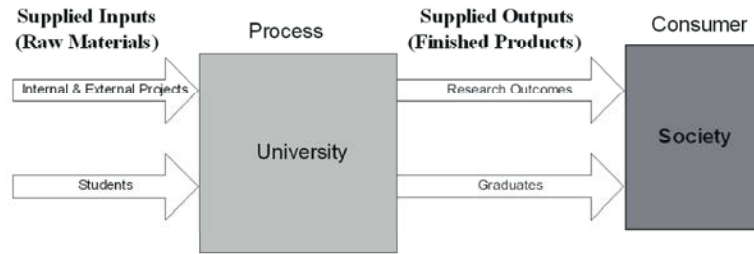
Fig. 1: Holistic view of educational supply chain

The researchers develop a conceptual framework of educational supply chain for the universities. In this supply chain, raw materials are students as well as internal and external projects. Final outcomes are graduates and research outcomes. Customers can closely monitor the value added by service providers. When customers supply major inputs, they know exactly what condition those inputs are. Then, when they subsequently receive the output from the service provider, they can easily assess the amount of value added by the service provider. The researchers identify the society as the end customer or the consumer in this educational supply chain. Since universities are the part of the society, the final outcomes of this supply chain, including graduates with desirable quality and quality research outcomes are delivered to the society. When total quality management works perfectly, the university can generate quality graduates and research outcomes which is delivered to the society. Thus, society as well as the nation are the ultimate gainers only because of quality management.

Desired Service Quality to the Customer of Higher Education Institutions: In education, students are customers who come to contact with service providers of an educational institution for the purpose of acquiring goods or services. Hill [11] mentioned that as a primary customer of higher education services, the student should focus on expectations. Although the primary participant in the service of education is the student, there is also a strong underlying assumption that the 'customer' of education includes industry, parents, Government and even society as a whole.

The extent to which students perceive the level of service performance meets their expectations reflects the quality of service [12]. It was found that perceived poor service quality will ultimately affect funding and viability in the university sector by reducing the popularity of the institution and thus the number and standard of applicants, but that the effect is indirect and relatively slow. Nonetheless, dissatisfaction expressed by the direct

users of the service, students, will have an effect. Student dissatisfaction, if on a sufficient scale, will result in reduced applications in subsequent years as the reputation falls, even though existing students are likely to be constrained to remain.

Comparison Process	Result
1. Perceived Performance > Expectation:	High satisfaction (Delight)
2. Perceived Performance = Expectation:	Merely Satisfied
3. Perceived Performance < Expectation:	Dissatisfaction

Anderson [13] states that there are many reasons for focusing the administrative service quality in a university. The first exposure of the student to the university is through the admission and registrar's services so providing high quality service to students contributes to the positive assessment of the university. Compared with the academic units, the administrative departments of the university, such as the registration office, financial office or library, are more likely to be a replication of the bureaucratic units of governmental or public institutions [14]. While registration in the Western universities has rapidly adopted the banking touch-tone telephone systems, universities in developing countries attempt to struggle with bureaucracies and inefficient infrastructure; hence registration remains tied to a traditional manual process [15].

The education service providers are facing with an increasing competition as more new programs offered, new delivery means of the existing program (i.e. Friday and evening program) are introduced, new institutions are established (both public and private) and new foreign entities enter the market. With this, service quality perceived by students becomes one of the key success factors.

The Role of Teachers and Management in Case of TQM: Teachers have to plan, manage and monitor an orderly learning activity system. Effective classroom management includes guidelines for student behavior, record keeping systems and ensuring an adequate supply of suitable

learning materials. Nonetheless, the duty of every teacher to make every effort to ensure an adequate supply of learning materials. In effective classrooms learning occurs within a supportive atmosphere, where students work in both small and large groups, in individualized learning activities, as well as cooperative learning environments. Students are given ample time and opportunity to master skills, learning through participation, by being involved in setting their own learning goals. Main role of teacher is to make the students active towards their study.

In effective education institute, top management establish direction (mission, goals and purposes), in collaboration with stakeholders(parents, students and teachers). In addition, they have to take responsibility to ensure the quality education and its growth plan. They must develop and implement a coordinated plan to improve student achievement and ensure that there is a process in place to identify students who are experiencing difficulties. There are discipline wise polices for assessment, evaluation and reporting of student progress. They have to attend promptly to issues of concern and establish an atmosphere of trust, openness and collaboration. Main role of the management is to provide the technological and logistical support to create the proper learning environment.

Model Evaluation: To support this study, here an Imaginary multivariable model considering total quality management in higher education institute is given bellow: let us assume a model such as:

$$QE = f(FC, CF, RF, AM, TF, CaF, EC)$$

Let convert it into liner model then it will be as:

$$QE = (FC + CF + RF + AM + TF + CaF \pm EC)$$

Where, Quality Education = QE

Faculty Credentials = FC

Classroom Facilities = CF

Research Facilities = RF

Administration and Management = AM

Technological Facilities = TF

Campus Facilities = CaF

Education Cost = EC

In this model we see that all of the independent variables(FC, CF, CaF, RF, AM, TF) have positive effect on QE except EC.

In case of cost, sometimes it matter and sometimes it does not matter, such as in Bangladesh, public universities (i.e. University of Dhaka, BUET) provide qualitative education with lower cost. On the other hand, private universities of Bangladesh is very much dependent on cost variable such as AIUB, NSU, IUB, EWU providing world class quality for education than other lower cost taker private university like BUBT or Green University.

From the research results, the significant relationship among different factors in quality education to produce quality graduates and quality research outcomes for the betterment of the society. This study also investigated the factors affecting quality education in the university. In total, seven independent determinants related to both human resources and organizational factors have been identified that are likely to affect the quality of higher education offered to the students.

Faculty credentials are important in assuring high-quality education. By and large, the faculty's main function is to equip students with the pragmatic knowledge that is most necessary for and suitable in the current and emerging new age of science and technology. In fulfilling this function, educational entities must inevitably hire and retain talented teachers. The wellbeing of any nation as a whole depends on the ability to develop a happy, emotionally healthy and productive next generation. The excellence of higher education is a function of the kind of people it is able to enlist and retain on its faculties. Thus, all these scholarly qualities of the faculties need to be ensured in order to secure quality of education in the universities.

Classroom facilities are important because they are part of the whole atmosphere of learning, which includes elements such as neat and clean space that is adequate in terms of class size and temperature environment. In developing countries, most of the private universities are established via rental and classroom space is alarmingly inadequate. This factor is, thus, important in evaluating the satisfaction level of the students.

In a similar fashion, research facilities are also underdeveloped. Most of the universities do not have research department and publication facilities are also limited. Only about twenty journals are published among more than 50 private universities in Bangladesh. Nonetheless the variables like campus facilities, technological facilities have an important impact on the overall quality of education in these higher learning centers of Bangladesh.

Performance Evaluation Criteria for the Teacher and Management: There are some effective self-assessment tools to evaluate the performance to teachers and management. It may also be used by external evaluators who have responsibility for evaluating performance.

Teacher has to check activeness of some strategies which will meet course objectives including a) making proper study plan (day plan, lesson plan), b) monitors learning and provides materials, c) attempts to provide what are the expectations of students, d) assesses student progress on a regular basis, e) evaluates student growth and achievement in line with objectives of the program, f) maintains appropriate written records and maintains open channels with parents regarding student progress etc.

There are some criteria for evaluating the performance of management as-a) they must ensures that there are mission statements as well as a schooling philosophy that are well articulated and easily understood, b) statements are student focused and have been developed through the involvement of stakeholders: parents, students, staffs and teachers. c) develops, communicates and implements a program for the supervision of instruction which meet students' needs and provides clear expectations, d) establishes a process for the selection of qualitative general and teaching staff with developing a code of conduct, f) Creates the confident atmosphere of trust, openness and collaboration, g) processes for effective problem solving and decision-making, h) and promotes leadership opportunities by providing logistical support to the student and teacher for better opportunities of research and development.

CONCLUSION

Ideally, the criteria and protocols governing the evaluation of management should be established by a national team composed of representatives from stakeholder groups that include parents, ministry officials, teachers. However, Parasuraman *et al*. [16] States that Management must have to believe and establish are some essential criteria to enhance the quality education service:

Reliability: the institutional arrangements (policy) to deliver the services promised, b)Assurance: the capability of the academic and support staff, c)Responsiveness: the ability to update the contents and delivery within a particular context, d)Empathy: a caring and student centered soft environment and e)Tangible: appropriate physical infrastructure. Nonetheless the quality of the output depends on the quality of input and the quality control of the process by the educational institution where training for the teacher and staff be considerer as a continuous process for quality development.

Gathering evaluative data from clients (parents, students, teachers, management), the visiting authority may appeal an evaluation. Teacher, student or management person who receive a "less than satisfactory" rating will be given one year or two semester to improve their performance; if the evaluation teams finds insufficient improvement within given period of time, such management person may be transferred to non-leadership positions, teacher may be given the option of early retirement and student will prescribe to change his or her field of study.

A university should be the distinction for career development path and achieving qualitative leadership skills. Graduates and research outcomes is the output of university but in this case, quality has not yet achieved at the desired level all over the world except a few developed nations like USA, UK, Australia, Canada etc. For developing nations, huge number of quality-less students are graduating randomly. Here, Education quality depends on ownership and cost of the university. Generally most of government-state universities try to provide quality education in traditional method while the high fees taker private universities provide technology-based and market oriented programs. However, the cost of private universities is considered as a unaffordable means for the general people of any underdeveloped counties like Bangladesh, India etc, where quality education is selling as a exchange of money. If the government and the international agencies focus in this field with financial supports, qualitative higher education can be available to the general people as basic primary education.

The quality of education is connected with the quality of faculty credentials, administration, technological facilities, campus facilities, research facilities etc. So a university is supposed to provide those needs with a total quality management process which supports as producing a high rate of work involvement and a low rate of deviancy in academic setting and focusing less on overcoming discipline problems by creating a positive environment, that is conducive to student involvement, satisfaction and learning.

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