



Quality Management Practices in Higher Education Institution: The Case of Institute of Science and Technology

¹Mohammed Maruf, ²Md. Ujjal Hossain and ³Abu Md. Kamal

¹Department of Computer Science and Engineering, Institute of Science and Technology (IST), Bangladesh

²Department of Business Administration, Institute of Science and Technology (IST), Bangladesh

³Department of Electronics and Communication Engineering, Institute of Science and Technology (IST), Bangladesh

Corresponding Author Email: mmkiut09@gmail.com
salehmaruf.ist@gmail.com, ujjalist2017@gmail.com,

Abstract:

Although a great number of studies had been done on the concept of quality management in higher education, none had been done within the context of higher education institute that are affiliated under National University in Bangladesh, the case of the Institute of Science and Technology (IST). There was need therefore for a study to be carried out focusing on the IST's academic services in conjunction with the main QM features. A survey on 36 academic and administrative employees using random sampling were carried out and prepared by SPSS software to find the central tendency and dispersion as well as reliability test was carried out. Collected data were analyzed using Likert Scale (5 point rating scale). From the findings one can conclude that, based on the objectives of the study; Firstly, Institute of Science and Technology has applied quality management to an average extent that is appropriate to its purpose. IST should implement policies and practices to implement quality management to great extent and 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 and establish a conceptual model pertinent to the culture and environment of H.E. in Bangladesh.

Keywords: Total Quality Management (TQM)/Quality Management (QM), Higher Education Institution (HEI), Institute of Science and Technology (IST).

1. Introduction

Recent times has experienced an increased concern over quality of higher education. This includes learning of emerging quality management techniques, performance indicators, program, and institutional assessment and quality audits, and there have been attempts to import models from the private sector in to higher education institutions [1]. This has led to



extensive discussion on the applicability of quality management principles, methodologies, and tools to the Higher Education sector.

Quality is the heart of education. It influences what students learn, how well they learn and what benefits they draw from their education. The quest to ensure that students achieve learning outcomes and acquire values and skills that help them play a positive role in their societies is an issue on the policy agenda of nearly every country [2].

The overall scenario of higher education management practices in Institute of Science and Technology (IST) does not follow global Quality standards. Hence, there is enough justification for increased assessment of the quality of the institution's management practices. The usual belief of educational institutions is that Quality could be determined by their internal resources, i.e., faculty with dignified degrees and experience, number of books and journals in the library or by efficient use of resources, producing uniquely educated, highly satisfied and employable graduates. Higher Education has to be about quality and excellence, not just, it is rather the quality of effective presence they share with students, teachers, systems, and stakeholders, and the relationships they shared with each other (Jordan). The TQM evaluation model is a key tool for assessing the three-dimension function of higher education institutions [3].

Improving the performance of higher education institutions is a global concern in all countries in the world. Among the most important characteristics that distinguish a community from other communities, is its ability to manage institutions and vital programs, not only effectively, but fairly innovative (Jordan). Success of Higher Education (HE) is success in its management, hence the importance of management's commitment to HE institutions to improve the overall philosophy constantly in order of arrival to TQM in universities which need the participation of all to ensure survival and continuity of universities [4].

Questions have arisen about how HE institutions should be managed, and by whom. How should they be governed? Who should be the teachers, and toward what ends should the students be taught? And how can they be financed, or how the finance for all this expanding advanced education? The questions that are largely internal to universities are assaulted by fundamental external changes in the societies in which the universities carry out their activities. This double load of pressures has contributed to the increasing demise of traditional patterns in the way universities are run [5].

Numerous studies focus on dimensions of service quality. What composes quality is varied and diversified and so quality cannot be measured by a single dimension. According to Grönroos [6] service quality could be further divided into technical quality and functional quality. While technical quality answers "what" the consumer obtains and functional quality answers "how" the consumer obtains it. Technical quality is the practical result of service and functional quality indicates the process of carrying out the service [7].

Parasuraman et al. [8] mention ten factors for evaluating service quality: tangibles, reliability, responsiveness, competence, courtesy, credibility, security, accessibility, communication, and understanding the customer. These factors were simplified and revised into five factors, i.e. tangibles, reliability, responsiveness, assurance, and empathy [9]. Bitner et al. [10] stressed the importance of the human interaction component on customer's evaluation of service quality. Lehtinen and Lehtinen [11] state that service quality has three dimensions: physical quality, corporate quality and interactive quality. Interactive quality is based on the relationship

Published by:



between the organization's personnel and the customer, as well as the interaction between customers.

Accepting the large number of stakeholders that an educational system has, this study confines itself to the administrative staff and the faculty as internal customers of the system and the students and the industry as the external customers of education. Each of these groups has diverse requirements/expectations that need to be prioritized and reconciled.

The literature review helped identify certain items/requirements of these categories of customers. These items were tested for reliability and validity, so as to arrive at statistically proven items that could be identified as customer requirements for the various categories of respondents. Qualitative validity was tested through the theoretical study as well as through expert comments. The test for quantitative validity was done through an exploratory factor analysis. This Paper follows a theoretically model of TQM implementation by Zabadi [12] particularly for higher education sector.

To check the reliability aspect of the items and its factorial groups, internal consistency analysis using SPSS was performed. The items were grouped into its respective factorial group and coefficient alpha (Cronbach's) was computed. The Cronbach's a model, inter-item correlation and co-variances was used and alpha values over 0.60 were considered [13].

1.1. Research Objectives

1. To review (TQM) literature related to higher education sector.
2. To collect data academic and administrative staffs on management practices in IST.

To propose policies based on TQM philosophy.

1.2. Organization Overview

Institute of Science and Technology or simply called IST is a non-profitable and non-political educational Institution. IST was conceptually designed and constructed in view of MIT-USA & IIT-India. However, this institution gives priority to the hopes and dreams of Bangladeshi people & perspective. Thus only the highly demanding Honor's and Master's course are being offered currently. Furthermore, it is privately tutored Institution and the certificate is provided by the National University of Bangladesh.

Initially, Institute of Technology for Women (ITW) was founded by Prof. Dr. Shahida Rafique in 1993 and inaugurated in presence of the Nobel Laureate Professor Dr. Abdus Salam & by the then honorable prime minister of Bangladesh. Later, to broaden the aspect, ITW was converted to IST and it is the first affiliated institute of National University of Bangladesh. It takes pride in affiliation with National University of Bangladesh, since 8th May, 1993. At present there are three departments Department of Computer Science and Technology, Department of Electronics and Communication Engineering and Department of Business Administration consisting around One Thousand and Five Hundred Students.

Vision

- To achieve the status of first graduate certificate giving Institution.
- To offer PhD & Post Doc. Degree.
- To provide highly qualified work force for the country.

Published by:



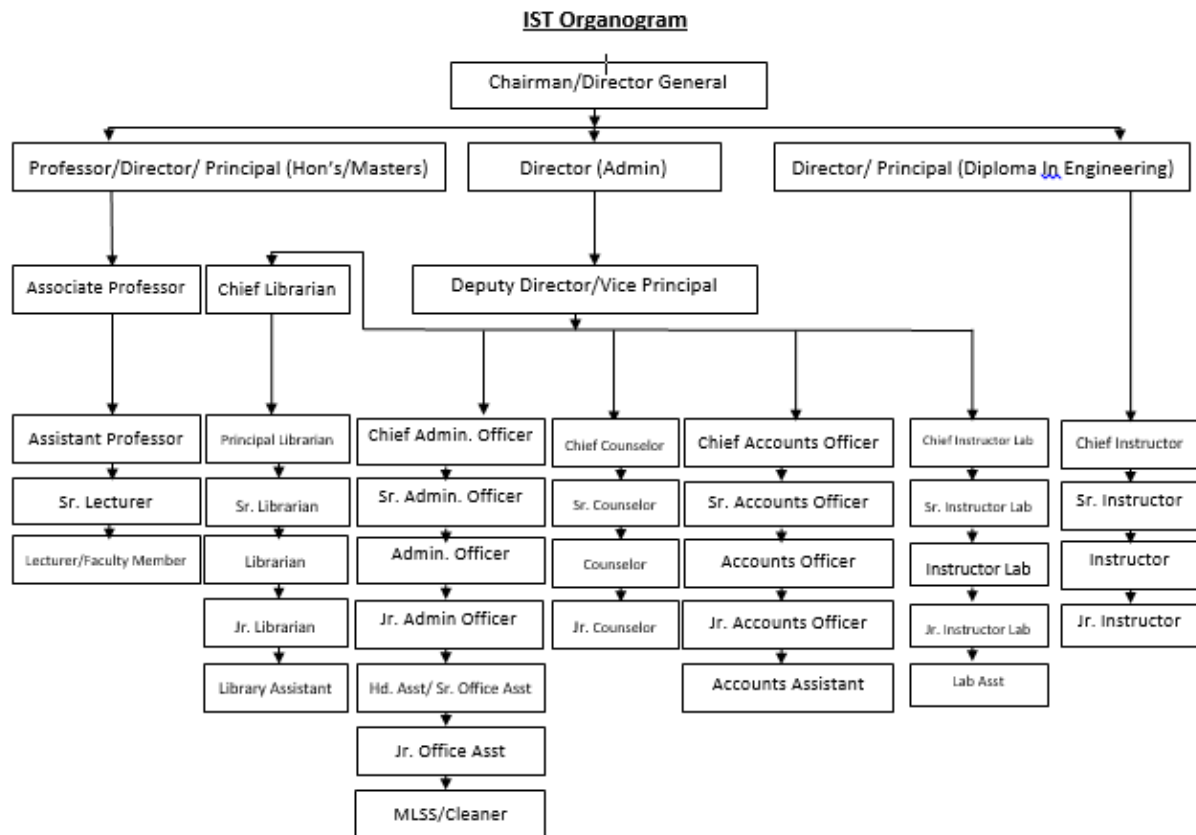


Figure 1: Organizational Organogram of

Literature Review:

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 [14]. Quality management ensures 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 [15]. 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 [14].

International Organization for Standardization (ISO) [16] defines TQM as management approach of an organization centered on quality, based on the participation of all the members and aiming at long term success through customer satisfaction and benefits to all members of the organization and to society. Similarly, TQM is a way of managing to improve the effectiveness, efficiency, cohesiveness, flexibility, and competitiveness of a business as a whole [17]. It 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 [18].



The term “quality”, has been defined with varying perspectives. Quality may be viewed as, a property of products or services, or processes producing these products or services. It may also be viewed as meeting and exceeding the expectations of the customers and thus, satisfying goods and services. The varying perspectives and definitions of quality, may be classified into two broad genres: “Nordic”, emphasizing functional and technical quality; and “American”, emphasizing service quality as a function of dimensions of quality that affect the service encounter [19]. The measurement of quality in the service sector is based on customer’s perceptions of the service and is highly multidimensional [20]. An essential facet of managing service quality is the identification of client expectations and requirements and then designing the service system to focus on these requirements, so as to fulfill these and ultimately satisfy the customers. It is essential that customers be identified and processes be established in order to determine specific needs and maintain customer-oriented service [21]. However, the very definition of the “customer” is debatable, given the large number of complementary and contradictory customers that the educational system has [22].

A customer is anyone being served. Customers may be both internal and external, depending on whether they are located within or outside the organization. So one must be able to identify one’s customers, meet their needs and satisfy them. In education, the criteria for quality, and therefore the customer requirements, involves a much greater number of interested parties – students, staff, faculty, industry, parents and the society [22]. A customer is anyone, to whom a product or service is provided [23]. The primary customer in an education system is the student; who is both an internal and an external customer [24].

Customers are classified as input customers, transformation customers and output customers [25]. While the parents and students are included as input customers, the faculty is the transformation customer and the corporations and the society are the output customers.

In HEI students as the primary customers [26], with the customer relationship being somewhat different – the student may not know what they need to learn and it does not necessarily mean that they must be given whatever they request. It is the faculty that can determine the needs of the students and balance those with the needs of other customers, i.e. the employer and other educators who may later provide advanced instruction. Customers are of two types – external (students, employers, the community at large, taxpayers, other educators from different institutions) and internal (other instructors, service department staff) [26].

Customers of higher education can also be primary and secondary groups on the basis of their locations, i.e. whether internal or external, and the frequency of interactions the institution has with them [27]. While the educator (as employee) is defined as the primary internal customer, the student (as educational partner) is the secondary internal customer. Similarly, the student is also the primary external customer and the government, industry and parents are the secondary external customers.

Education is a service – value added to learners, where the learner is the primary external customer or client; parents and employers are secondary external customers; the labor/job market, government and society are the tertiary external customers; and, teachers, administrators and support staff are regarded as external customers [28].

Quality in higher education is important because universities must be accountable to society, to employers, to students, and each other [29]. TQM has become the most significant quality philosophies for measuring the overall HEI quality [30]. One of the main contributions of TQM



application in the HEIs is this philosophy will contribute positively in increasing the stakeholders' satisfactions [31]. Recent researches on TQM have brought a widely updated plan for educational reforms and modernization of educational organizations [32].

Increasing importance is paid to evaluating service quality and diagnostic procedures in the areas of service and delivery [9,10]. Researchers have use a variety of multivariate analysis techniques to derive service quality factors based on customer requirements [6,8].

Human interaction component on customer's evaluation of service quality is highly stressed [10]. Service quality has three dimensions: physical quality, corporate quality and interactive quality [11]. Interactive quality is based on the relationship between the organization's personnel and the customer, as well as the interaction between customers. Because the performance of contact personnel and the personnel-customer interaction that takes place during service delivery as important indicators of quality [33,34].

There is still no consensus on how best to measure and manage quality within higher education institutions, in spite of many approaches and models have been adopted, because quality is dependent process and the success of any process is dependent on how others are working well, it's more effective to judge quality through a systematic assessment [12]. Correctly manage and implementing the TQM concepts and indicators is one of such measures. Accordingly, it can be concluded that TQM can be implemented in HEIs but still there is a gap of knowledge of how to achieve successful implementation of TQM in HEIs [35].

Accepting the large number of stakeholders that an educational system has, this study confines itself to the administrative staff and the faculty as internal customers of the system and the students and the industry as the external customers of education. Each of these groups has diverse requirements/expectations that need to be prioritized and reconciled. The current study explores the Quality Management practices in IST and proposes some policies to improve quality management practices.

3. Research Method

The focus of the study was on identifying the ongoing management practices in IST together with proposal for further improvement of the quality of the management. So, the study is exploratory and diagnostic in nature with an emphasis on discovery of insights and ideas.

The study was confined to Institute of Science and Technology. The sample included the internal customers of the organization – the administrative staff and the faculty. The respondents were selected by random sampling.

After a literature review, certain variables/constructs/dimensions were identified, that were adapted and incorporated in the questionnaires that were distributed to the respondents. The scale used was a five-point Likert scale ranging from unimportant to very important (valued from 1 for unimportant to 5 for very important).

This paper is a study on the quality management practices in Bangladesh (higher educational institutions), particularly at the Institute of Science and Technology (IST). This research on the methodology employed in attaining information about quality management through a survey especially on university's teachers and management of IST. The survey questionnaire is designed and distributed to targeted respondents 36. Questionnaire is designed on the basis of some statements. There are five point rating scale is used to know the quality management of



IST. These scales are as follows: 1= Very Great Extent, 2 = Great Extent, 3 = Neutral, 4 = Little Extent, 5 = Very Little Extent.

Table 1: Reliability Test

Case Processing Summary				
		N		%
Cases	Valid		36	100.0
	Excluded ^a		0	.0
	Total		36	100.0

(a)

Reliability Statistics	
Cronbach's Alpha	No. of Items
.799	36

(b)

Reference value of Cronbach's Alpha :

This above table shows that finally these data is more reliable as Cronbach's Alpha value is .725 which is nearer to 1.

Table 2: Mean and Standard-Deviation of the responses

Sl No.	Statement	Mean	Standard Deviation
1	There are available funding for research and Development	3.7778	1.20185
2	There exist an well-organized administrative framework	3.2222	.97183
3	Decisions are made by The Chairman of the Governing Body together with CND members, Academic members and CAO	1.8889	1.26930
4	Teachings staffs are motivated in research	3.3333	1.22474
5	Employee morale	3.0000	1.32288
6	Student involvement in quality improvement	3.1111	1.45297

4. Result and Discussion

This paper has taken a few important statement to know the quality management practices of Institute of Science and Technology. The respondents replied according to Likert scale.

First, There are available funding for research and Development: In this survey we found that mean score is 3.7778 which represents respondents want to say that funding for research

Published by:

and development neither very great nor very little extent. So it can be said that this institute is neutral in case of funding to research and development. As a quality institute it must be great extent as minimum requirement. Besides in this point standard deviation is 1.20185 in terms of availability of funding for research and Development which is risky for organization compare with other standard deviation.

Table 3: Descriptive frequency distribution for statement 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Great Extent	4	11.1	11.1	11.1
	Neutral	16	44.4	44.4	55.6
	Very Little Extent	16	44.4	44.4	100.0
	Total	36	100.0	100.0	

Second, There exist an well-organized administrative framework: In this survey we found that mean score is 3.2222 which represents respondents want to say that administrative framework neither very great nor very little extent. So this institute needs to introduce well organized administrative framework. As a quality institute it must be great extent as minimum requirement. Besides in this point standard deviation is .97183 in terms of well-organized administrative framework which is more favorable position for organization compare with other standard deviation as lower standard deviation.

Table 4: Descriptive frequency distribution for statement 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Great Extent	8	22.2	22.2	22.2
	Neutral	16	44.4	44.4	66.7
	Little Extent	8	22.2	22.2	88.9
	Very Little Extent	4	11.1	11.1	100.0
	Total	36	100.0	100.0	

Third, Decisions are made by The Chairman of the Governing Body together with CND members, Academic members and CAO: It is found that mean score is 1.8889 which represents respondents want to say that all the decisions are made by the Chairman of the governing body together with CND members, Academic members and CAO in great extent. So this institute, decision must be taken by chairman but decentralized way to save time, money, energy and other cyclical cost. Besides in this point standard deviation is 1.26930 in terms of decisions are made by the Chairman of the governing body together with CND

members, Academic members and CAO which is less favorable for organization compare with other standard deviation as higher standard deviation.

Table 5: Descriptive frequency distribution for statement 3

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very Great Extent	20	55.6	55.6	55.6
Great Extent	8	22.2	22.2	77.8
Little Extent	8	22.2	22.2	100.0
Total	36	100.0	100.0	

Fourth, Teachings staffs are motivated in research: It is found that mean score is 3.3333 which represents respondents want to say that all teachings staffs are motivated in research neither very great nor very little extent. Besides by personal interviewing with respondent they ensure in this institute, teachings staffs are motivated in research only for promotion purpose but not actually develop for society as well as country. Besides in this point standard deviation is 1.22474 in terms of Teachings staffs are motivated in research which is less favorable for organization compare with other standard deviation as higher standard deviation.

Table 6: Descriptive frequency distribution for statement 4

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very Great Extent	4	11.1	11.1	11.1
Great Extent	4	11.1	11.1	22.2
Neutral	8	22.2	22.2	44.4
Little Extent	16	44.4	44.4	88.9
Very Little Extent	4	11.1	11.1	100.0
Total	36	100.0	100.0	

Fifthly, Employee morale: It is found that mean score is 3.0000 which represents respondents want to say that Employee morale neither very great nor very little extent and it is absolute point. Besides by personal interviewing with respondent they ensure in this institute employee morale need to some great extent because of quality management practices it is badly needed. Besides in this point standard deviation 1.32288 in terms of employee morale which is less favorable for organization compare with other standard deviation as higher standard deviation.

Table 7: Descriptive frequency distribution for statement 5

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Great Extent	20	55.6	55.6	55.6
Neutral	4	11.1	11.1	66.7
Little Extent	4	11.1	11.1	77.8
Very Little Extent	8	22.2	22.2	100.0
Total	36	100.0	100.0	

Sixthly Student involvement in quality improvement: It is found that mean score is 3.1111 which represents respondents want to say that student involvement in quality improvement neither very great nor very little extent. Besides by personal interviewing with respondent they ensure in this institute student involvement in quality improvement need to some great extent because of quality management practices it is badly needed student involvement. Besides in this point standard deviation is 1.45297 in terms of employee morale which is less favorable for organization compare with other standard deviation as higher standard deviation.

Table 8: Descriptive frequency distribution for statement 6

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very Great Extent	4	11.1	11.1	11.1
Great Extent	12	33.3	33.3	44.4
Neutral	4	11.1	11.1	55.6
Little Extent	8	22.2	22.2	77.8
Very Little Extent	8	22.2	22.2	100.0
Total	36	100.0	100.0	

5. Conclusion

A quality management policy is important for an organization which is committed to quality service delivery. Institute of Science and Technology is not an exception. A well-defined quality objectives which can be used to ensure more reliable and error free outputs from its services and activities is necessary. In fact, most of the educational reforms that have been carried out throughout the world emphasized more on the quality aspect. Considering the relevance of TQM in education, it is important to identify the varied customers of the educational system and identify their requirements and satisfy them. The importance assigned to such requirements or their constructs may vary across customer groups and also amongst the institutions themselves.



To test the extent to which IST has applied quality management in its academic and administrative services 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. Also some of the respondents did not understand the quality management practices in place in IST thus making it difficult to give relevant information. The data were collected through questionnaires and as such may have been subject to limitations of such surveys. The sample size for the category of administrative staff was small due to the smaller percentage of officials in the administration. The unwillingness of the individuals to present honest and clear opinions and their hesitation in filling up questionnaires made data collection difficult and this accounts for the smaller size of sample for this category of respondents. Further sophistication could have been built into the variables considered.

The present study has explored various management practices in IST for studying quality assurance, and determined the critical success factors in higher education based on total quality management (TQM) philosophy. Findings show that IST has implemented QM measures to limited extent and to ensure significant success based on TQM philosophy an array of policy recommendation was suggested based on the findings.

Based on the data analysis, the author proposes the following recommendations for improving quality management in IST.

1. IST management should emphasize funding in research and development to ensure quality management and become a research-oriented organization. The following policies should be implemented
 - I) IST should allocate budget solely for research projects.
 - II) As an affiliated institute under National University, IST should pursue National University in allocating funding for research in IST
 - III) Involving large organization for sponsoring for research projects which will be instrumental for the development of the organizations' research and development.
2. The overall management and decision making should be made more autonomous to circumvent lingering decision making. With more independence with added accountability the management will encourage innovative and productive ideas. Hence employee morale would greatly escalate.
3. Teachers should be made concentrating more on pedagogy and research and less involve in administrative duties. This will reduce conflict with administrative human resources and create more harmonized overall managerial work structure.
4. More student involvement in decision making in areas such as teacher's assessment, policy making in extra-curricular activities will greatly enhance a sense of belonging and student, i.e. customer satisfaction.
5. The following TQM model is proposed for ensuring the TQM for IST.

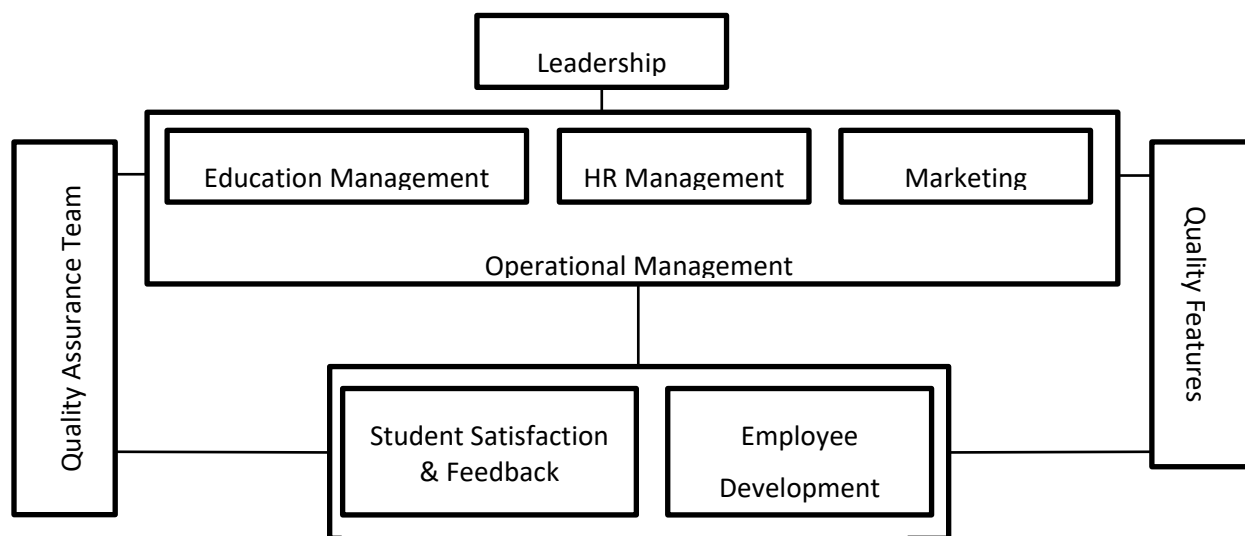


Figure 2: Proposed TQM Structure of

This model structure comprised of a quality assurance team assuring the agreed upon quality features by the leadership.

Leadership: The leadership is involved in setting the goals, monitoring performance promoting excellence, policy development, sustaining student and employee development, establishing partnerships with industries, general community and so on. Leadership effectively implemented through participative management with performance feedback from internal and external stake holders.

Education management: This management will be involved with educational management, including learner-focused education design and delivery. They will examine performance results of the teaching personnel, student performance and improvement using key measures and indicators.

Human resource management: HR management should be responsible for examining staff development and training aligned with the institution's objectives. It would also examine the efforts to build and maintain an environment in achieving performance excellence, full participation and organizational growth beside usual duty of staff recruitment, training and career development.

Marketing management: The marketing management team is for the implementation of increased institutional reach, promote engagement, facilitates personalized communication, foster a more dynamic and inclusive learning environment. Marketing is essential for higher education institutions to adapt, and effectively meet the evolving needs of modern education criteria.

Quality Assurance Team: This advisory team will be comprised of individuals from Leadership, operational management and student representatives. It will work on developing quality features aligned with institutions goals and objectives with existing quality features for Higher Education Institutions (HEI). This team will continuously monitor the performances and services based on those quality features and suggests further modification and development as well.

Pyblished by:



The current study has collected the data from one HEI only due to financial and time constraints. It is recommended that the future researchers collect data from more than one Higher Education Institute for such studies. It will be helpful in doing comparative study. Further this will help constructing a TQM model suitable for HEI in Bangladesh.

REFERENCE

- [1] Cardoso, R. A. (2010). Implementing Quality Management Systems in Higher Education Institutions. *Journal of Total Quality Management*, 5, 13 - 17.
- [2] UNESCO (1998, October). Declaracao Mundial Sobre Educacao. Retrieved October, 1998, from <http://unesdoc.unesco.org/images/0014/001419/141952e.pdf>.
- [3]Yusof, S. M., & Aspinwall, E. (2001). Case studies on the implementation of TQM in the UK automotive SMEs. *International Journal of Quality and Reliability Management*, 18(7), 722 - 744.
- [4] Al-Khatib, A. (2011). Total Quality Mangement: Applications in university management. *Journal of the association of Arab universities*, the number specialist No.3, 83-122. Yarmouk University, Jordan.
- [5]Keller, G. (2004a). A growing quaintness: Traditional governance in the markedly new realm of U.S. higher education. In W. G. Tierney (ed.), *Competing conceptions of academic governance* (pp. 158–176). Baltimore: Johns Hopkins University Press.
- [6]Groënoors, C. (1984), “A service quality model and its marketing implication”, *European Journal of Marketing*, Vol. 18, No. 4, pp. 36-44.
- [7]Groënoors, C. (1990), *Service Management and Marketing: Managing the Moments in Truth in Service Competition*, Lexington Books, Lexington, MA.
- [8]Parasuraman, A., Zeithaml, V.A. and Berry, L.A. (1985), “A conceptual model of service quality and its implications for future research”, *Journal of Marketing*, Vol. 49, pp. 41-50.
- [9]Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988), “SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality”, *Journal of Retailing*, Vol. 64 No. 1, pp. 12-40.
- [10]Bitner, M.J., Booms, B. and Tetreault, M.S. (1990), “The service encounter: diagnosing favourable and unfavourable incidents”, *Journal of Marketing*, Vol. 54, pp. 71-84.
- [11]Lehtinen, U. and Lehtinen, J. (1982), “Service quality: a study of quality dimensions”, unpublished working paper, Service Management Institute, Helsinki.
- [12]Zabadi, A.M.A. (2013),” Implementing Total Quality Management (TQM) on the Higher Education Institutions – A Conceptual Model”, *Journal of Finance & Economics* Volume 1, Issue 1 (2013), 42-60.
- [13]Nunnally, J.C. (1978), *Psychometric Theory*, McGraw-Hill, New York, NY.
- [14]Magutu, Peterson & Mbeche, Isaac & Nyaoga, Richard & Nyamwange, Onserio & Onger, Richard & Ombati, Thomas. (2010). *QUALITY MANAGEMENT PRACTICES IN KENYAN*



EDUCATIONAL INSTITUTIONS: THE CASE OF THE UNIVERSITY OF NAIROBI. African Journal of Business & Management (AJBUMA). 1. 14-28.

[15]Deming, W.E. (1982), *Quality, Productivity and Competitive Position*, MIT Center for Advanced Engineering Study, Cambridge, MA.

[16]International Organization for Standardization (1994), ISO 8402:1994 (E/F/R), *Quality, Management and Quality Assurance – Vocabulary*. International Organization for Standardization. Geneva, Switzerland.

[17]K.S Ho and K. Wearn, “A TQM Model for Higher Education and Training”, *Training for Quality*. vol. 3, no. 2, pp. 25-33, 1995.

[18]Barnard, J. (1999), "Using total quality principles in business courses: the effect on student evaluations", *Business Communication Quarterly*, Vol. 62 No.June, pp.61-73.

[19]Brady, M.K. and Cronin, J. Jr (2001), “Some new thoughts on conceptualizing perceived service quality: a hierarchical approach”, *Journal of Marketing*, Vol. 65, pp. 34-49.

[20]Lovelock, C.H. (1983), “Classifying services to gain strategic marketing insights”, *Journal of Marketing*, Vol. 47, pp. 9-20.

[21]Lembcke, B.A. (1994), “Organizational performance measures: the vital signs of TQM investments”, *New Directions for Higher Education*, No. 86, Summer.

[22] Sangeeta Sahney D.K. Banwet S. Karunes, (2004), "Customer requirement constructs: the premise for TQM in education", *International Journal of Productivity and Performance Management*, Vol. 53 Iss 6 pp. 499 – 520

[23] West-Burnham, J. (1992), *Managing Quality in Schools – A TQM Approach*, Longman Group, London.

[24] Downey, C.J., Frase, L.E. and Peters, J.J. (1994), *The Quality Education Challenge*, Corwin Press, Thousand Oaks, CA.

[25] Madu, C.N., Kuei, C.H. and Winokur, D. (1994), “TQM in the university: a quality code of honor”, *Total Quality Management*, Vol. 5 No. 5/6, pp. 375-90.

[26] Spanbauer, S.J. (1995), “Reactivating higher education with total quality management: using quality and productivity concepts, techniques and tools to improve higher education”,

Total Quality Management, Vol. 6 No. 5/6.

[27] Kanji, G.K., Tambi, A.M.A. and Wallace, W. (1999), “A comparative study of quality practice in higher education institutions in the US and Malaysia”, *Total Quality Management*, Vol. 10 No. 3, pp. 357-71.

[28] Sallis, E. (1993), *Total Quality Management in Education*, Kogan Page, London.

[29] M. Frazer, “Quality in Higher Education: An International Perspective”. In Diana Green (ed.), *What is Quality in Higher Education*. UK: SRHE and Open University Press 1994.

[30] T. Thiagarajan, *An Empirical Study of Total Quality Management in Malaysia: A Proposed Framework of Generic Application*. Unpublished PhD Thesis, University of Bradford, 1996.



[31] M.A. Munoz, Total Quality Management in Higher Education: Lessons learned from an Information Technology Office, 1999.

[32] S. Mutlu, The Facility of the Total Quality Management at the Primary Schools According To the Opinions of Teachers and Administrators. Unpublished Master's Thesis, Adana: Cukurova University, 2001.

[33] Heskett, H.J.L. (1987), "Lessons in the service sector", Harvard Business Review, Vol. 87.

[34] Surprenant, C. and Solomon, M. (1987), "Predictability and personalization in the service encounter", Journal of Marketing, Vol. 51, pp. 73-80.

[35] Nadim, Z. S., Al-Hinai, A. H., "Critical Success Factors of TQM in Higher Education Institutions Context", International Journal of Applied Sciences and Management Vol. 1, No. 2, 147-156, 2016.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>)

