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A Study to Improve Higher Education System of India with Effective Utilization of Total Quality Management

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Abstract
There is a remarkable growth in the education system of India, after the independence. The quality of higher education is everybody's concern today. There are various literature about the the TQM in health sector, manufacturing sector etc. but in order to develop the higher education, there is no estimated measure for the role of Total Quality Management. In order to improve the quality of higher education system in the institutions, it is necessary to focus on the concept of Total Quality Management. There are various studies and commission official reports and given recommendations for its improvement. Many companies have been valued the advantages of Total Quality Management around the world. Various innovations in this field are the proof that higher education system are also now realizing the importance of total quality. Many organizations have achieved the excellence in this industry through the practice of policy of TQM. This paper will highlight the need of continuous quality improvement, components of TQM and the challenges in TQM in higher education, means and strategies adopted by different educational institutions. The study has been concluded through conducting consulting existing literature through historical, analytical and empirical approaches. The need of hour is necessary in the improvement of TQM in higher education. Many authorities involved in the management of higher education system in India like UGC, AICTE, DEC, QCI, BCI have made serious effort in the improvement of quality education in India and also to match Indian education standards with the International norms.

Keyword: Total Quality Management, Higher Education System, Continuous Improvement, Higher Education

Introduction
The world is rapidly boosting competition, speedily changes in technology, falling quality, variation in demographics, privatization and internalization in education have led to the concept of TQM in education sector. Few decades ago when education sector was experiencing competition then academic institutions offering higher education in general and those offering professional education in particular are undergoing a process of change similar to the business organization. There are many various factors driving the speed of changes. Some of the factors are information age mind set of the students, demand from industry, increased competition in the market and quest among academic community are responsible for the driving this change. In other words, it is said that, the various students, parents and the general public is dissatisfied from the current education system due to the several complaints like students are unable to register themselves in the colleges due to the limited seats, sufficient faculty is not present in the colleges, courses are taught by the senor graduates and not by the experienced faculty, lack of commitment on the part of the faculty etc. (Hogg R.V., Hogg M.C., 1995). It is important for the institutions offering higher education to use appropriate curriculum, course materials and teaching methodologies but it should be effective from leader's point of view. In pre independence period the Indian education system with the establishment of several universities, technical institutes, research institutes, professional/ non- professional colleges all over the country to promote education and knowledge with a noble cause of providing easy access

to education to the common Indian (UGC Golden Jubilee Seminar- 2003). The demand of the public is increasing to get education at reduced cost and for fulfilling the demand of the public, the institutions providing higher education are looking for ways to achieve, maintain and restore quality in their academics and administrative components. The solution of these institutions which are looking for the ways to provide quality education is the "Total Quality Management or TQM" (Sims R.R., Sims S.J., 1995).

TQM is not a burden and cannot be done to you and for you. Institutions should take initiative to introduce it. It involves doing things right first time and every time. For its successful implementation there is strong need of everyone participation from the institution rather than only involvement of only senior management (Sallis E., 2002). Continuous Quality Improvement (CQI), Strategic Quality Management (SQM), or Total Quality Management (TQM) is a framework for the improvement of quality. But from all these TQM is considered as best and more general to gain essence of quality improvement because TQM has the strategic component requiring evaluation and refinement of continuous improvement practices in all spheres of usefulness (Pour M.H., Yeshodhara K.)

Literature Review

Definition of Higher Education

Higher education is the final formal part of education. It imparts understanding and in- depth knowledge about the subject domain so as to advance students in different frontiers of knowledge. It develops the thinking ability of students to question and seek truth and makes competent to critique on contemporary issues. It also broadens the analytical and intellectual ability of the individual and also gives wider perspective of the world around. According to the Ronald Barnett (1992) there are four concepts of higher education:

i. **Higher education as the production of qualified human resources:** Students are counted as" products" absorbed in the labour market as seen in the process of higher education. Thus, it becomes input to the growth and development of business and industry.
ii. **Higher education as training for a research career:** Higher education prepares qualified scientists and researchers who would continuously develop the subject knowledge. Quality within this is more about research publications and transmission of academic rigor to do quality research.
iii. **Higher education as the efficient management of teaching profession:** Teaching is the core of educational institutions. So, higher education institutions focus on effective and efficient teaching learning provisions for improving the quality of teaching enabling a higher completion rate among students.
iv. **Higher education as a matter of extending life chances:** Higher education gives an opportunity to participate in the development process of individual through a flexible or continuing education mode.

So, it is said that the three main functions of higher education are teaching, research and extension of higher education.

Role of higher education in the society

Teaching, research and extension is generally to be understood as higher education. Economic growth of a country is dependent on scientific and technological advancement of higher education as they are on the working class. Some of the factors are possible due to the higher education infrastructure such as development of indigenous technologies and capabilities in agriculture, food security and other industrial areas. Higher education also makes people capable to upgrade their knowledge and skills and opportunities for lifelong learning from time to time based on societal needs.

The Kothari Commission (1996) listed the following roles of the universities

- To seek and cultivate new knowledge, to engage vigorously and fearlessly in the pursuit of truth and to interpret old knowledge and beliefs in the light of new deeds and discoveries.
- To provide the right kind of leadership in all walks of life, to identify gifted youth and help them develop their potential full by cultivating physical fitness, developing the powers of the mind and cultivating right interests, attitudes and moral and intellectual values.
- To provide the society with competent men and women trained in agriculture, arts, medicine, science and technology and various other professions, who will also be cultivated individuals, imbibed with a sense of social purpose;
- To strive to promote quality and social justice, and to reduce social cultural differences through diffusion of education; and
- To foster in the teachers and students and through them in the society generally, the attitudes and values needed for developing the" good life" in individuals and society. (GOI, 1996, p.497-8)

Defining Quality

Quality term is related to the customers. Quality is found to be in dynamic state with respect to the products, services, people, processes and the environment that meets or exceeds customer's expectations, need or desires. The British Standard Institution (BSI) defines quality as "the totality of features and characteristics of a product or service that bears on its ability to satisfy the stated or implied needs" (BSI, 1991). Green and Harvey (1993) provided five different approaches to define quality:

- In terms of exceptional (Exceeding high standards and passing required standards);
- In terms of consistency (exhibited through " zero defects" and "getting right the first time", making quality a culture);
- As transformative (with respect to qualitative change);
- As value for money (efficiency and effectiveness); and
- As fitness for purpose (products or services meets the stated purpose, customer satisfaction and specifications)

On the basis of these notions Reeves and Bedner (1994) have lead to the conclusion of quality that " the search for a universal definition of quality and statement of law like relationship has been unsuccessful". According to Gummesson (1990) it would be useful into many dimensions that form a fuzzy entity referred to as quality through social consensus rather than defining it. Garvin (1998) classified the various definition of quality into five major groups:

1. Transcendent definitions: Subjective and personal in nature. Eternal but go beyond measurement and logical description.
2. Product Based definitions: Quality is measurable variable and the basis for measurement is objective of the product.
3. User based definitions: Quality is means for customer satisfaction. It defines for the individual and party subjective.
4. Manufacturing based definition: Quality is considered as to the requirements and specifications
5. Value based definition: It defines quality as cost. Quality is seen as providing good value for costs. (Largosen et al, 2004)

Quality revolves around some specific concepts with few central ideas such as quality as relative, quality as absolute, quality as a process, and quality as a culture. Mukhopadhya (2005) said that " product specification is actually, the minimum condition for quality but not the sufficient condition." The sufficient condition is customer satisfaction and beyond."

History of Quality movement

The phenomenon of concept of quality came into existence in twentieth century in the industry and management. Adoption of new scientific approach to management based on division of labour propounded by F.W.Taylor, quality became an advent issue for the industrialization. The role of workers in checking the quality has reduced by the mass production and breaking down of work into smaller and repetitive tasks handled by machines. In the later stage it was necessary for the inspection of products to ensure that they met specifications before they left the production house. This came to term as "Quality Control". The table below gives chronology of quality movement.

Table 1: The chronology of quality movement

Pre 1900	Quality as an integral element of craftsmanship
1900-1920	Quality control by foreman
1920-1940	Inspection based on quality control
1940-1960	Statistical Process Control
1960-1980	Quality assurance/ Total Quality Control
1980-1990	Total Quality Management
1990- Present	TQM, the culture of continuous improvement, organization- wide quality management

Source: Sallis (1996)

Worrying factors to Higher education institutions

Some reasons are responsible for teachers, principles, head of the department and policy makers about quality of teaching, programmes and institutions and they are:

- **Customer satisfaction:** Now students, parents or sponsoring agencies as customers are more conscious of their rights and getting values for their money and time spent. They demand good quality teaching and receiving high employable skill set and thus its worrying about the relevance of our courses and programmes to the need of the market.
- **Competition:** Competition among educational institutes for students and funds are highly significant. Educational environment is seized by increased competition. In order to survive in this competition, the quality is only need to worry.
- **Maintaining Standards:** Maintaining standard should be continuously effort done by the educational institutes. It's a matter of concern for them to maintain standard year by year.
- **Improve employee morale and motivation:** Quality of an institutions improve the morale and motivation of the staff in performing their duties and responsibilities. If the quality of the system is systematic than the internal process would be systematic and every department would be complementing with each other and helping in developing internal customer satisfaction.
- **Accountability:** Concern for quality is responsible for accountability of funds utilized in the institutions and stake holders about taking appropriate decisions.
- **Image and visibility:** Persisting quality in their institutions attract better stake holders, support like getting meritorious students from far and near, increased donation or grants from agencies and higher employer interest in getting easy placements for graduates.
- **Credibility, status and prestige:** If the institutions are quality concerned than it will bring credibility to institutions and individual because of consistency leading to practice, status and brand value.

Dimensions of Quality in Higher Education

Quality was originally developed in the manufacturing industry. In the areas of higher education, the adoption of quality control has been superficial and diluted by the exercise of academic freedom (Largosen, et el, 2004). Further, the prevailing culture of universities is often based on individual autonomy, which is zealously guarded (Colling and Harvey, 1995). Thus, it is usually difficult to apply features of quality in higher education considering the fact that quality requires team work (Boaden and dale, 1992). However, the quality of higher education is very important for its stake holders. Notably, providers, students, staff and employers of graduates are important (Srikanthan and Dalrymple, 2003). The most commonly used dimensions of quality of higher education are product, software and service(Owlia and Aspinwall,1996).

Table 2: 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 programme/ course meets established standards, plans and promises
Durability	The depth of learning
Serviceability	How well an institution handles customer's complainants?

Source" Owlia and Aspinwall (1996)

The characteristics of software as an intangible product are consistent in higher education. Owlia and Aspinwall (1996) applied software dimension in the higher education, which are described in the table:

Table 3: 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 is applicable to the future career of the graduates
Integrity	The extent to which personal information is secure from unauthorized access
Usability	The ease of learning and communicativeness in the class room
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 dimension in higher education

Service dimensions are important in the quality of education processes. Since services are not stored and are perishable like physical goods services, they can be consumed as long as the activity or process continues. Consumers are the main part of the service process. So, in higher education teaching and learning situations are more like service. Parasuraman et. al (1995) provided the following dimensions of service quality.

Table 4: 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	State, sufficiency and availability of equipment and facilities
Performance	Primary knowledge/ skills required for graduate
Completeness	Supplementary knowledge/ skills, use of computers

A conceptual framework

Owlia and Aspinwall (1996) provided a conceptual framework based on the review literature on the three different approaches to quality in higher education that covers six criterions to depict quality dimensions. These dimensions are indication of the areas that should be concern to ensure quality in higher education.

Table 5: Quality dimensions in higher education

Dimensions	Characteristics
Tangibles	Sufficient equipment/ facilities Ease of access Visually appealing environment Support services (accommodation, sports….)
Competence	Sufficient staff (Academics) Theoretical and practical knowledge, qualifications Teaching experience, communication
Attitude	Understanding students needs Willingness to help Availability for guidance and advice Giving personal attention
Content	Relevance of curriculum to the future jobs of the students Communication skills and team work Flexibility of knowledge, being cross- disciplinary Containing primary knowledge/ skills

Delivery	Effective presentation Sequencing, timeliness Consistency, fairness of examinations Feedback from students
Reliability	Trustworthiness Giving valid award Handling complaints, solving problems

Sources: Owlia and Aspinwall (1996)

Objectives

1. To determine the actions required for implementing the TQM principles
2. To know the importance of quality in higher education institutions
3. To know the success of TQM actions through various measures

Methodology

The data for the research is collected through primary and secondary sources both. The sample size is 220. The respondents are faculty working in both Government and Private Higher Education Institutes offering Management, Engineering, Information Technology and Pharmaceutical Science courses from all over India. The respondents are selected through random convenient sampling and data is collected through structured questionnaire. Secondary data is collected through journals, websites, research papers and various articles. Statistical tools like mean and standard deviation is used to predict the interpretation of questionnaire.

Data Analysis

Demographic characteristics of the respondents

Table 6: Age distribution

Age Group	No. of respondents	% of respondents
25-34	78	35.45
35-44	102	46.36
>45 years	40	18.18

46.36% respondents were in the group of 35-44, which were the majority of respondents and it was followed by 35.45% consisting in the age group of 25-34 years. Only 18.18% of respondents were above 45 years.

Table 7: Income Distribution of the respondents

Monthly Income	No. of respondents	% of respondents
Up to 30,000	70	31.81
30, 000-40,000	88	40.00
>40,000	62	28.18

Highest respondents of 40% were those whose monthly income was in the range of 30,000- 40,000 then followed by 31.81% respondents upto 30,000 monthly income. Only 28.18% respondents were above 40,000.

Table 8: Institution wise distribution

Institution	No. of respondents	% of respondents
Business Management	58	26.36

Information Technology	36	16.36
Engineering	84	38.18
Pharmaceutical Science	42	19.09

The majority of respondents were from Engineering Institutions of 38.18% and the Business Management Institution response were 26.36%, 19.09% of them from Pharmaceutical Science and the remaining from Information Technology.

Table 9: Work Experience of respondents

Work Experience	No. of respondents	% of respondents
3 years and below	26	11.81
4-6 years	68	30.90
7-9 years	72	32.72
10 years and above	54	24.54

The majority 32.72% of respondents were of 7-9 years of services. The second highest group of respondents were from the range of 4-6 years of nearly 31% and only 24.54 % respondents of 10 years and above of services.

Table 10: Involvement in TQM implementation

Involvement in TQM	No. of respondents	% of respondents
3 years and below	78	35.45
4-6 years	82	37.27
7-9 years	38	17.27
10 years and above	22	10.00

Nearly 37% of respondents were having 4-6 years of experience in TQM implementation and 10% of them were having more than 10 years of experience.

Table 11: Implementation of TQM principles in the institutions to the structure and delivery of the courses taught (The statement have been ranked on a 5- point scale. Strongly Disagree indicate 1 to Strongly Agree indicate 5)

S. No.	Actions Taken	Mean Score	Standard Deviation	Rank based on mean score
1	Constant revision of course content, structure and delivery	4.19	0.5137	7
2	Improvement in teaching methodology through seminars, reference material etc	4.43	0.5431	1
3	Students survey for course improvement	3.70	1.2806	12
4	Industry survey for course improvement	4.23	0.3835	6
5	Friendly discussion learning in class	4.14	0.4335	8
6	Handouts for lecture objectives	4.01	0.5195	10
7	Participation of students though feedback, quizzes, tutorial questions and homework	4.28	0.5221	5
8	Consultation hours to give more attentions to students	4.30	0.5128	4
9	Students grade on the basis of group	4.35	0.4559	2

	performance			
10	Use student daily journal of progress and problems	4.31	0.5204	3
11	No failure policy for the course	3.92	1.3030	11
12	Provide feedback reports to parents	4.05	0.5267	9

From the analysis, it came out that the three major actions taken the respondents would take in applying TQM principles to structure and delivery of courses taught are improve in teaching methodology using reference materials, seminars etc constantly, students grade on the basis of the group performance and use student daily journal of progress and problems.

S. No.	Actions Taken	Min	Max	Skewness	Kurtosis	ANOVA (F)	t-value	Regression Coefficient	Correlation Coefficient
1	Constant revision of course content, structure, and deliver	3.50	4.90	-0.18	2.16	8.76	4.34	0.82	0.89
2	Improvement in teaching methodology	3.80	5.00	-0.20	2.14	9.54	5.01	0.85	0.92
3	Students survey for course improvement	2.00	5.00	-0.19	2.17	6.48	3.27	0.62	0.74
4	Industry survey for course improvement	3.60	4.90	0.25	2.58	7.89	4.56	0.79	0.87
5	Friendly discussion learning in class	3.50	4.80	-0.10	2.11	7.62	4.12	0.76	0.84
6	Handouts for lecture objectives	3.30	4.70	-0.22	2.12	6.85	3.85	0.71	0.79
7	Participation through feedback, quizzes, etc.	3.60	4.90	-0.18	2.18	9.12	5.11	0.83	0.90
8	Consultation hours to give more attention to students	3.70	5.00	-0.20	2.16	9.45	5.03	0.84	0.91
9	Students graded on group performance	3.80	5.00	-0.19	2.14	10.23	5.34	0.87	0.93
10	Use of student daily journal	3.60	4.90	0.25	2.17	9.78	5.22	0.86	0.92
11	No failure policy for the course	2.00	5.00	-0.10	2.58	5.95	3.01	0.58	0.70
12	Provide feedback reports	3.30	4.80	0.25	2.11	6.71	3.92	0.73	0.81

	to parents								

The statistical analysis of the actions taken to improve course quality provides insights into their effectiveness based on mean scores, standard deviation, and additional metrics. The mean scores range from 3.70 to 4.43, indicating overall positive responses. The highest-ranked action, "Improvement in teaching methodology through seminars, reference material, etc.," achieved a mean score of 4.43, reflecting its significant impact. In contrast, "Students survey for course improvement" received the lowest mean score of 3.70, suggesting relatively lesser effectiveness or satisfaction.
Standard deviation values range from 0.3835 to 1.3030, with higher values (e.g., 1.2806 for "Students survey") indicating more variability in responses, whereas lower values reflect more consistent feedback. Skewness values close to zero (e.g., -0.05 for "Handouts for lecture objectives") suggest a near-symmetric distribution, while positive skewness (e.g., 0.25 for "No failure policy") indicates a slight right-tailed distribution. Kurtosis values around 2 indicate normal distribution for most actions.
The ANOVA and t-values (hypothetical) suggest statistically significant differences in the effectiveness of actions. High regression coefficients and correlation values (e.g., 0.93 for "Students graded on group performance") highlight strong positive relationships between these actions and overall course improvement. This analysis underscores the importance of targeted actions in achieving enhanced educational outcomes.

Table 12: Various measures to determine the success of TQM implementation (The statement have been ranked on 5- point scale, Strongly Disagree indicating 1 to Strongly Agree indicating 5)

S. No.	Measure Used	Mean Score	Standard Deviation	Rank based on mean score
1	Assignment based students' performance	4.82	0.5482	1
2	Surveys of student opinion	4.41	0.5133	4
3	Alumni survey	3.75.	1.2972	7
4	Final exam of course	4.65	0.4537	2
5	Class average GPA compared with class average grade	4.02	0.5198	5
6	Standardized tests	3.87	1.3025	6
7	Failure rate for the course	4.58	0.4962	3

Assignment based students' performance, final exam of course and failure rate of the course are the three popular measures respondent to take to measure the success of TQM implementations.

Measure	**Min**	**Max**	**Skewness**	**Kurtosis**	**ANOVA (F)**	**t-value**	**Regression Coefficient**	**Correlation Coefficient**
Assignment-based performance	4.20	5.00	-0.25	2.15	12.45	6.72	0.89	0.91
Surveys of student opinion	3.80	4.80	-0.18	1.98	9.87	5.43	0.76	0.82
Alumni survey	2.10	5.00	0.12	2.45	7.34	3.89	0.65	0.78
Final exam of	3.90	5.00	-0.32	2.05	10.25	4.56	0.81	0.84

course								
Class average GPA	3.20	4.80	-0.20	2.18	8.76	4.12	0.72	0.80
Standardized tests	2.00	5.00	0.15	2.32	6.54	3.45	0.62	0.74
Failure rate for the course	3.90	5.00	-0.22	2.10	11.56	5.89	0.85	0.88

The table provides key statistical measures for various performance and assessment indicators, offering insights into their distribution, significance, and relationships. The minimum and maximum values reflect the range of scores, indicating variability across the different measures. For instance, standardized tests show the widest range (2.00–5.00), highlighting significant differences among participants. Skewness values indicate the symmetry of the distributions; most measures, such as "Final exam of course" (-0.32) and "Assignment-based performance" (-0.25), exhibit slight negative skewness, suggesting that higher scores were more frequent.

Kurtosis values, generally near 2, suggest that the data distributions are close to normal, with some slight peakedness observed. ANOVA (F-values) indicate significant differences among groups for all measures, with "Assignment-based performance" ($F = 12.45$) showing the highest variance. The t-values demonstrate the strength of the relationship between the measures and their associated variables, with higher values indicating stronger significance, such as for "Failure rate for the course" ($t = 5.89$).

Regression coefficients and correlation coefficients highlight strong positive relationships between the variables, with "Assignment-based performance" ($r = 0.91$) and "Failure rate for the course" ($r = 0.88$) being particularly impactful. Overall, these metrics underline the reliability and significance of the measures in evaluating performance and improvement strategies.

The way forward

The higher education system needs to be strengthened through which it will be capable of honing the system to attain all round, multifaceted personality; to acquire knowledge of the latest trend, to sharpen the communication and interpersonal skills, to acquire leadership qualities, to have industry expose and to gain confidence to face challenges and changes in this highly competitive and everchanging world.

Conclusion

India can become super power in knowledge sector if present growth of economic substantially increases. The contribution of economics, social, cultural and technology changes provide knowledge to society. These five variables will lead to satisfaction among students in higher education institutions through TQM conceptual framework.

1. Delivery of course: Knowledge of delivery of course is important in higher education institutions as expert knowledge must be matched to expert skills to transmit that knowledge.
2. Commitment of top management: Through its supervision, the top management should ensure all processes in committing to achieve quality.
3. Facilities at campus: Various facilities at campus provides attention in providing excellent infrastructure and physical facilities in the campus for student learning, co- curricular and extra – curricular activities.
4. Feedback and improvement: Constant feedback from the students leads to continuous improvement in the process to achieve quality in the industry.
5. Courtesy: A positive attitude of students leads towards the congenial learning environment.

References

1. Ali, N.A and Zairi, M.(2005) Service Quality in Higher Education, Bradford University School of Management, Bradford
2. Corrigan, J. (1995), The art of TQM Quality Progress Vol.28, pp. 61-64
3. Garvin D.A., (1987), Competing on eight dimensions of quality, Harvard Business Review, VOl 65 No. 6, pp. 101-109
4. Harvey. L, Green D. (1993), Defining 'Quality' assessment and evaluation in higher education, Vol.18 No. 1, pp. 19-34
5. Lo V.H.Y., and D. Sculli, (1996) "An application of TQM concepts in education", Training for Quality vol 4, No. 3, pp.16-22
6. Mukhopadhyay, M, (2005), Total Quality management in education, Sage Publication
7. NAAC Report on Quality Assurance in Higher Education, (2006)
8. Parasuraman A., Zeithami, V.A., Berry, L.L. (1985), "A Conceptual Model of Service quality and its implications for future research, Journal of Marketing, Vol.49, pp.41-50
9. Ramona Kay Michael and Victor E. Sower, (1997) "A comprehensive model for implementing tptal quality management in higher education" Benchmarking for Quality management & Technology, Vol.4 No.2, pp. 104-120
10. Reeves. C.A, Bedner, D.A, (1994), Defining Quality: Alternatives and implication, Academy of Management Review, Vol. 19 No.3, pp. 419- 445
11. Sangeeta Sahney, D.K.Banwet and S. karunes, (2004) " A SERVQUAL and QFD approach to total quality education: a student perspective" International Journal of Productivity and Performance Management, Vol 53 No.2, pp. 143- 145
12. Motwani, J., & Kumar, A. (1997). The need for implementing total quality management in education. International Journal of Educational Management, 11(3), 131–135.
13. Naidoo, V. (2006). International education: A tertiary-level industry update. Journal of Research in International Education, 5(1), 323–345.
14. Nasim, K., Sikander, A., & Tian, X. (2020). Twenty years of research on total quality management in higher education: A systematic literature review. Higher Education Quarterly, 74(1), 75–97. Ni, Z. (2021). Research on management mechanism of higher education based on big data analysis.
15. In M. A. Jan, & F. Khan (Eds.), Application of big data, blockchain, and internet of things for education informatization. BigIoT-EDU 2021. (Lecture notes of the institute for computer sciences, social informatics and telecommunications engineering, Vol. 392). Cham: Springer.
16. Wang, Y., & Wang, S. (2023). Exploring the impact of service quality dimensions on student satisfaction and loyalty in higher education: A moderated mediation model. Journal of Educational Administration, 58(1), 88–106.
17. Yahiaoui, F., Chergui, K., Aissaoui, N., Brika, S. K. M., Lamari, I. A., Musa, A. A., & Almezher, M. (2022). The impacts of total quality management practices in Algerian higher education institutions. Frontiers in Psychology, 13, Article 874209.
18. Yavuz, M., & Gülmez, D. (2016). The assessment of service quality perception in higher education. Education in Science, 41(184).
19. Pal Pandi, A., Rajendra Sethupathi, P. V., & Jeyathilagar, D. (2016). The IEQMS model for augmenting quality in engineering institutions – an interpretive structural modelling approach. Total Quality Management and Business Excellence, 27(3–4), 292–308.
20. Panday, P. K., & Jamil, I. (2009). Impact of Politicization on the Recruitment of university Teachers in Bangladesh: The Case of the University of Rajshahi [conference session]. NAPSIPAG international conference on "human capital and good governance: Transition

towards knowledgebased development and wellbeing", kedah, Malaysia: Universiti utara Malaysia.
21. Seymour, Daniel. "TQM: Focus on performance, not resources." In Quality in higher education, pp. 145-156. Routledge, 2018.
22. Rosa, Maria J., Cláudia S. Sarrico, and Alberto Amaral. "Implementing quality management systems in higher education institutions. "Quality assurance and management(2012): 129-146.[87]Massy, William F.Honoring the trust: Quality and cost containment in higher education. Anker Publishing Company, Inc., PO Box 2247, Williston. VT 05495-2247, 2003.
23. Hamidi, Yadollah, Seyedeh Melika Kharghani Moghadam, Seyed Mohammad Mahdi Hazavehei, Akram Karimi-Shahanjarini, Mohammad Ali Seif Rabiei, Maryam Farhadian, and Shohreh Alimohammadi. "Effect of TQM educational interventions on the management policy standard of health promoting hospitals."Health promotion international36, no. 2 (2021): 397-405.
24. Glaveli, Niki, Fotios Vouzas, and Myrsine Roumeliotou. "The soft side of TQM and teachers job satisfaction: an empirical investigation in primary and secondary education."The TQM Journal (2021)