Total Quality Management in Higher Education of Uttarakhand State: An Empirical Study

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Academic institutions offering higher education in general and those offering professional education in particular are undergoing a process of change similar to what business organizations have undergone a few decades ago when they were confronted by competition. The speed of change is driven by multiple factors. Demands from industry, information-age mind set of the students, increased competition and the renewed quest among academic community are some of the factors driving this change. To ensure that higher education, particularly professional education, is able to deal with market and technological changes coupled with global requirements, it is important for institutions offering higher education to use appropriate curricula, course materials and teaching methodologies that are not only up-to-date, but also effective from learner's point of view. The exponential growth of knowledge, exploding instructional technologies, enhanced access to practices of premier institutions, accessibility to knowledge, globalization of education etc require educators and faculty members to continuously evaluate themselves and improve upon their effectiveness

Higher Education

Higher education imparts in-depth knowledge and understanding so as to advance the students to new frontiers of knowledge in different walks of life (subject domains). It develops the student ability to question and seek truth and makes him/her competent to critique on contemporary issues. It broadens the intellectual powers of the individual within a narrow specialization, but also gives him/her a wider perspective of the world around. According to Ronald Barnett (1992) there are four predominant concepts of higher education.

i) **Higher education as the production of qualified human resources**: In this view, higher education is seen as a process in which students are counted as "products" absorbed in labour market. Thus, higher education becomes input to the growth and development of business and industry.

ii) **Higher education as training for a research career**: In this view, higher education is preparation for qualified scientists and researchers who would continuously develop the frontiers of knowledge. Quality within this view point is more about research publications and transmission of academic rigour to do quality research.

iii) **Higher education as the efficient management of teaching profession**: Many strongly believe that teaching is the core of educational institutions. Thus, higher education institutions focus on efficient management of teaching-learning provisions by improving the quality of teaching, enabling a higher completion rate among the students.

iv) **Higher education as a matter of extending life chances**: In this view, higher education is seen as an opportunity to participate in the development process of individual through a flexible, continuing education mode. Interestingly, all these four concepts of higher education are not exclusive; rather they are integrated and give an overall picture of higher education. If we look at the activities of colleges and universities, we will realize that teaching, research and extension form the three main functions of higher education.

Role of higher education in the Society

Higher education is generally understood to cover teaching, research and extension. Scientific and technological advancement and economic growth of a country are as dependent on higher

education as they are on the working class. Development of indigenous technologies and capabilities in agriculture, food security and other industrial areas are possible because of our world-class higher education infrastructure. Higher education also provides opportunities for lifelong learning, allowing people to upgrade their knowledge and skills from time to time based on societal needs. The Kothari Commission (1966) listed the following roles of the universities

(Higher education institutions in the modern society)

1. 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;

2. 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;

3. 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;

4. To strive to promote quality and social justice, and to reduce social cultural differences through diffusion of education; and

5. 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

Quality management explained

Quality assurance (QA) provides the basic components required of a quality system. Quality assurance incorporates standards against which internal or external assessment is undertaken, together with the processes in place to control the components of the quality system. Quality assurance systems are designed to provide assurance that a particular standard of quality has been met and maintained.

Key point

Components of quality assurance

- Focused on outputs
- Uses a standard as the benchmark of quality
- Control of systems and processes
- Focused on efficiency
- Driven from the top
- 'Assures' quality

With a quality management approach, continuous improvement systems are added to QA by incorporating a quality cycle of continuous improvement. Unlike QA, where the goal is to meet the specified standard, quality management is seen as an ongoing journey of continuous improvement.

A quality management system is designed to provide evidence that a specified standard of quality has been met and continuously improved.

Quality Management in Higher Education

As well as providing a definition of quality, it is necessary to understand the difference between three other important quality ideas. These are the distinctions made between quality control, quality assurance and total quality. *Quality control* is the oldest quality concept. It refers to the detection and elimination of components or final products that are not up to standard. It is an after-the-event process

concerned with detecting and rejecting defective items. As a method of ensuring quality it may involve a considerable amount of waste, scrap and reworking.

Total quality management in education controllers or inspectors usually carry out quality control. Inspection and testing are the most common methods of quality control, and are widely used in education to determine whether standards are being met. *Quality assurance* is different from quality control. It is a before and during the event process concerned to prevent faults occurring in the first place. Quality assurance is about designing quality into the process to attempt to ensure that the product is produced to a predetermined specification. Put simply, quality assurance is a means of producing defect- and fault-free products. The aim in the words of Philip B Crosby is 'zero defects'. Quality assurance is about consistently meeting product specification or *getting things right first time, every time.* The quality of the good or service is assured by there being a system in place, known as a quality assurance (QA) system, that lays down exactly how production should take place and to what standards. Quality standards are maintained by following the procedures laid down in the QA system. Quality assurance is the responsibility of the workforce, usually working in quality circles or teams, rather than the inspector, although inspection can have a role to play in quality assurance. *Total quality management* incorporates quality assurance, and extends and develops it. TQM is about creating a quality culture where the aim of every member of staff is to delight their customers, and where the structure of their organization allows them to do so. In TQM the customer is sovereign. It is the approach popularized by Peters and Waterman (1982), and which has been a constant theme of Tom Peters' writings ever since.

TQM is about providing the customer with what they want, when they want it and how they want it. It involves moving with changing customer expectations and fashions to design products and services that meet and exceed their expectations. Only by delighting customers will they return and tell their friends about it (this is sometimes called the sell-on definition of quality). The perceptions and expectations of customers are recognized as being short term and fickle, and so organizations have to find ways of keeping close to their customers to be able to respond to their changing tastes, needs and wants.The Indian higher education system is one of the largest such systems in the World. It is estimated that during the X Five Year Plan period (2002-07), there will be a tremendous pressure of numbers on this system and a large number of additional students will be knocking at the doors of higher education institutions in the country. There are also new challenges of management and regulation being faced by these institutions, which require serious attention, both at the institutions in the public sector and also those in the private sector now growing at a fast pace. The following five sub-sections cover important aspects of the deliberations, recommendations and action plans of UGC Golden Jubilee Seminars organized at different Universities in the country.

1. Public/Private Partnership in Higher Education, at University of Calicut, Kozhikode, Kerala;
2. Governance of higher Education, at University of Jammu, Jammu, J&K;
3. Access and Equity in Higher Education, at G.C.D .University, Bilaspur, Chattisgarh;
4. Export of Higher Education, at J.N.V. University, Jodhpur, Rajasthan and
5. Policy Planning for Higher Education under WTO and GATT regimes at North Bengal University, Darjeeling, West-Bengal.
6. Economics of Higher Education, at N. E. Hill University, Shillong, Meghalaya.

Introduction to Higher Education in Uttarakhand

Higher, or post-secondary, education has seen major expansion in Uttarakhand during the last few years, especially after the formation of the state. At the time of the formation of the state there were 64 higher education institutions viz., universities, post-graduate and under-graduate colleges, engineering, professional, education, medical, dental and ayurvedic colleges. Their number has gone up to about 248 – an increase of 287.5 percent in less than 9 Years.1 By any standard this is a remarkable growth. Predictably, a growth of this magnitude has thrown up formidable problems that need to be addressed on a priority basis. The decision to open new institutions by the government or grant of permission to private institutions seems to be quite arbitrary and shows no evidence of being based on an analysis of need or sustainability. In the case of private institutions, all of which are in the field of professional education, some unstated assumption about commercial viability appears to be the guiding factor. The situation in the case of government colleges, all of which fall in the category of general education i.e. arts and science education, is quite unclear. More often than not the decision to start new colleges and their location is guided by political considerations and is not based on an analysis of factors that should be taken into account while arriving at such a decision viz., the need and justification for the institution, area to be served, numbers of post-secondary students likely to be available, infrastructure and financial needs, feasibility of alternatives to starting a new college (e.g. scholarships and hostels in existing institutions). The result is a proliferation of colleges lacking in basic facilities like buildings, libraries, laboratories etc., low enrolment, and shortage of teachers. Of the 65 colleges for which data are available on the website of the Directorate of Higher Education for the year 2003-04, 23 had no building, 13 had less than 100 students on rolls and another 28 had between 100 and 500 while at the upper end 17 had more than 1000 students. The responsibility for overseeing, formulating policy and regulating the functioning of these institutions is shared by four different departments of the state government. The Higher Education Department is responsible for the three general universities (including the Uttarakhand Open University), and the colleges of general education.A glaring infirmity resulting from the unplanned growth of higher education institutions in the state is a clear mountain-plain divide in the location of institutions. Of the 67 government colleges of general education in the state as many as 52 (78%) were located in the mountainous districts or mountainous parts of composite (mountain-plain) districts.

Barring a few exceptions (e.g., the older colleges located in Pithoragarh, Ranikhet, Bageshwar, Gopeshwar and Uttarkashi) most of these colleges lack basic minimum facilities and staff. On the other hand the distribution of self-financing technical and professional institutions, which are all private, shows an entirely different pattern. Of the 89 such colleges for which information could be obtained only 6 were in the mountainous part of the state (2 each in Mussoorie, Bhimtal and Almora); the remaining 83 being in places like Dehradun (50), Roorkee and Haldwani (7 each), Rudrapur (6), Hardwar (4) Rishikesh (3), Kashipur (2), Kotdwar, Jaspur, Sitarganj and Gadarpur (1 each).

The quantitative expansion in higher education that we have witnessed in the state in the current century is not matched by a qualitative improvement. We cannot, in all fairness, claim that our universities compare with the better institutions of the country. Some news magazines periodically publish rankings of higher education institutions in India. Uttarakhand-based institutions do not figure in these lists of

best institutions in the country in various fields. The honourable exception is IIT Roorkee, for which the State Government can claim no credit, as it is now a central institution. Using another indicator of the academic standing of our higher education institutions, we find that the number of students from these institutions qualifying in competitive examinations like all-India and central services, UGC and CSIR fellowships is also quite small. We cannot even begin to compare ourselves with global institutions. Referring to a McKinsey report, Philip Altbach makes the startling disclosure that 75 percent of India's engineering graduates are too poorly educated to function effectively in the economy without additional on-the-job training (Altbach: 2009, p.39).

Indian universities do not figure in some of the well-known rankings of world universities published periodically3. Making international comparisons is not such a farfetched idea. In the current phase of globalization, control over knowledge and knowledge production is what gives the decisive edge in determining the power and influence of nations in the international arena. Hence we should be aiming to be among the best in the world.

For building a modern higher education system it would therefore be necessary to start with re-visioning the nature and role of universities as the corner stone of the structure. In this context it is well to reflect on what the Report of the Committee on Renovation and Rejuvenation of Higher Education, 2009 (hereafter Yashpal Committee, or YPC for short) has to say about the essential feature of a universityis: A university is a place where new ideas germinate, strike roots and grow tall and sturdy. It is a unique space, which covers the entire universe of knowledge. It is a place where creative minds converge, interact with each other and construct visions of new realities. Established notions of truth are challenged in the pursuit of knowledge. ..... The university has also been regarded as the trustee of the humanist traditions of the world and it constantly endeavours to fulfil its mission by attaining universal knowledge, which can be done only by transcending geographical, cultural and political boundaries. By doing so, it affirms the need for all cultures to know each other and keeps alive the possibilities of dialogue among them. It is also important to remember that the university aims to develop a scholarly and scientific outlook. This outlook involves the ability to set aside special interests for the sake of impartial analysis. Standing for more than specific factual knowledge, a scientific outlook calls for an analytical and questioning attitude and the continuous exercise of reason. All this requires us to go beyond specialized knowledge and competence. This universal approach to knowledge demands that boundaries of disciplines be porous and 4 scholars be constantly on guard against the tendency towards 'cubicalization' of knowledge. (YPC: 2009, pp. 9-10).Uttarakhand needs to draw inspiration and ideas from the reports of the National Knowledge Commission and the Yashpal Committee, and revamp and restructure its higher education system in order to take full advantage of the emerging opportunities in the knowledge arena. The State has certain strengths which it can build upon and emerge as a premier knowledge destination in the country: literacy rate in the state is higher than the national average; it is an important centre of secondary education and houses a number of well-known private schools, which attract students from all over the country and even abroad.
The following should constitute the basic building blocks for revamping and rejuvenating the

State's higher education system:

- Holistic education system
- Differentiated education system
- Clarity about the role of the private sector.

Universities and Institutions in Uttarakhand

DEV SANSKRITI VISHWAVIDYALAYA: DEV SANSKRITI VISHWAVIDYALAYA (DSVV) at haridwar is a ugc recognized university offering education through regular and distance modes.

DOON UNIVERSITY : DOON UNIVERSITY, located at dehradun, is an autonomous center of higher learning in uttarakhand.

G B PANT UNIVERSITY : GB PANT UNIVERSITY OF AGRILCULTURE AND TECHNOLOGY, situated at pantnagar in uttarakhand, has a special place as the first agricultural university of india.

GARHWAL UNIVERSITY : HEMWATI NANDAN BAHUGUNA GARHWAL UNIVERSITY (HNBGU), srinagar, offers a variety of undergraduate and postgraduate courses.

GURUKUL KANGRI VISHWAVIDYALAYA : GURUKUL KANGRI VISHWAVIDYALAYA, located on the banks of holy river ganges in hardwar, is an autonomous institute of higher learning.

HIMALAYAN INSTITUTE HOSPITAL TRUST UNIVERSITY : HIMALAYAN INSTITUTE HOSPITAL TRUST UNIVERSITY (HIHT), a deemed university in dehradun, imparts quality education in medical sciences covering several disciplines.

ICFAI UNIVERSITY DEHRADUN : ALL ABOUT INSTITUTE OF CHARTERED FINANCIAL ANALYSTS OF INDIA UNIVERSITY (ICFAI) DEHRADUN including courses, admission, entrance, exams, departments and contact address.

KUMAUN UNIVERSITY : KUMAUN UNIVERSITY AT NAINITAL is the leading university in the state of uttarakhand.

UNIVERSITY OF PETROLEUM & ENERGY STUDIES : UNIVERSITY OF PETROLEUM & ENERGY STUDIES (UPES) is the first energy university in india.

Studies on Total Quality Management in Higher Education

Harvey and Knight (1996) advise that quality as transformative can incorporate the other dimensions to some extent, and the first four dimensions are not necessarily end products themselves. Owlia and Aspinwall (1996) argue that different stakeholders are likely to value the importance of these different dimensions of quality according to their particular motivations and interest and interpret them differently. For example, quality as value for money is likely to be judged differently even by various internal stakeholders. Students may judge value for money according to tuition fees paid versus contact time supplied, whereas a department manager is likely to be more concerned with the effective use of resources in relation to student numbers.

(Martens and Prosser, 1998: Australia; Harvey, 2005: UK; Popli, 2005: India; Temponi, 2005: USA; Mizikaci, 2006: Romania; Tam, 2006: Hong Kong) Maureen Brookes is a senior lecturer in marketing at Oxford Brookes University. She is also

the hospitality liaison officer for the Higher Education Academy's HLST network and an executive committee member of the Council for Hospitality Management Education (CHME). Her research interests include the management of affiliated international hotel chains and quality management, and internationalisation within higher education study. This paper therefore draws on quality management research undertaken within higher education more generally and on quality models developed within generic management or business schools. The paper draws on well-recognised contributions from all corners of the globe.

(Cheng and Tam, 1997; Pounder, 1999): Previous research reveals that quality in HE can be (and is) interpreted and measured in a number of different ways As such, there is still no universal consensus on how best to manage quality within HE and a variety of quality management models have been implemented in different HEIs (Martens and Prosser, 1998). This paper provides an analytical review of the different approaches to quality management adopted or tested. It begins with a discussion of the nature of quality in HE and the implication of this for quality management. It then presents the findings of a review of papers published over a ten-year period between 1996 and 2006, predominantly in educational journals. The review reveals a reliance on industry quality management models, despite the fact that these have been applied with only partial success. It reports on efforts made to develop quality management models specifically for HE and concludes by considering the implications of current practice generally and within hospitality, leisure, sport and tourism management programmes in particular.

Avdjieva and Wilson (2002) suggest that HEIs are now also required to become learning organisations, where internal stakeholders also interpret and assess the quality of HE provision. The emphasis for internal stakeholders is not only on quality assurance, but also on quality enhancement which aims for an overall increase in the actual quality of teaching and learning, often through more innovative practices (McKay and Kember, 1999). Elton (1992) suggests that quality enhancement focuses on quality 'Es': empowerment, enthusiasm, expertise and excellence. Quality enhancement initiatives tend to be less clearly defined and are often more diverse than quality assurance initiatives (McKay and Kember, 1999). In HE, mechanisms adopted by internal stakeholders are likely to include self-evaluation practices and student feedback. As students are viewed as an integral part of the learning process (Wiklund *et al.,* 2003), this type of evaluation tends to be more formative in nature and therefore more likely to lead to continual quality improvement efforts. Furthermore, the involvement of internal stakeholders often results in a culture of quality management being embedded within programmes.

(Brookes and Becket, 2007): The paper draws on a review conducted by the authors to investigate current environmental forces and their impact on HE and quality management practices in different national contexts). The review comprised 95 articles published in 19 journals over a ten-year period between 1996 and 2006. The majority of the articles were published in educational journals, with *Quality Assurance in Education* and the *International Journal of Educational Management* being the main sources. In order to be as thorough as possible, searches were also conducted on industry journals that focused on service quality such as *Total Quality Management* and the *International Journal of Quality & Reliability Management*. Drawing from 45 articles included in the review, this paper identifies current approaches to quality management in HE. It should be noted that the authors were limited to articles published in English. As a result, this review is far from comprehensive, but appears to be the most extensive review of HE quality management practice undertaken to date.

Objectives of the study:

These are the following objectives of my study:

1. To examine w hether higher education are fulfilling the purpose for which they were established.

2. To analyze the challenges and problems faced by higher educational institution of dehradun is implementing TQM.

3. To suggest the measures to improve the quality performance of higher education institution in dehradun.

Hypothesis

H0: There is no difference in impact of TQM measure on student's satisfaction.

H0: There is no significant difference between institutions which implementing TQM technique and one which does not implementing TQM.

Research Design and Sampling Design

The study posits the impact of TQM measure on student's satisfaction and involvement in higher education and the significant difference among institution implementing TQM to that does not implement TQM.

Sample Design

The sampling method that has been followed for this study is Simple Random Sampling the number of respondents decided for the study is 90, covering the students. Faculty members and management were contracted separately.

Data Collection Instrument

The data has been collected through primary and secondary sources. Primary data has been collected through structured questionnaires. The first five questions were designed on the basis of demographic profile of respondents like ***age, gender, marital status, designation, and education.*** Further, the next 21 questions were designed on the basis of five measures considered in the study ***i.e, infrastructure, management, service quality, placement, laboratory.*** Each measure covers the different aspect that affect employees' attitude towards their job with five options i.e. ***5-Very good; 4-Good; 3-Fair; 2-Poor; 1-Very poor.***

Tools used for Analysis of Data

For analysing the results on the basis of the feedback of the respondents, various tools were applied to come to know about the results of the study. In this study, with the help of **mean and standard deviation**, the overall influence of various measures like psychological climate, job satisfaction, job involvement, turnover intention and organizational effectiveness were being assessed on the basis of the feedback of various respondents. Further, with the use of mean, **Correlation** will be calculated to find out the relationship of one variable with another and their significance in order to know how much they correlate with each other the other test will be used Cronbachs' **Alpha** to test the reliability of the scale used in the study. Analysis on the basis of Cronbachs' Alpha helped to know whether the scale adopted in the study is correct or not. Z-test and t-test and ANOVA are also used to test hypothesis

Data Analysis

Analyzing the relationship between tqm and students' satisfaction and its impact on higher education

Table 3.1: Classification of Data on the Basis of *"Age"*

Age	Frequency	Percent
20-30 years	55	61
30-40 years	29	32
40-50 years	5	6
50 and above	1	1
Total	90	100

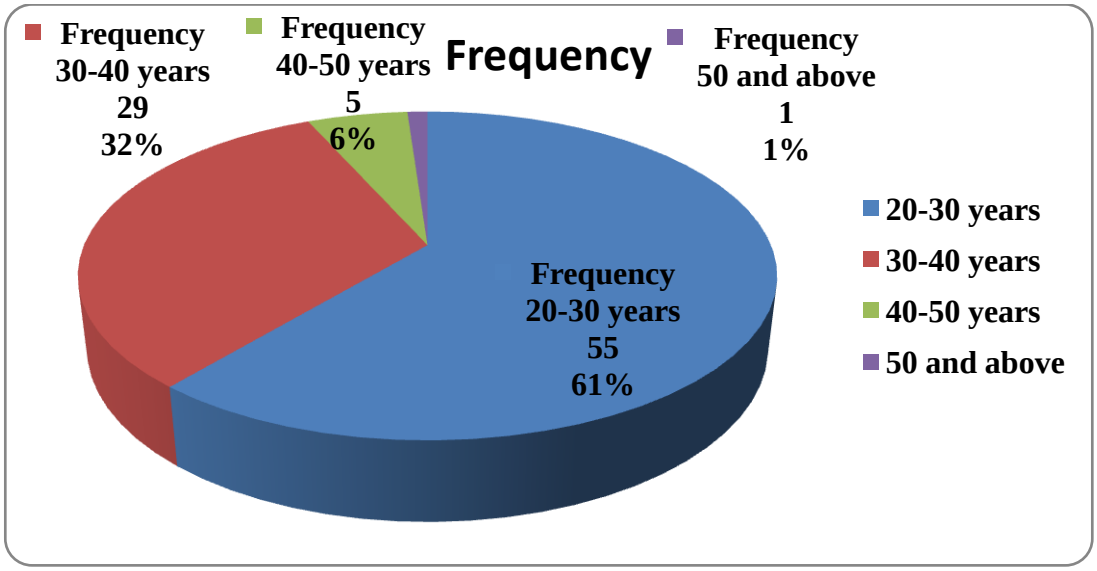

Chart 3.1

Interpretation:- From the above table and chart, it is depicted that out of **90** respondents ;

- **61%** of the respondents are between the age group of **'20-30 years'**
- **32%** of the respondents are between the age group of **'30-40 years'**
- **6%** of the respondents are between the age group of **'40-50 years'** ; and
- Only **1%** of the respondent is in the age group of **'50 and above'.**

Table 3.2 : Classification of Data on the Basis *"Gender"*

Gender	Frequency	Percent
Male	59	66
Female	31	34
Total	90	100

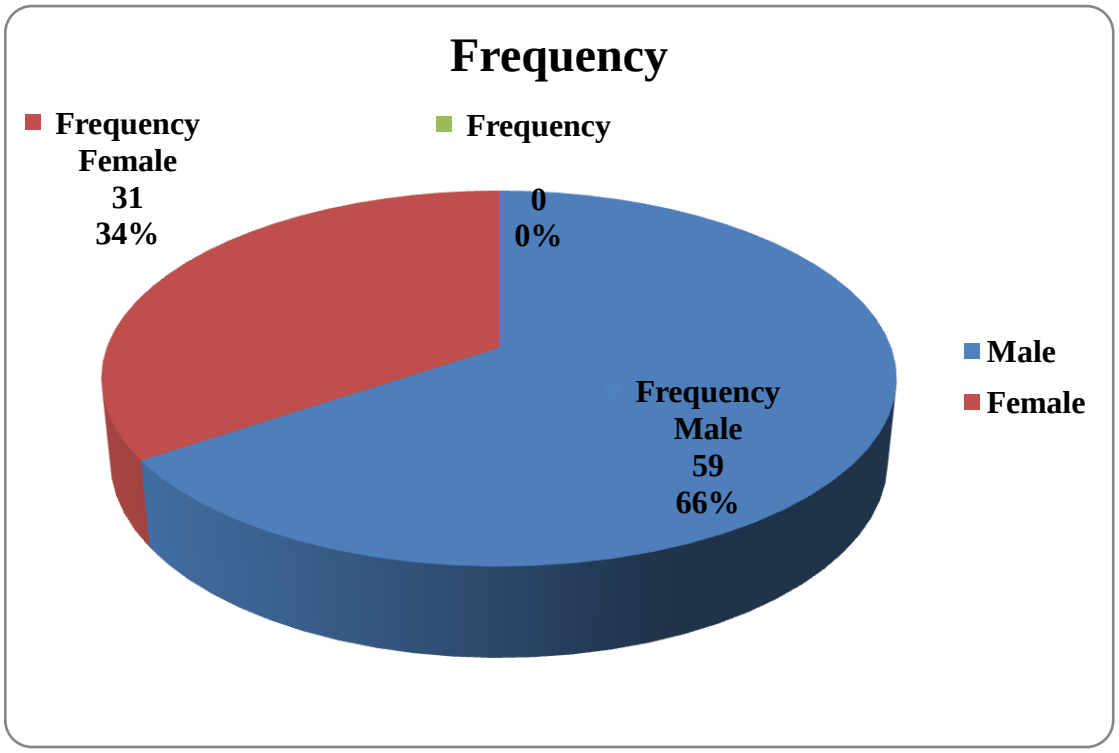

Chart 3.2

Interpretation:- From the above table and chart, it is depicted that out of **90** respondents ;

- **66%** of the respondents are **'Male'** ; and
- **34%** of the respondents are **'Female'**

Table 3.3: Classification of Data on the Basis of *"Marital Status"*

Gender	Frequency	Percent
Married	46	51
Unmarried	44	49
Total	90	100

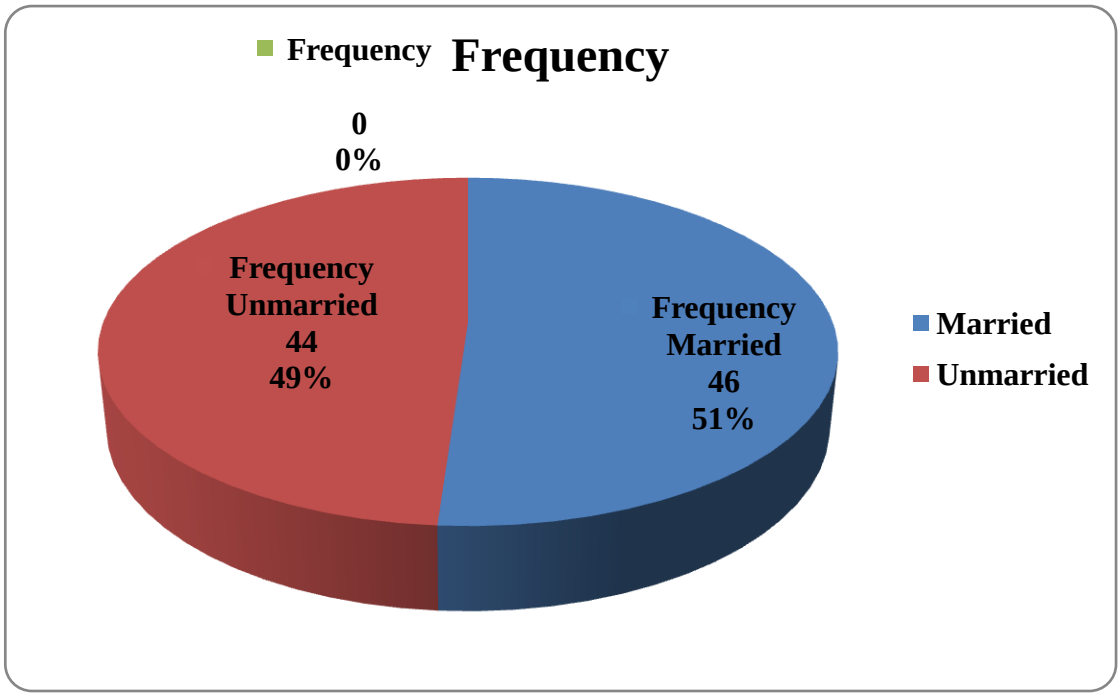

Chart 3.3

Interpretation:- From the above table and chart, it is depicted that out of **90** respondents:-

- **51%** of the respondents are **'Married** ; and
- **49%** of the respondents are **'Unmarried'**

Table 3.4: Classification of Data on the Basis of *"Education"*

Education	Frequency	Percent
M.Tech	26	29
MCA	5	6
M.Sc	11	12
M.Com	1	1
Phd.	12	13
ME	4	5
B.Tech	11	12
MBA	7	8
MA	3	3
M.Pharm	8	9
B.E	2	2
Total	90	100

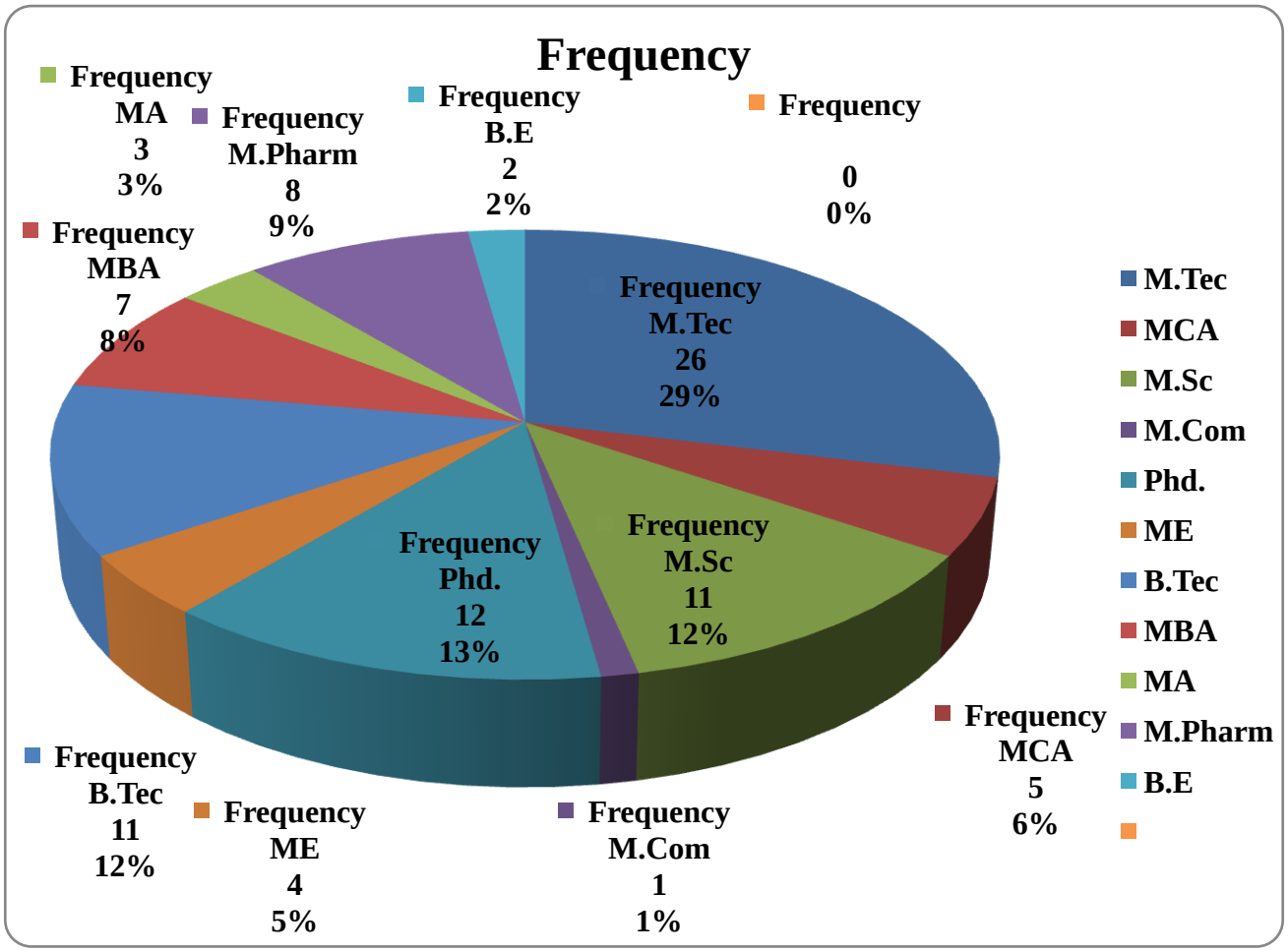

Chart 3.4

Interpretation:- From the above table and chart, it is depicted that out of **90** respondents:-

- **29%** of the respondents are having the educational qualification of **'M.Tech'**
- **6%** of the respondents are having the educational qualification of **'M.C.A'**
- **12%** of the respondents are having the educational qualification of **'M.Sc'**
- **1%** of the respondent is having the educational qualification of **'M.Com'**
- **13%** of the respondents are having the educational qualification of **'PhD'**
- **5%** of the respondents are having the educational qualification of **'M.E'**
- **12%** of the respondents are having the educational qualification of **'B.Tech'**
- **8%** of the respondents are having the educational qualification of **'M.B.A'**
- **3%** of the respondents are having the educational qualification of **'M.A'**
- **9%** of the respondents are having the educational qualification of **'M.Pharma.'** ; and
- **2%** of the respondents are having the educational qualification of **'B.E'**

CALCULATION OF MEAN AND STANDARD DEVIATION OF DIFFERENT MEASURES ON THE BASIS OF DIFFERENT FACTORS INVOLVED IN EACH MEASURE

Table 3.5 : "Calculation of Mean and Standard Deviation of Different Measures on the Basis of Different Factors involved in Each Measure"

Descriptive Statistics

Measures	N	Mean	Std. Deviation
Service quality	90	2.2844	0.75727
Infrastructure	90	2.8972	0.78423
Placements	90	2.9511	0.62481
Practical exposure	90	3.0861	0.5611
Management	90	2.5815	0.92888

Interpretation: - In this study the scale adopted is:-

5-very good; **4**-good ; **3**- fair ; **2**-poor ; **1**-very poor

According to the above table, it is depicted that the **mean** of:-

- **Service quality** is **2.2844** which mean that the respondents are satisfied with the service quality and standard deviation is **0.75727**.
- **Infrastructure** is **2.8972** which mean that the respondents are satisfied with the infrastructure and **standard deviation** is **0.78423**.
- **Placements** is **2.9511** which mean that the respondents are satisfied with placements and **standard deviation** is **0.62481**.
- **Practical exposure** is **3.0861** which mean that the respondents are not happy with the practical exposure and **standard deviation** is **0.56110**.
- **Management** is **2.5815** which means that the respondents are satisfied that the organization if effective in nature and **standard deviation** is **0.92888**

Table 3.6 : "Correlation among Different Measures "

Correlations

Measures		Service quality	Infrastructure	Placements	Practical exposure	Management
Service quality	Pearson Correlation	1	.427**	.405**	.099	.432**
	Sig. (2-tailed)		.000	.000	.353	.000
Infrastructure	Pearson Correlation	.427**	1	.614**	.370**	.475**
	Sig. (2-tailed)	.000		.000	.000	.000
Placements	Pearson Correlation	.405**	.614**	1	.458**	.477**
	Sig. (2-tailed)	.000	.000		.000	.000
Practical exposure	Pearson Correlation	.099	.370**	.458**	1	.348**
	Sig. (2-tailed)	.353	.000	.000		.001
Management	Pearson Correlation	.432**	.475**	.477**	.348**	1
	Sig. (2-tailed)	.000	.000	.000	.001	

Interpretation: - From the above table, it is being interpreted that the:-

- Correlation between **service quality** and **infrastructure** is **0.427** and is significant.
- Correlation between **service quality** and **placements** is **0.405** and is significant.
- Correlation between **service quality** and **practical exposure** is **0.099** and is not significant. The reason is because the sample size is only 90 and the research is done in a limited area.
- Correlation between **service quality** and **management** is **0.432** and is significant.
- Correlation between **infrastructure** and **placements** is **0.614** and is significant.
- Correlation between **infrastructure** and **practical exposure** is **0.370** and is not significant at 0.00. The reason is because the sample size is only 90 and the research is done in a limited area.
- Correlation between **infrastructure** and **management** is **0.475** and is significant.
- Correlation between **placements** and **practical exposure** is **0.458** and is not significant. The reason is because the sample size is only 90 and the research is done in a limited area.
- Correlation between **placements** and **management** is **0.477** and is significant.
- Correlation between **practical exposure** and **management** is **0.348** and is not significant. The reason is because the sample size is only 90 and the research is done in a limited area.

Findings of the Study

The study includes various measures like **service quality, infrastructure, placements,** involvement, **practical exposure, management**. It posits the two attitudinal variables of infrastructure and placement as mediators between service quality and practical exposure and extends it to their impact on quality management. Based on these measures, the findings of the analysis are:-

- 61% of the respondents fall in the age group of *"20-30 years",* followed by 32% in the age group of *"30-40 years*", 6% in the age group of *"40-50 years"* and only 1% in the age group of *"50 and above"* which depicts that maximum number of respondents are of the age group between *"20-30 years".*
- Out of 90 respondents, 59 respondents are male and only 31 respondents are female which is showing that the staffs in educational institutions has more number of males than females.
- There are maximum number of respondents who are married and working in the educational institutions.
- The organization has staffs who are post graduates and some of them also have PhD qualification.
- The respondents are highly satisfied with the infrastructure and feels that the management is effective in nature.
- Correlation among various measures like service quality, infrastructure, placements, practical exposure, and management is significant.
- For some of the measures, correlation has not shown significant results. This is due to the reason of small sample size of 90 and conduction of research in a limited area.
- The scale adopted is reliable for service quality, infrastructure, placements, and management but has not shown reliability for practical exposure.
- From the findings of regression results, it is shown that there is significant relationship between all the dependent and independent variables that are considered in the study.

Limitation of the Study

- The sample size was small and hence the result can have a degree of variation.
- Due to their busy schedule; the staff was generally reluctant to fill in Questionnaire.
- The staff does not want to disclose their personal information and their perception about the organization to the researchers.
- The respondents had a fear in their mind that their personal details will not be kept confidential.

The study is done in few educational institutions; this can lead to variation in the results. Therefore, the results cannot be generalized for the whole institution**.**

Conclusions

In this study, ***service quality, infrastructure, placements,*** *involvement,* ***practical exposure, management*** has played the vital role. Based upon these measures, the study is done in educational institutions, and it is found that the students of the organization are satisfied in which TQM is implemented.

There is significant difference in the institution which are implementing TQM to those which are not.

The result has shown this due to small size of the sample and also because the study is done only in few educational institutions.

Appendix 1

QUESTIONNAIRE

Objective:- The overall objective of the study is to assess the impact of TQM on higher education

1. Name of the respondent

……

2. Address

……

3. Phone number

……

4. Gender

……

5. Age of respondent

……

6. Name of Institution

……

7. Name of course

……

8. **Directions**: The following statements refer to the relationship between TQM and service quality in higher education and its impact on organizational effectiveness. Please read the following statements carefully and answer your views based on the scale that ranges from very good to very poor. Please tick mark against each statement according to your feelings.

1. WHAT DO YOU THINK ABOUT INFRASTRUCTURE ON THE BASIS OF.

ITEMS	Very good (5)	Good (4)	Fair (3)	Poor (2)	Very poor (1)
Building					
Class room					
Furniture					
Bus facility					
Play ground					

2. WHAT DO YOU THINK ABOUT PLACEMENTS ON THE BASIS OF

ITEMS	Very good (5)	Good (4)	Fair (3)	Poor (2)	Very poor (1)
Placement cell					
Company visits					
Interview preparations					
Mock interviews					
Aluminai support					

3. WHAT DO YOU THINK ABOUT SERVICE QUALITY ON THE BASIS OF

ITEMS	Very good (5)	Good (4)	Fair (3)	Poor (2)	Very poor (1)
Teaching methodology					
Usages of equipments					
Departmental support					
Problem solving sessions					
Seminars					

4. WHAT DO YOU THINK ABOUT MANAGEMENT ON THE BASIS OF

ITEMS	Very good (5)	Good (4)	Fair (3)	Poor (2)	Very poor (1)
Services					
Student satisfaction					
Faculty satisfaction					
Student growth					
Faculty turn over					

5. WHAT DO YOU THINK ABOUT PRACTICAL EXPOSURE ON THE BASIS OF

ITEMS	Very good (5)	Good (4)	Fair (3)	Poor (2)	Very poor (1)
Laboratory condition					
Equipment availability					
Equipment condition					
Faculty support					
New invention support					

Thank you for taking the time to complete this questionnaire, which will contribute to a report on the relationship between higher education and teachers' continuing professional development.

(Respondent signature)

Appendix 2

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