CHAPTER - 2
REVIEW OF LITERATURE

Review of literature is done to have in-depth idea related to the field of study. It also enables to enhance the knowledge base of the scholar and provides direction for the study. A great deal of research has taken place all over the world to study the application of Total Quality Management in different areas. In this chapter an attempt has been made to review the studies related to different aspects of Total Quality Management.

Benowski (1991) in his article, “Restoring the Pillars of Higher Education” cited several schools that have led the way in incorporating TQM into the curriculum and in using TQM to meet students’ needs. Among these schools are University of Miami in Florida, Columbia University in New York, and University of Chicago in Illinois. All of these schools had external impetus from American corporations to implement TQM and they achieved initial success in their TQM efforts. Benowski also indicated the lack of research in TQM by university professors. However, some universities have started to interact with quality officers of leading American corporations and to stimulate research interests among faculty members in the universities. Besides teaching and research, universities can also use TQM to improve the actual operations of the university. The article summarized the TQM implementation experiences at Fox Valley Technical College (FVTC), the Oregon State University and the North Dakota University. Based on the experiences gained at these colleges and universities, Benowski concluded that TQM actually worked in institutions of higher education. American colleges and universities can improve their curriculum, their research and their operations by implementing TQM.

Coate (1991) described the implementation of TQM at the Oregon State University (OSU). OSU implemented TQM in nine phases. The first phase involved exploring TQM. The purpose was to create a critical mass of top management people who would understand the meaning of TQM and why it might be of use to the university. The first-phase activities included visits to companies with exceptional TQM programs such as Ford, Hewlett-Packard, and Dow Chemical etc. In the second phase, OSU
established a project team to learn more about TQM and how to apply TQM in selected processes. The team studied the issue of how to “decrease turn-around time in the remodeling process”. The third phase was defining customer needs. OSU conducted three surveys among their customers between 1989 and 1990. The customers consisted of the general public, college-bound Oregon high school students, OSU alumni living in Oregon, OSU undergraduate students, staff, and faculty. Phase four consisted of adopting the breakthrough planning process. The breakthrough process is simply a “logical extension of strategic planning” and it contains five steps:

1) Define the mission;
2) Understand customers;
3) Identify critical processes;
4) State the vision; and
5) Identify priority breakthrough items.

Phase five involved performing breakthrough planning in the divisions. In phase 6, daily management teams were formed. Phases 7, 8, and 9 consisted of initiating cross-functional pilot projects, implementing cross-functional total quality management, and setting up reporting, recognition, and awards systems respectively. The article discussed the lessons learned from mistakes, structural changes that evolved from the program and changes in the behavior and attitudes of the participants.

Dufour and Eaker (1992) pointed out that reform movements are complicated happenings which appeal to selective audience who have differing agenda. The authors stressed that policy makes “doers” and action-oriented focus on the broad picture of reform and looked at commission recommendations as answers for national and state improvements. Secondly, community members and parents focus on the local scene, want to be involved and look for immediate results for their students. Third, the researchers and critics look for tangible results as evidence that reform efforts really work. The authors think of these academics as cautious, a deliberating jury, seeking all the evidence, both prosecution and defence can present. The authors opine that these practitioners, being more aware of what is needed in schools and aware of what does and does not
work are often aware how best to proceed to satisfy the different agenda from these varied evidence.

**Foggin (1992)** described the experience of applying TQM in the improvement of the MBA program at the University of Tennessee. A quality improvement team was formed to identify the customer needs and wants and the MBA curriculum was redesigned. By incorporating the requirements of the customers, the curriculum was changed dramatically. The results of the implementation of the new curriculum have been overwhelmingly positive. The program is believed to prepare MBA students with a strong and more holistic understanding of what a firm truly is, what customer-value and quality mean, and how they will be expected to work when they go to their new jobs.

At the University of Texas at Austin (UTA), the School of Business invited a corporate management consulting firm to evaluate the quality of education received in the schools (Byrne, 1992). McKinsey and Company, a prestigious management consulting firm in Texas, studied the competitive structures of USA business schools. Much as they would in a more typical strategic study for a corporate client, McKinsey consultants interviewed the schools’ major constituents; students, faculty, administrators, alumni, and corporate recruiters. The consulting team spent at least 4,000 hours studying the MBA marketplace and devised plans to meet the changing demands of the marketplace. The consulting group made recommendations for quality improvements ranging from simply updating its alumni directory to complicated objectives such as attracting more experienced and diverse applicants. The use of TQM approaches at UTA Business School has helped the school to remain competitive.

**Jaraiedi (1992)** demonstrated the use of Quality Function Deployment to improve teaching and student counseling in the school of Engineering at West Virginia University. Considering students as the primary customers and utilizing nominal group techniques, and interviews of faculty members and administrators, they listened to the “voice” of the customers. The Quality Function Deployment procedure was used to analyze and scrutinize the areas of teaching and counseling in the school. They recommended quality improvement measures ranging from a comprehensive instructor-training program to self-mentor programs by student groups.
Whitty (1992) concluded that among other things, quality teacher education requires the following: Firstly, a genuine partnership between the various stakeholders like training institutes, schools, LEA etc, in all routes to qualified teacher status. Secondly, a clearer definition of competence is required. Third, the author focused on monitoring of academic violations through a quality assurance system, based on the best practices developed under Council for National Academic Awards(CNAA). Fourthly, Administration of professional accreditation through a reconstituted and representative version of Council for Accreditation of Teachers Education (CATE), through a General Technical Committee (GTC) with strong extra-professional representation to ensure public accountability, is also necessary. The author advocated that if the above conditions are fulfilled, the teacher education could both control and assure quality, and hopefully counter the ill-informed attacks from critics.

Madu and Kuel (1993) discussed the dimensions of quality teaching in higher education institutions. They identified some of the serious problems and barriers to quality teaching in American colleges and universities. They pointed out that one of the major problems in higher education institutions was that they emphasized total quality assurance (TQA), rather than total quality management (TQM). They discussed the differences between TQA and TQM and recommended changes to be made for American colleges and universities to improve the quality of teaching using TQM.

Matthews (1993) described the progress of TQM implementation at the American institutions of higher education and identified the missing elements and major barriers of implementing TQM in these institutions. He indicated that while progress has been made in the areas of curriculum development and handling of operational problems, TQM has hit an academic wall in the overall direction of the institution and the functional areas of teaching and research. He identified the following four major barriers to applying TQM at the institutional and functional levels:

1) The highly generic and inappropriate nature of an average institution’s mission. Most institutions of higher education have a highly generic mission. They try to satisfy a wide range of very diverse interests and thus end up trying to hit multiple targets with a single arrow. While the mission generally satisfies nobody, it is also
sufficiently vague and all-encompassing enough to infuriate nobody and thus it can be conveniently put aside and forgotten.

2) A lack of agreement within the academic environment as to the meaning or implications of “quality and excellence”. Given the nature of academic endeavors, quality and excellence are highly subjective and often difficult to define. It is relatively easy to identify those areas in which efforts to achieve superior performance will be made (teaching and research being two of the most obvious). The measurement of an actual performance towards these noble goals poses complex problems since there are no universally agreed-upon measures for quality and excellence.

3) The independence of key individuals within the academic environment. The twin concepts of academic freedom and tenure have resulted in university administrations that have limited control over key personnel, especially those with tenure. Therefore, it is very difficult for a president of a college and/or university to include everyone in quality improvement efforts.

4) The reluctance of college or university leaders to play an aggressive and creative role in TQM implementation.

Given the last two barriers, the leaders of many academic organizations have been somewhat reluctant to tackle the application of TQM to their own organizations.

Realizing the above barriers to TQM implementation, Matthews suggested the following seven steps for TQM implementation:

1. Identifying the institution’s primary stakeholders;
2. Developing a specific competitive quality-based mission;
3. Establishing internal measures for quality and excellence in specific and identified areas;
4. Determining who has to commit to the chosen standards;
5. Establishing motivation for those unwilling to commit to quality and excellence;
6. Forming quality progress teams; and
7. Reporting, recognition and rewards.

He stressed that these seven steps would help institutions of higher education to introduce quality and excellence into all aspects of academic life and at all levels of staff.
Murgatroyd & Morgan (1993) studied that school improvement in the USA has not succeeded because the successful elements of various approaches have not been tied together into a coherent delivery system in order to refine these successful practices or to tackle new problems. However, lessons from successful corporations using the TQM provide education with a proven process to attain quality services and product through a structured, systematic delivery system designed to promote continuous improvement.

Shankar (1993) outlined a framework for the service quality. According to this framework, service quality is dependent on 5 factors:
1. Reliability-- The ability to perform the promised service dependably and accurately.
2. Tangibles-- The appearance of physical facilities, equipments, personnel and communication materials.
3. Responsiveness – The willingness to help the customers and provide prompt service.
4. Assurance -- The knowledge and courtesy of employees and their ability to convey trust and confidence.
5. Empathy -- The caring and individualized attention provided to the customers.

Williams (1993) traced the routes of TQM in education. The author outlined six basic themes for the implementation of TQM in higher education. Firstly, the imperative of continuous quality improvement if an enterprise is to hold or enhance its place in the market. Secondly, the emphasis on obtaining consistent quality in incoming resources through careful management of suppliers. Thirdly, by active participation of all the members of an organization productive workforce in the improvement of quality. Fourthly, by giving importance to customer needs as the fundamental basis for the improvement of goods and services. Fifth, by the need for co-operation and coordination as the basic way in which an enterprise can improve its quality. Sixth, by concentrating on design rather than inspection for quality improvement i.e. the establishment of procedures which make it impossible for bad quality to be undetected and encourage the primary aim of continuous quality improvement.

Anderson et al. (1994) emphasised various distinctive features of TQM like visionary leadership, process management, individual and organizational learning.
internal and external cooperation, employee empowerment and fulfillment.

Hartley & Weller (1994) in their study entitled “TQM and School Restructuring, Georgia’s Approach to Educational Reforms” examined that large school systems in the state urban and inter-city systems hesitate to adopt TQM as a reform model for reason like bureaucratic superstructure of such a system which is large and complex, and, hence, redesigning their infrastructure would be a monumental task which many educators and board members hesitate to undertake. Staff development programs is another constraint due to logistics. Reorganization at the school district and building levels cost money. Without external funding, these districts are currently in a holding pattern even though there is some movement of foot to adopt TQM on a pilot basis.

Hartley & Weller (1994) in their article “Why are the Educators Stonewalling TQM” stressed on the need of TQM in education and made a comparison between business firms while relating various success stories of business. The authors agreed that unlike in business organization, the educators have no control over the inputs but, still the authors believed that the educators can control the process of education through TQM and have tighter control over the influences affecting the student education. The authors highlighted the consistent and enduring track record of success of TQM through teamwork, continuous improvement, Kaizen, producing quality product, whether the product is tangible or intangible. The authors also focused on shortsightedness in education as is evidenced by short-term goals with emphasis on immediate results through quarterly students grading process. The authors strongly believed that tests should become a diagnostic enterprise. They were strongly in favour of “Deming” saying that final inspection has no place in quality organization and that evaluation of a product must occur at every step in the production process. The authors also put forward the issue of tenure and property rights for teachers and administration.

Owig (1994) conducted a study on the violation of assumptions of TQM. The author found that major reasons for the existence of these barriers can be attributed to the unique nature of higher education institutions. The author stressed that unlike a for –
profit organization, educational institutes are non-profit organisations and they often involve many stakeholders. Customers are not well defined and it is often difficult to monitor and control quality. The author pointed out that some people even argue that the assumptions of TQM do not support its use in the academic arena of higher education.

**Raju et al., (1994)** opined that the goal of TQM in higher education is to impart quality education so as to ensure students’ satisfaction, where student-satisfaction is defined as the satisfaction with course quality, instructor interaction and peer collaboration and support services. The authors advocated the use of student-satisfaction surveys which could serve two purposes in the years to come—first, as a more comprehensive tool for improving higher education and enhancing the student learning experience in general and second, as a managerial instrument for adjusting and adapting higher education institution to a changing and tougher economic reality. The authors conducted an empirical study which proved that ISO 9001:2000 certified institutions are among the TQM class, offering a better quality of educational service than non-ISO institutions. The authors believe that management commitment is the most important factor affecting TQM implementation. They recommended that if the two constructs—commitment of the top management and campus facilities are improved, there will be corresponding improvement in relation of other three constructs, namely course delivery, courtesy and customer feedback and improvement which though not strong predictors are significant predictors.

**Babbar (1995)** suggested that commitment, honesty, openness and high ethics are essential pre-requisites to adopting the TQM philosophy. Any inherent contradiction visible to the student in what the instructor preaches on the one hand and practices on the other invariably creates barriers to student’s acceptance of what is communicated by the instructor. The author believed that teachers must be open to the ideas, constantly evaluate the processes they use and innovatively apply the TQM elements to their own teaching. The author further stressed that TQM is a continuous and rapid revision, implementation and evaluation of an organization standard operating procedures. The
Blades (1995) recommended the model for quality with customers, consumers, parents as its key features. The model aims at improving the communication both with internal and external customers. The author viewed management commitment to quality to be absolutely fundamental to the implementation of quality. Communication and training are also vital to quality. Mr. Blades also observed that without communication managers do not know what customers want, nor do customers know what organization can provide.

Bolton (1995) advocated the use of TQM in higher education institutions giving following reasons. Firstly, TQM emphasis on individuals at all levels having significant impact on quality accords with the human centered values of Higher Education Institutions. Second, TQM highlights quality team which match customer needs to product design capabilities. Third, TQM encompasses the service sector, including the HEI’s which differ from manufacturing in that parts, as the services here are intangible. Fourth, the measurement of performance is an inescapable feature of TQM. Fifth, TQM helps reducing costs. The author conducted a case-study of management school at Lancaster University, and found TQM to be very successful and quite compatible with the academic culture. TQM emphasizes individual values, designing provisions to satisfy demand, PIS and assessment of quality and reduction of costs, all of which have due place in Higher Education Institutions.

Holmes & McElwee (1995) discussed the various issues of HRM in TQM. The authors observe that very hard HRM and TQM, as an imposed system for quality, will not work easily in Higher Education Organizations because of two reasons: firstly, academics and others who work in the education sphere have, to a certain extent, a reputation for liberalism and non-conformism; Second, educational organizations and management systems have cultures that are historically different and dissimilar to that practised in traditional commercial industrial sectors where hard HRM and TQM have
had their success and roots. The authors further studied that quality of education encompasses the whole provision, the system, structure and procedure but, more importantly, it involves the producers and consumers in an active and interactive exchange and development. The real issue of quality lies at the level of the individual interaction when the benefits and experiences gained during the institutional encounter become a distant memory. The authors suggested that to ensure ourselves of quality in the process of education, it is not simply a qualitative shift in the process, structure, system or methodology that is required but a fundamental shift in ideology, ethos and culture.

Lindahl et al., (1995) conducted a practical study in order to implement TQM in an institute. It started with the determination of the mission, identification of the customers, determination of customer requirements, identification of supplier, defining supplier requirement, agreement between project team and supplier, establishing consensus among team members on project focus, designing a measurement mechanism, implementing the feedback mechanism, evaluating the process results and identifying the steps for improvements, implementing continuous quality improvements. The process introduced several changes in the teaching. The authors found that the TQM project offered significant benefits to the team, suppliers and customers. The students underwent a “team” experience and exercised their interpersonal skills in gaining the commitment of the customers and suppliers. The teachers gained feedback and constructive suggestions that are not available from formal evaluation process. They got valuable feedback from the customers. The teams were better empowered and commented favorably on the whole TQM project. The authors further concluded that TQM can be made more effective by paying more attention to the dynamics of team activity.

Ho and Wear (1995) highlighted the various advantages of TQM implementation in the institutions like increase in students and growth in campuses. The authors focused on the key TQM principles like leadership, commitment, total customer-satisfaction, continuous improvement, total involvement, training and education, ownership of problems, reward and recognition, error prevention and teamwork. As per the authors,
pitfalls include oversimplification and underestimation of difficulty of bringing about cultural change, failing to understand that every company and environment is different, lack of project management, overemphasizing technical tools at the expense of leadership, applying the tools before the needs are determined and direction is established etc. The several conceptual models of service quality to measure the tangible and intangible service elements include several gaps like the gap between customer-expectation and management-perception of customer-expectation, service quality specifications, and service delivery, service delivery and external communication to customers, customer’s expectations and perceived services. The higher education TQM model of excellence includes 5 S, MEQC-Marketing & Education Quality Control, QCC, ISO, TPM and TQM. It believes that satisfying customer is a continuous process because customer needs change over time.

Shaffer and Pfeiffer (1995) described the application of Quality Function Deployment (QFD) in the design of nurse training module. A design team used the QFD approach to identify customer needs and develop teaching module to satisfy customer needs. The module they designed was tested in four large health-care facilities in the USA and the design proved very successful. Pittman et al., (1995) discussed how QFD can be used to measure customer-satisfaction in educational institutions. They utilized QFD in evaluating the MBA program at Grand Valley State University. The inputs for the QFD were obtained through several brainstorming sessions of MBA students, faculty members, administrators, and business executives. The preliminary results of the pilot field test show that QFD is a very useful tool in ascertaining customer desires, prioritizing them, and directing organizational resources toward customer satisfaction. The AHP technique developed by Saaty (1980), is a decision-making method for prioritizing and evaluating different decision alternatives when multiple-decision criteria must be considered. AHP has been applied in a wide variety of decision areas, including selection of suppliers (Nydick and Hill, 1992), evaluation and selection of manufacturing expert systems (Leung et al., 1992), selection of research and development projects (Mathew, 1987), evaluation effectiveness of just-in-time (JIT techniques on
manufacturing efficiency and effectiveness (Norris, 1992). AHP has been shown to be a very effective decision-making tool for a variety of decision-making situations.

Elmut et al., (1996) analysed that the advantages of TQM system are both qualitative and quantitative in nature and it makes institutions proactive rather than reactive. The authors conducted a research study and concluded that TQM techniques improve participants’ morale, productivity, adaptability to environmental changes, responsiveness to both students and corporate needs; a positive association exists between TQM programs and overall organisational effectiveness. The authors opined that it is high time that institutes of higher education take a lead in implementing the principles of TQM because they can benefit from the innovations derived from TQM practices in order to operate at an acceptable level of efficiency and effectiveness. The authors stressed that the process is tedious because quality needs to be not only taught but absorbed, tested and refined. Giving reasons for the failure of TQM in many institutes of higher education, the authors observe that faculty and administration need to be trained fully to comprehend and understand the concept of TQM before it can be passed on to the students.

Garbutt (1996) pointed out that TQM is moving from industry to education, still customer of education is not clearly defined. Same is the case with the term ‘Product’. The author opined that many institutes don’t consider students as a product. The authors advocated the use of mission statement to achieve quality in both industry and education and suggested that schools must adopt a TQM approach that continually looks to improve the effective use of resources, maximize the opportunities for pupil, develop their staff and fulfill the needs of the community. In his views, schools can do this by continuous reassessment to improve effectiveness with less effort. There is need to review the school organization regularly so that development can be taken on without increasing workload. They need to set and implement educational objectives for the school and review these regularly alongside achievements as a basis for future planning. The author further opined that schools need to show facts and adopt schemes for staff development and appraisal, developing quality leadership at all levels. The author stressed that effective communication and staff involvement in decision making are of paramount importance and this needs to be developed by the school. The author believes that TQM is about
efficiency, productivity, long term success and adopting an attitude that all individuals can contribute to the pursuit of continuous improvement.

Idrus (1996) carried out a literature-review of practices in applying quality concepts to education around the world. The author analysed various rationale for introducing and adopting the concepts in educational institutions. The author studied the gap between successful and unsuccessful manufacturing companies to show-case the impact of QA/TQM on organizations. He also suggested two ways to implement the TQM, namely, the Academic Approach wherein emphasis is more focused on teaching/learning outcomes resulting from the implementation of TQM and the Strategic Approach where a globally strategic perspective is taken, so that both academic and administrative areas are included in the implementation of TQM. The author also highlighted the various problems faced in implementing TQM in education like definition of the customer, clarity of purpose, adoption of industry sense of TQM etc. The scholar strongly believes that if TQM is properly implemented, it can result in increased placement rates, fewer dropouts, increased enrolment, increased employee satisfaction, greater accountability, better customer services, reduced overall cost of experience etc.

Lo & Sculli (1996) suggested that the integrated TQM concepts, which are applicable to manufacturing and service industries, can, with judicious planning, be applied to education. The authors opined that the use of TQM and ISO 9000 standards in education is still relatively young. They observed that the effective curriculum design requires strategic planning starting with the institute’s educational vision, mission statement and education policy. These must be well defined and disseminated to all personnel involved. All functional departments will, then be required to develop their own operational plans which are in line with the objectives. Thus, every employee of the institute, the principal, the teachers and even the lower level administrative staff must be involved in establishing the necessary TQM operational systems.

Ho & Wearn (1996) developed an effective and systematic way to introduce TQM to build Higher Education Institutions (HEI) and build on existing partial TQM practices. The authors opined that most HEI concentrate exclusively on students and,
perhaps, employees as the customers but neglect the diversity of customers which TQM must satisfy. They also pointed out that commitment from everyone was imperative for continuous improvement in implementing TQM. The authors proposed a Higher Education TQM model of excellence (HETQMEX) built on rigorous research and experience, emphasizing an understanding of customer needs and encompassing proven quality management techniques structured in an effective sequence. HETQMEX is based on contemporary definitions and perceptions of quality in general and service quality in particular. The authors suggested that in order to implement the objectives successfully, it is very important to obtain the top management commitment, assess the current quality system situation to identify all the existing good practices, create a documented implementation plan, provide training so that staff are fully aware of the changes, create and update quality management documentation, monitor progress as part of Deming Cycle (PDCA).

Cheng & Tam (1997), in their article titled “Multi models of Quality in Education”, suggested seven models with emphasis on different aspects of the process for pursuing quality in education. The authors opined that traditionally many people tend to use these models separately to ensure quality in education. The first model “The Goal and Specification Model” sees the education quality as achievement of stated goals and conformance to given specification. In The Resource Input Model, education quality is regarded as the natural result of achievement of quality resources and inputs for the institution. This model is very useful when there is a clear relationship between inputs and outputs and quality resources for the institution are less. In the “Process Model”, quality is seen as smooth and healthy internal process and a fruitful learning experience. It is useful when there is clear relationship between process and educational outcomes. In the “Satisfaction Model”, quality is defined as satisfaction of all powerful constituencies, which are critical for survival and must be fulfilled. It is useful when the demands of the constituencies are compatible and cannot be ignored. In “Legitimacy Model”, the authors assume that educational institutions need to be accepted and supported by the community in order to survive and achieve their mission. The authors stressed that carefully monitoring its programs and checking signs of ineffectiveness through the feedback loop,
the educational institution can ensure that no endemic problem is emerging in education quality. Finally, an educational institution continues to improve and develop itself in all important aspects through learning from its errors and its environment. The authors strongly believe that in order to achieve total quality in education, the application of all these models as a whole may be necessary. According to the concept of TQM, quality in education can be ensured if an educational institution can involve and empower all its members in functioning, carry out continuous improvement in different aspects of internal processes, satisfy the requirements, needs and expectations of its external and internal process.

Jann et al., (1997) observed that institutions have always held academic excellence and high quality as the highest goals. Achieving these goals was easier in the time of abundant resources and favourable demographics unlike now when the institutions are facing decreased enrollments and recurrence, while costs and competition for students are increasing. The authors referred to a conceptual framework of the quality movement as the “quality principle”. The quality principle is the management approach for making higher education institutions more effective. These principles were conceptualized and documented by experts such as Deming, Juran and Crosby and implemented under the name of TQM. These quality principles are: vision, mission and outcome driven; system dependent; leadership; systematic individual development; decision based on fact; delegation of decision making; collaboration; planning for change. The authors specified that these quality principles are essentially compatible with the values of higher education in general. The authors believed that most institutions have missions but outcomes of their processes and constituency within higher education institutions act independently rather than interdependently. The authors stress that the leaders, who are not trained in the modern tools and techniques used to improve systems and processes. The authors highlighted the importance of professional development and systematic way of collecting data. They also focused on changing the culture positively. However, the authors believed that planning for change is an attitude to be cultivated by the leaders in the institutions. The leaders are essential in creating a quality culture and they play a significant role in assuring that necessary resources are available to support
quality initiatives. When the quality principles are implemented holistically a culture for academic excellence is created.

Michael et al., (1997) defined TQM as a general management philosophy and set of tools which allow an institution to pursue a definition of quality and means for attaining quality with quality being continuous improvement ascertained by customers, content not with the services that they receive. The authors advocated that TQM can be applied to higher education but it must be modified to fully recognize some unique aspects of education namely that education is a service industry with the visible tangible product and it serves multiple customers. The authors proposed a basic TQM model which consists of eight steps namely: Define the Customer, Define the Mission, Vision Statement, Employee Empowerment and Fear Elimination, Develop Pilot Teams, Training, Develop the Measurement Criteria, Recognition and Reward and Continuous Improvement. The authors also suggested several Do’s and Don’ts while implementing TQM. The Do’s include to conduct regular customer survey, to differentiate between groups of customers, allocate sufficient time, selling the TQM programme, simplifying every phase, to start with Administrative Block and move to Academic Block, do things right the first time, benchmarking, tailor the TQM program, good communication, to provide training etc.

Narasimham (1997) focused on education improvement and tried to find the gap between the delivery of lecture by the teacher and expectation of the students. The author opined that it is high time that students’ demand should be fulfilled because of increase in class sizes, mixed-ability groups due to diversity of students intake, multiplicity of courses offered, pressure from quasi-government bodies, students being more aware of their rights, adoption of innovative methods of HEI’s. The author highlighted four gaps, namely: students’ expectations of an ideal teaching session and their perceptions of an actual learning session, teachers perceptions of the actual session and their perceptions of students expectations, teacher and student perceptions of actual sessions.
Owlia & Aspinwall (1997) opined that though TQM as a successful managerial strategy is generally accepted in commercial organization, its role in the public sector, especially in higher education is still controversial. From a theoretical view-point, customer orientation is more of a problematic principle of TQM when applied to universities, reason being the special nature of many academics whose motivation for work is often independent of market issues. Disregarding the market, on the other hand, has the danger of ignoring the real needs of the customers. The effectiveness of leadership can be adversely affected by individualism among academic staff, since the institution does not follow a unified direction. The authors are of the view that the problems that exist with TQM in higher education, however, should not overshadow the necessity for change in this area. Financial problems and market pressures, which are challenging many higher education institutions, appear to give the main impetus for the change and they leave institutions with no alternative but to offer “higher quality at a lower cost”, the primary aim of TQM.

The authors analysed some case studies to study TQM features in higher education, and concluded that the types of activities carried out in the environment are not so different from those experienced in manufacturing or service sectors. The results were also similar, as successful experiences have shown indicators of increased customer satisfaction, higher productivity and improved student/staff morale. This comes first because the TQM implementation so far has mainly focused on administrative section of the universities and colleges and second because functions like top management commitment, organization for quality, strategic planning and training are universal in nature regardless of the type of organization concerned. However, the implementation features like supplier quality management, information and analysis (measurement) and design management seem to be different when adopted to this environment. The authors further compared USA & UK institutes where it was seen that in case of USA, where TQM was first introduced in higher education, total quality practices seem to be more extensive and more widely accepted than in UK. The reason may be the more privatized and market dominant nature of the US higher education.

Aparna, et al., (1998) traced the programme of inducting highly successful
Total Quality Management techniques in Indian organizations. They were of the view that quality is never an accident. It is always the result of high intentions, sincere efforts, intelligent direction and skillful execution. Further, the authors stressed that in contrast to the traditionally managed organizations, TQ-managed organizations believe that though there is no complaint from the customer and there is always room for improvement.

Shutler & Crawford (1998) analysed how ISO 9000 should be applied in higher education. The authors stressed on two core issues, namely eliminating the possible causes of poor quality arising in the teaching system and striving for continuous improvement in the teaching system as a whole. The authors opined that when ISO-9000 is applied to higher education according to BSI definition of product of education, a number of key educational management issues must be faced, many of which are currently being debated as to find out what the students want to learn and modify the course syllabus accordingly, adopt effective teaching methods and ensure that lecturers are trained to use them, develop approaches to assessment which will ensure that entrants are up to the course and that graduates have really achieved the desired learning outcomes and commit the institutional authority to take action in implementing.

Felder and Brent (1999) recommended various ways as to how an instructor can improve the quality of instruction in an individual course and then the more difficult question of how an academic organization. The authors defined good teaching as instructions that lead to effective learning which, in turn, means thorough and lasting acquisition of knowledge, skills and values the instructor has set out to impart. The authors highlighted four strategies: the first strategy is to write instruction objective which is defined as the statement of specific observable actions that, then, should be able to perform if they have mastered the content and skill the instructor has attempted to teach. The second strategy suggested by the authors is active learning. They believe that a student’s attention is more in the beginning of the lecture and it diminishes by the end of the lecture. However, his attention can be maintained throughout the class session by periodically giving them something to do. The authors also opined that questions should be asked directly to the students rather than looking for volunteers. They also focused on
the practice of recalling prior material, group exercises, problem solving, generating questions and summarizing. The third strategy advocated by the authors is cooperative learning that involves students working in teams to accomplish an assigned task and produce a final product under the conditions that include the following elements, namely positive interdependence, individual accountability, face to face promotive interaction, appropriate use of teamwork skills and regular self-assessment of team functioning. The fourth strategy recommended by the authors is assessment and evaluation of teaching quality. The authors criticized the use of only end-of-course student surveys to evaluate teaching quality. They advocated shifting from teaching based models to learning based models of student development, and from assessment as an add-on to more naturalistic approach embedded in actual instructional delivery.

Shuttler and Crawford (1999) focused on the interpretation of TQM advocated by Crosby (1984) and Deming (1986). The authors opined that different interpretations of TQM, however, may lead to radically different educational processes and outcomes. Teachers seeking to implement the Crosby “zero defect” model, may concentrate simply on achieving better examination results without regard to the context taught while supporters of the Deming model may focus on a never-ending cycle of improvement in the teaching and learning process and downplay the significance of final examinations. The authors highlighted that Crosby model can lead to situation in which students pass examinations at the first attempt but may become passive, inflexible, lacking in creativity and imagination and the Deming model can lead to a scenario in which students can actively involve in enquiring projects, problem-solving exercises, group and cooperation work, application of knowledge of exercises and egalitarian relationship with teachers. The major obstacles in implementing the Deming model are tendency of teachers to depend on final examinations as a measure of quality, difficulty encouraging student-centered approaches to learning and reluctance of many teachers to accept new methods of learning. The authors believed that successful implementation of the Deming model of TQM in schools is likely to depend on programs of training for teachers and indeed students.
Lomas (2000) observed that there is neither a panacea nor a blueprint to help with the most difficult task of embedding quality. His study suggested some ideas that are well worth considering and implementing, but the cultures of institutions and sub-cultures of the departments within them vary greatly and hence with such diversity, the way forward will be contingent upon the nature of the particular academic unit and the people who work there. The author argued that, however, it is possible to highlight certain factors that are more likely to bring success. The organization needs to find, develop and nurture transformational leaders, staff who have the very highest level of knowledge and skills in leadership and HRM. Accordingly, an organization may choose to employ a particular quality management model such as EFQM or TQM, depending upon the needs of a particular academic unit. Further, higher education is considered to be the most important phase in terms of achieving eco-growth. When quality has been successfully embedded, students in the universities are more likely to receive a first-rate education. Consequently, it will not only be the students that will benefit in terms of their personal growth and development but they will also be able to contribute to the country's economic and social prosperity in the 21st century.

Oshagbemi (2000) explored the job satisfaction levels of UK academics, focusing in particular on their primary task of teaching, research and administration and management. The author found that age is related to satisfaction levels in the core aspects of the university teacher’s job. However, the nature of the impact of age on the job satisfaction of academics varies from one aspect of the job to another. The author also found that research satisfaction is related to rank -- the higher the rank, greater the level of research satisfaction. The study further investigated the operational aspects of university and, in particular, whether satisfaction with each of their core task was related to age, gender or rank. The author found that significant association exists between age and satisfaction in the core aspects of the university teacher’s job. However, the nature of the impact of age on the job satisfaction of academics varies from one aspect of job to another. The nature of relationship between age, research, teaching, administration and management is not clear although the relations themselves are statistically significant. The results also reveal, expectedly, that research satisfaction was related to rank -- higher
the rank, greater the level of satisfaction. It was also found that gender satisfaction is not related to teaching, research or administration and management.

Sytsma (2000) in his study “Practicing Continuous improvement in the Classroom” discussed various techniques to bring quality in classroom. Firstly, changing the learning process which is dependent on quality to one in which the teaching/learning process itself guarantees quality by applying TQM/CQI philosophy. The author put forward two ways for adoption of CQI/TQM in the classroom. Firstly, Individual Faculty Adoption Process in which if a professor chooses to adopt the new philosophy, he/she can do it quickly. It is an easy way as adopting new teaching strategies and monitoring them is well within the expertise of any faculty member. Secondly, Institutional Adoption Process which provides better gains because of three reasons. First, more faculties will adopt the new philosophy and begin the continuous improvement journey; second, the body of knowledge and expertise both in continuous improvement techniques and in effective teaching strategies will be greater and consequently the gains will be greater and rapid. Third, institutional adoption brings institutional resources to bear on the effort. This makes a systematic approach to the effort possible, leading to synchronization and coordination of efforts and therefore greater gains. The author concluded that adopting TQM/CQI institutionally requires the courage to make the change, the commitment to see it through, the financial resources necessary to make it possible and willingness to lead by example.

Helms et al., (2001) in their study ‘ TQM Principles and Their Relevance to Higher Education: the Question of Tenure and Post Tenure Review’, questioned the concept of tenure - system prevailing in most American universities. The authors argued that though the tenure - system provides some stability to the faculty, but it also raises several questions like what if a tenured faculty member stops publishing and researching entirely, what if a faculty member pursues research that is not beneficial to students, spends more time on consultancy outside the campus and minimal time on the syllabus. The authors produced several facts in the USA and abroad where some universities are rapidly increasing the number of faculty positions that do not award tenure. The critics
Review of Literature

against the tenure-system include students, legislators, tax-payers, trustees, university administrators etc. The authors observed that the tenure was created to protect academic freedom and not to guarantee continuous employment to continually poor-performing educators. They recommended to apply TQM to higher education though it was difficult to measure the results in education as compared to manufacturing units. The major performance measurement areas are teaching, research and service. The authors tend to form teams and small group improvement activities. They further believe that the world of higher education will be forced to reckon with the global movement towards TQM and tenure will, very likely, undergo countless revisions. As higher education continues to embrace the quality movement, more faculty will be drawn in the process of creating quality improvements in all aspects of universities nationwide. Hence, universities have a tremendous task before them and that is to effectively use the tenets of the quality movement which will certainly benefit their mission of success in future.

**Kruger (2001)** discusses the work of 5 quality gurus, namely Deming(1982), Juran(1988), Feigenbaum(1983), Crosby(1979), Ishikawa(1985). The author, in his study, stresses that main ideas of their work are primarily oriented to securing the survival of the company by making full use of the company’s technical resources. He points out that the quality gurus understood that in the increasing business world after 1945, where many firms were struggling to survive, the companies could not afford to leave any technical resources of the enterprise lying idle. However, the role of human resource issue and the vital contribution that the individual employee can make to the quality objectives of his company were hardly recognized by these classical quality gurus. The author opines that management needs to make use of all the resources, technical and human. The author further points out that without the total commitment of all employees, the organization will have great difficulties in surviving the today’s business world.

**Oshagbemi (2001)** conducted a study of academics in UK to investigate how satisfied academics were with the behaviour/supervision of their line managers and whether age, gender, length of service or rank had any impact on the level of satisfaction which they experienced. The author found that half of the university teachers were
satisfied and about one third were dissatisfied with the behaviour or supervision of their line managers. The author also found that longer service period reduced the satisfaction level, reason might be their association with more effective managers in the past or because the list of controls with the current manager continued to grow from what academics was used to be in the past. Gender and age were found to be less related to satisfaction with line manager’s behaviour and supervision. The study suggested that as managers were occupying challenging roles in the organizations, they need to undergo management development programs fairly regularly in order to increase their level of effectiveness. This training would increase the performance of administration and management as well as increase the satisfaction level.

**Popli (2002)** concluded that to develop an ongoing relationship with the institutes, the customers (both the students & recruiters) of the management colleges need to experience ‘delight’. Delight is nothing but exceeding customer-satisfaction. Further, the author opined that an institute could delight a customer only if the organization knew what the customer expectations were, which could be easily known by employing satisfaction surveys.

**Schmidt (2002)** opined that though value is a relatively new concept, but applying the value-added concept to a service operation such as higher education institution should provide the management with another tool in determining the perceived and anticipated added-value to be received by the student-customers after they pay their tuition. The author believed that tuition paid by the student is usually recorded as the gross amount less any aid the student may receive. The author excluded the goods purchased from outside the college for value-added calculations. Schmidt stresses that education perceived-value as seen by the student is based on out-of-pocket expenditure made by the student and student’s family, if supported by the family. Accordingly, if the student or student’s family pays significant funds by direct expenditure or willingly borrows money, the student’s perception of the college education quality must equal or exceed the cost of education.

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\text{Perceived-value of the selected college} = \text{published tuition fee - tuition discount} - \text{scholarship at entry - grants at entry.}
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Koch (2003) observes that far more has been said than what has been done on the issue of TQM in education. The author believes that the idea of TQM has failed to deliver and will slowly fade into the background gradually. Further opposing TQM, the author pointed that TQM simply does not work as advertised, giving three reasons. The first reason is that TQM has not addressed the most important issues facing colleges and universities. A large majority of TQM effects in colleges and universities has focus on the non-academic facets of these institutions operations, like bill collection, admission application, physical plant inventory and job scheduling. Secondly, it is against the academic-tenure and academic freedom which was previously enjoyed by the teachers. Many faculty members viewed TQM as “business like” intrusions, where the process of evaluation and measurement in higher education is bi-directional, at least where the faculty and the students are concerned. Defining the customers in higher education is another issue. For TQM to be effective, the definition of customers needs to be clear i.e. who is being served. But in case of educational institutes, there are a variety of customers viz. students, faculty, parents, alumni, sportsmen and fine arts supporters, fans, business firms, those who utilize faculty researches, individual and organizations who rent facilities, farmers, high technology organizations and the government. Since it is difficult to specify who are the customers of higher education, it is commensurately difficult to delineate how one should measure their satisfaction, even if one were to agree that it is satisfaction rather than other variables that one should be used to measure the results of TQM.

Cheng (2003) opines that education quality is experiencing three waves based on different paradigms. The first wave of school reforms and initiatives focuses on internal quality assurance and makes an effort to improve internal school performance, particularly the methods and processes of teaching and learning. The second wave emphasizes interface quality assurance in terms of organization effectiveness, stakeholders’ satisfaction and market competitiveness and makes efforts to ensure satisfaction and accountability of internal and external stakeholders. The third emphasises
future quality assurance in terms of relevance to the new paradigms of education concerning contextualized multiple-intelligence and globalisation. The author opines that three waves of education reforms, in fact, represent different paradigm in conceptualization and assurance of education-effectiveness and quality. These three waves are internal quality assurance, interface quality assurance and future quality assurance.

Adcroft, Willis and Dhaliwal (2004) discussed the various issues in management education. The authors argue that the intellectual foundation of this growth are unsupported by a significant volume of evidence and so it is unlikely that the hope for economic outcomes will be achieved. The authors advocate that the tension between prescription and recognition of the activity need to be resolved by, both, academics and policy makers before the benefits of education in the area can be realized. The authors also co-related the management education with automobile industry of USA which failed Japan’s manufacturers in the 80’s due to two main reasons, namely Japanese management was superior and secondly American management was outdated. The authors stressed that entrepreneurs should develop the skills of creativity, leadership, innovation etc. to cut down the tensions between recognition and promotion.

Morgado & Silva (2004) provided evidence of variables that explain support-teachers’ beliefs concerning the academic achievements of students with special educational needs. They identified “Teaching Approach” and “Curriculum Design” as the key components in student’s academic success. Other components discussed were school climate, student characteristics and out of school context. The authors stressed that although greater emphasis is being placed on these two issues, still a wide range of teachers do not receive initial training on how to teach students with special education needs and, consequently, may not feel confident of knowledge and skills. The authors also examined that the studies that address instructional adaptations also show that educators tend to analyse their teaching performance in relation to the current performance about effective teaching practices and thus discover that there may be significant differences between the theoretical frameworks and what actually happens in
the classrooms. The authors felt that the classrooms which include students with special needs present a complex and challenging environment.

**Sahney et al., (2004)** emphasized that while TQM is widely practiced, there is little agreement on what it actually means and a single homogeneous theory of TQM is lacking. The authors stress that with tremendous amount of environmental pressures from stakeholders, substantial interest in TQM in education has begun to emerge, although this interest has been focused primarily on higher education institutions. The applicability of TQM philosophy and the theories in the educational sector have attracted the interest of many theorists and practitioners. Quality in education is a multiple concept with a varying conceptualization and this poses problems in formulating a single comprehensive definition. It includes within its ambit the quality of inputs in the form of students, faculty, support-staff and infrastructure. The authors view education system as a transformation process, where inputs include factors relating to the students, teachers, administrative staff, physical facilities and infrastructure, the process includes activities of teaching, learning, administration and the output includes examination results, employment, earning and satisfaction. The authors attempted to identify the customers of higher education system. The various categories of customers of the educational system have been identified and it is concluded that while the needs and interests of the various customer groups may not always coincide, the best method of resolving different interests is to recognize their existence and to look for issues that unite the different parties.

**Sirvanci (2004)** advocates that higher education institutions are facing challenges for some time which are expected to increase in future. Unlike the business organizations which have become leaner and efficient by adopting TQM, higher education institutions have not seen prosperous results. The author highlights some critical issues in TQM implementation. It includes, firstly, the customer identification where the current and potential customers of an organization are determined. Second issue is leadership; the author believes that unlike in industries where there is an example of executives behaving as leaders, there is no leader in educational institutions because the faculty also shares the load of administration. The cultural and organizational transformation is another issue
that requires elements like teamwork, customer and market focus, employee involvement and participation and process management. The author observes that deep-rooted tradition dating back several centuries, causes institutions to resist change. The author stresses that in implementing TQM in higher education, one needs to realize that higher education is different from other service industries and depending on how customers are identified, the performance-measure for the organization and processes under study are affected. The author strongly recommends that for successful application of TQM, Quality Function Deployment can be used for curriculum development and improvement.

Sohail et al., (2004) discussed the various issues of higher education in Malaysia before and after ISO certification in a private institute. The authors found that before ISO certification in the institute, the nature of the job responsibilities were unclear and there was no standard method of record maintenance and filing systems in most departments. The authors found that when quality system was being employed in the institute, it witnessed high turnover among the needs of the department owing to stressful nature of responsibilities. The authors found that after applying ISO implementations, overlapping of duties work overload and work redundancies were lessened tremendously. As a result, employees were seen more satisfied. The surveys were also conducted to check student and staff-satisfaction. The authors found that the pass-rate for the year 2001 was 93.6, for 2003 it was 89.3 and for 1999, it was 79%. The authors also noted that student enrolment depended on course offered, availability of hostel facility, whereas nearness to the place of residence and lower tuition fee were seen as least important reasons.

Porter and Ellins (2005) in their study conducted in Pine Groove School witnessed a remarkable difference in attitude towards special educational needs among teachers from different subject departments. The authors found that science department in particular was more negative than other departments. Teachers of the core subjects as a group were also more negative than those of foundation subjects and the more effective subjects. The authors finally concluded that the nature of subjects did have an impact on the delivery of the curriculum. They further discovered that the levels of literacy and numeracy required by any subject were considered to reflect as its suitability for those
with special educational needs. Those subjects that did not rely on these skills were generally seen as being more suitable for these pupils. The authors further believed that support for special educational need from senior management would help to raise its profile within the school. This could take the form of encouraging training in the awareness of and the support of those with special educational needs, targeting both the whole school and the subject-specific requirements. The authors stressed that properly trained subject-specialist teaching assistants might also be helpful both to the quality of support and the status of special educational needs provided the teachers were discouraged from considering all support to be assistant’s responsibility.

**Smith et al., (2005)** observed that relative to students taught conventionally, cooperatively taught students tended to exhibit better grades on common tests, greater persistence through graduation, better analytical, creative and critical thinking skills, deeper understanding of learned material, greater intrinsic motivation to learn and achieve, better relationship with peers, more positive attitude towards subject areas, lower levels of anxiety and stress and higher self-esteem. The authors advocated various guidelines which suggest ways to realize the benefits and avoid the pitfalls of cooperative learning. These included proceeding gradually when using cooperative learning for the first time, form teams for the first time, form teams of 3-4 students for out-of-class assignments, instructor-formed teams generally work better than self-formed teams, give more challenging assignments to teams than to individuals, help students learn how to work effectively in teams, take measures to provide positive interdependence, impose individual accountability in as many ways as possible, allow teams to assess their performance regularly, do not assign course grades on a curve, survey the students after the first six weeks of a course, expect some students to be critically resistant and hostile to cooperative learning.

**Kumar (2007)** while discussing the problems of higher education in India emphasized that there has been a qualitative decrease in the standard of students. The author pointed out that foundation of students seeking admission to university education coming from a higher secondary schools is very week. Also, on account of various
pressures, higher educational institutes are forced to admit substandard students. He suggested that in order to enhance quality of higher education in India, emphasis should be laid on periodical training of teachers to update their knowledge in their respective fields. Author also suggested that higher educational institutes should also concentrate on research activities to improve quality of education.

Ahmed (2008) while discussing the appropriateness of strategic development issues within the United Kingdom higher education sector examined major changes in higher education environment. Survey method was adopted by the author to study the strategic development issues within the UK higher education sector. Academic excellence was noted as very important element in the future as compared with the past. Financial independence was also viewed as very important in the future rather than the past. The author also pointed out that competition for students is expected to increase in future. The findings of the study also reveal that teaching quality and research quality was reported to be consistently very good in old universities as compared to the new universities and higher educational colleges.

Chattopadhay (2009) argued that true assessment of quality of higher education by the students is feasible as they undergo the rigorous process of attending classes and interact with the faculty and their peers and ultimately as they face the market and society. Also, students often lack information to make the right choice of the product and the provider. The author is of the view that in higher education, the quality depends on the quality of the students and teachers and their commitment to excel. Reputed institutions manage to attract more funds and good students. Similarly, they attract the best minds to teach and research. As a consequence, the top institutions remain at the top, and the mediocre ones are at the middle and not-so-good ones are at the bottom. This makes the higher education market intrinsically hierarchical to a large extent. So, the extent to which competition can be conducive for quality improvement remains limited with no major shuffling of the university rankings year after year.
Paul (2009) while studying the internationalization of higher education, pointed out that a vast majority of higher educational institutions in India do not meet international standards of quality and excellence. This, in turn, has negative implications for the acceptance of our degrees and graduates in other countries and markets. The author pointed out that Shangai World Rankings of top 500 universities/institutes include only three Indian Institutes of Technology (IITs) and one Indian Institute of Management (IIM), and that, too, at the lower end. He stated that the problems of quality and standards are linked to a large degree to the weaknesses in the regulatory framework of the higher education. These weaknesses include overload on the regulatory authorities, enforcement failure, overlaps and conflicts between agencies and collusion due to political or other influences. He considered scarcity of funds and shortage of qualified faculty and researchers as other disquieting features of Indian Higher Education Sector.

Rajasekaran & Rajasingh (2009) studied the gap in the quality perceptions of the students of the engineering and management courses, and employers from the industry. 25 criteria for the quality of students and the faculty were designed to examine the perception of criteria for the quality of students and faculty. Investigations revealed that there was wide gap between the perceptions of students and employers on criteria for quality of students especially on learning skills, employment competence and academic preparedness. The gap was reported to be even wider on the criteria for quality of faculty especially on presentation skills and interpersonal skills of the faculty. Authors suggested that policy makers should introduce Indian Educational Services Examination which include the criteria for quality with respect to industry perception to recruit faculty on par with Civil Services Examination.

Total quality Management in education is a timely tool, which must be clearly understood, adopted and implemented as soon as possible. If students are the customers, then the management should know how do they rate the quality of technical education offered to them in their institutions? What is the level of students’ satisfaction of academic performance?
To answer these questions, there is a need for a study which would spell out the critical factors of some effective and efficient quality management systems like TQM, and the methods of implementing them. In order to implement TQM practices, the educational institutions are getting themselves accredited by the ISO certifications. But, the real situation is quite grave since majority of these institutions want to capitalize on these certifications.

Review of literature reveals that worldwide much research has been conducted in the field of TQM implementation in education. After a review of the relevant TQM literature, it has been found that different researchers adopted different TQM definitions and frameworks based on their own understanding of TQM and research objectives. Consequently, there are fewer agreements on what TQM is and what constitutes it in the sphere of education. Also, there is no comprehensive study covering different aspects of Total Quality Management in Education in India, more specifically in Punjab.

The present research is an endeavour to explore the level of quality from the perspective of the educational institutes so as to judge that whether the practices are followed in letter and spirit or not.