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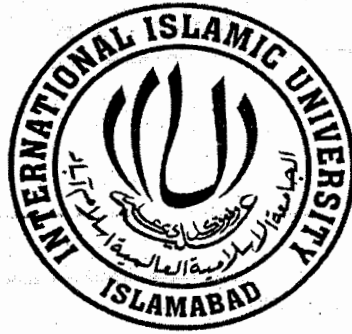
MUHAMMAD ARSHAD DAHAR

36-SS/PHD (EDU)/05

DEPARTMENT OF EDUCATION
FACULTY OF SOCIAL SCIENCES
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A Master level thesis submitted as a pre-requisite of PhD Education

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APPROVAL SHEET

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MUHAMMAD ARSHAD DAHAR
Reg. No 36-SS/PhD (EDU)/05

Accepted by the Department of Education, Faculty of Social Sciences, International Islamic University, Islamabad, Master level thesis as a pre-requisite for PhD Education Degree

Supervisor: _____
(Dr. Maqsood Alam Bokhari)

Internal Examiner: _____
(Dr. Muhammad Munir Kayani)

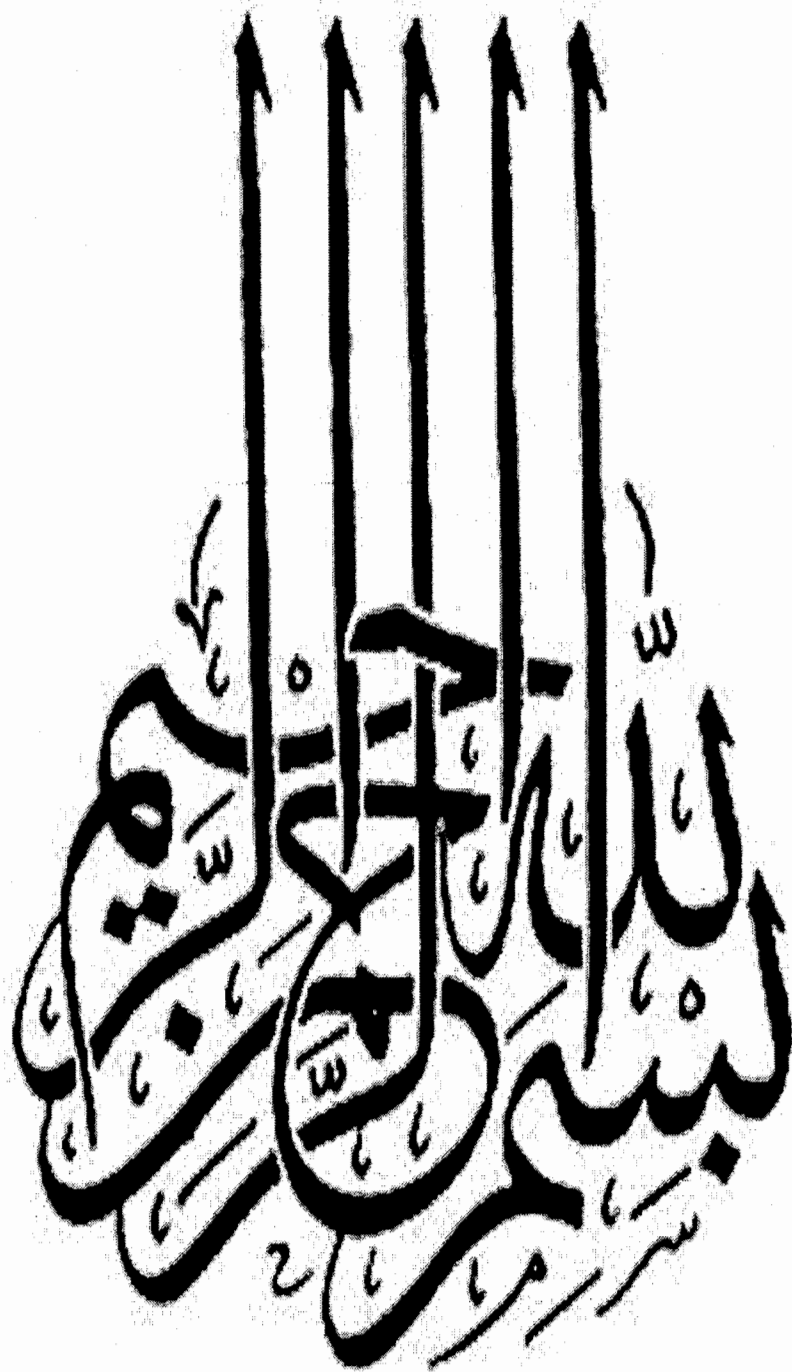Dated: ----------------------------

External Examiner: _____
(Dr. Qudsia Riffat)

Head
Department of Education
International Islamic University
Islamabad

Dean
Faculty of Social Sciences
International Islamic University
Islamabad

بسم الله الرحمن الرحيم

ABSTRACT

Quality is the most important issue in education, business and government. Total quality is a description of the culture, attitude and organization of a company that aims to provide, and continue to provide its customers with products and services that satisfy their needs. Total Quality Management is an approach to the art of management. It includes four principle i.e. synergistic relationship, continuous improvement and self evaluation, a system of ongoing process and leadership of total quality (Mehrotra, 2004). The research was conducted to make a comprehensive case study of the University College of Education Chiniot with reference to Total Quality Management. The study evaluated the present system of teacher's training program in the University College of Education Chiniot and investigated the quality of education in this college. Some information was also collected from the prospectus of the institution.

The entire population comprising one principal, twenty teachers/ trainers and 120 students/ trainees of the B.Ed. Class of the University College of Education, Chiniot was covered in the study. Eighty students were female and forty students were male. Information about the College regarding total quality management was collected through data sheet and three types of questionnaires were administered to the principal, teachers/ trainers and students/ trainees of the University College of Education Chiniot. The data collected were analyzed and

interpreted. Responses were shown in simple percentage form. The study found that most of the facilities were present in the institution. But they were not properly used. The principal, most of the teachers and the students agreed that most of the aspects of total quality were neglected or not followed/ implemented in the college. Total involvement of stake holders (principal, teachers and students), basic facilities and teaching materials produced a satisfactory academic environment to get better examination results but not for Total Quality Management of this teacher training programme. Examination result geared forward of degree but not to specific competencies or skills of the students. Teaching, evaluation, management and discipline were satisfactory in the traditional method but not satisfactory for the Total Quality Management.

ACKNOWLEDGEMENT

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ABREVIATIONS

A.V. Aids: Audio Visual Aids

B.Ed.:   Bachelor of Education

B.S.:   British (Quality Management) Standards

B.S.Ed.:   Bachelor of Science Education

CAD: Computer Aided Design

EDM: Enterprise Data Management software,

EN: European Equivalent (Standards)

ISO: International Organization for Standardization

M.A.:   Master of Arts

M.Sc.:   Master of Science

NWTs: Natural Work Teams

PDM: Product Data Management

PSTs: Problem Solving Teams

QITs: Quality Improvement Teams

SPC: Statistical Process Control

TOPS: Team Oriented Problem Solving

TQM: Total Quality Management

UK: United Kingdom

The quality of education will improve only when, administrators, teachers, staff and school board members develop new attitudes that focus on leadership, ream work, co-operation, accountability and recognition. Whenever member of the organization will keep in his mind the issue that quality is customer focus. There must be total involvement in the quality transformation. Staff must be committed to quality. Schools must do things better tomorrow than they did yesterday. (p. 34)

TQM is a management approach that originated in the fifties and has steadily become more popular since the early eighties. Total quality is a description of the culture, attitude and organization of a company that strives to provide customers with products and services that satisfy their needs. The culture requires quality in all aspects of the company's operations, with processes being done right the first time and defects and waste eradicated from operations. It is a method by which management and employees can become involved in the continuous improvement of the production of goods and services. It is a combination of quality and management tools in order to increase business and reduce losses due to wasteful practices.

The latest changes coming up for the ISO 900:2000 standard's "Process Model" seems to complete the embodiment. TQM is the concept that quality can be managed and that it is a process. Quality demands in every field of life. When someone enters a market or a shop to buy something; first he checks the quality of the product. Product comprises of better quality prevails in the market. Quality in education is also substantive for the betterment of the society as a whole. Students are graduating from colleges and universities but no achievement of these graduates in the society. Those who are already doing the job can not meet the demands of the society. Especially the teacher training/ education colleges are the most important in enhancing the quality of education.

According to the National Educational Policy 1998-2010, the quality of education is directly related to the quality of instruction in the classrooms. Moreover, quality of education is one of the objective/ target of the objectives/ targets of Perspective Development Plan 2001-2011. It is considered that teacher is the most critical factor in the entire education system because he implements all educational reforms at the gross root level. With the focus of "Education for All", the teacher education system has produced equilibrium between demand and supply but qualitative dimension of teacher education has received no much attention resulting in mass production of teachers with low level of understanding of both the content and methodology. Putting this horrible notion in our minds as a threat, the researcher conducted the study with reference to TQM in the University College of Education Chiniot.

1.1 STATEMENT OF THE PROBLEM

The purpose of this research was to study the University College of Education Chiniot with reference to Total Quality Management.

1.2 OBJECTIVES OF THE STUDY

1. To identify the existing facilities of the University College of Education Chiniot, including building, boundary wall, hostel, electricity, A.V. aids room, library, science laboratory, water supply, hand pumps, transportation and play ground etc.

2. To identify the quality of the principal and the teachers.

3. To identify the marks of students in the final examination.

4. To evaluate the present system of teacher's training program in the University College of Education Chiniot.

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1.3 SIGNIFICANCE OF THE STUDY

1. The study will help the educationists and experts to improve their quality in education. They will also attain awareness about how quality in education can be improved.

2. The study will guide the principals and also the teachers of the education colleges to improve all aspects of quality.

3. The study will provide guidance to the under training teachers/ students/ trainees how they can improve their competencies and abilities.

   The study will improve resource management in the educational institutions and will lead to the optimal use of resources and cost effectiveness.

1.4 DELIMITATION OF THE STUDY

1. The study was limited to the students of B.Ed. class due to the absence of other classes and paucity of time.

2. The study based on four principles of TQM (indicators) developed by Mehrotra (2004) i.e. synergistic relationship, continuous improvement and self evaluation, a system of ongoing process and leadership.

CHAPTER 2

REVIEW OF LITERATURE

2.1 WHAT IS QUALITY?

Quality is a structured process for improving the output produced. It is neither magical nor complex. Quality is based on common sense. Dr. W. Edward Deming's quality management philosophy was developed out of a necessity to improve the working conditions for every employee. When Deming began his career in the 1920's he encountered a management environment that thrived on fear. This environment exists in many of our schools today. Quality focuses on the positive efforts put forth by an individual. In the 1920's an employee could work all the day and not receive any pay because the assembly line did not produce marketable product. Using the quality methodology, every work system can be divided into a series of work processes.

Each work series is a unique process that contributes to the creation of the output. In a quality school, a quality standard is established for each work-series with the over all work process. If the worker achieves the quality standard for each work series, the end result is a quality product. Quality is the most important topic of discussion in education today. There are probably as many different ideas about

quality as there are schools. Quality is creating an environment where educators, parents, government, officials, community representatives and business leaders work together to provide students with the resources they need to meet and future academic, business and societal challenges.

2.2 HISTORY OF QUALITY

Deming is generally recognized as the "father of quality". Deming received his PhD in mathematics and physics from Yale University. He was the first introduced to the basic tents of traditional management principles in the late 1920's, as a summer employee at western electric's famous Hawthorne plant in Chicago. This experience led him to ask "How can firms best motivate their employees". Deming found the traditional motivation system in use at the time to be degrading and economically unproductive. Under that system, work incentives were linked piecework to maximize worker output, followed by an inspection process in which defective items were subtracted from the worker's piece work credits. During the World War II, Deming got his opportunity to demonstrate to the government hold Shewhart's statistical quality control methods could be taught to workers and put into practice in our nation busy war plants. At the conclusion of the World War II, Deming left government service and set up a private consulting practice. The state department, one of his early clients, sent Deming to Japan in 1947 to help prepare a national census in that country. American managers soon forgot their war time quality control lessons and returned to their prewar love affair with traditional management, practices. Deming's philosophy is prone to quality in human terms. When a firm's work force is committed to doing a good job and has a solid managerial process in which to act, quality will flow naturally.

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2.3 DEFINITION OF QUALITY

A more practical, composite definition of quality is "Quality is predictable degree of variation for adopted standards and dependability at lowest cost and it is customer driven and market focused". The methodological core of Deming's quality management approach is the use of simple statistical techniques to continuously improve output. Only through statistical verification can the manager know that he or she has a problem and find the causes of the problem. School board members and administrators must make the pursuit of quality an educational goal. Emphasis should be placed on preventing students from failing instead of detecting failure after the fact. The use of statistical control methods, if rigorously applied, can help to improve administrative and student outcomes.

Juran is also recognized as one of the "fathers of Quality". Juran received his education in engineering and law. Like Deming, Juran was also a distinguished statistician. Juran defined quality as "Fitness for use" and maintained that the basic quality mission of a school was "to develop programs and services that meet the needs of the user, i.e. student and society". Further more, Juran stated that "Fitness for use" was properly determined from the view point of the user as opposed to the provider".

The focal point of Juran's quality management philosophy was the organization's belief in the productivity of the individual. According to Juran, quality is ensured by making sure that each individual has the building blocks necessary to do his or her job properly. With proper tools, workers produce products and services that consistently meet customer expectations. Like Deming, Juarn also played a significant role in the rebuilding Japan after World War II. He was recognized by the Japanese for the development of quality control in Japan and the facilitation of a

friendship between the United States and Japan. His search for the underlying principles of the management process led to his focus on quality as the ultimate goal. To Juran's (1960), the pursuit of quality is never ending process. Quality improvement is an ongoing process, not a one's shot program. Quality requires hands on leadership by school board, members and administrators. Massive Training is prerequisite of Quality. Everyone in the school must be trained.

2.4 DR DEMING'S 14 POINTS "ESSENCE OF QUALITY IN EDUCATION"

Arcaro (1995) described Deming's 14 Points "Essence of Quality in Education".

2.4.1 Create a Constancy of Purpose

Create a constancy of purpose to improve student and service quality, with the aim to become competitive with world class schools.

2.4.2 Adopt a Total Quality Philosophy

Education in a highly competitive environment and is viewed as one of the major reasons why America is losing its competitive advantage. School systems must welcome the challenge to compete in a global economy. Every member of the Education system must learn the new skills that support the quality revolution. People must be willing to accept the quality challenge. Every one must learn to operate more efficiency and productively. Everyone must subscribe to the principles of quality.

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2.4.3 Reduce the Need for Testing

Reduce the need for testing and inspection on a mass basis by building quality into education services. Provide a learning environment that result in quality into education services. Provide a learning environment that result in quality student performance.

2.4.4 Award School Business in New Way

Award School business in ways minimizes the total cost to education. Think of schools as suppliers of students from one grade level to the next. Work with parents and agencies to improve the quality of the students coming into the system.

2.4.5 Improve Quality and Productivity, and thus Reduce Costs.

Improve quality and productivity, and thus reduce costs by instituting a "chart it/check it / change it".

2.4.6 Life Long Learning

Quality begins and ends with training. If it is expected from people to change the things to do, it is necessary to provide them with the tools necessary to change their work processes. Training provides people with the tools necessary to improve their work processes.

2.4.7 LEADERSHIP IN EDUCATION

It is management's responsibility to provide direction. Managers in education must develop a vision and mission statement for the school or department. The vision

and mission must be shared and supported by the teachers, staff, students, parents and community.

2.4.8 Eliminate Fear

Drive fear out of the school or department so that every one works effectively for the school improvement. Create an environment that encourages people to speak freely.

2.4.9 Eliminate the Barriers to Success

Break down barriers between departments: Management is responsible for breaking down barriers that prevent people from succeeding in their work. People in teaching, special education, accounting, food services, administration, curriculum development, research and other groups must work as a team. Development strategies- move from competition with other groups to collaboration, move from a win lose resolution to a win-win resolution, move from isolated problem solving to share problem solving, move from guarding information to sharing information, move from resting change to welcoming change.

2.4.10 Create a Quality Culture

Create a quality culture. Do not let the movement become dependent upon any one individual or group of individuals. Creating a quality culture is everyone's Responsibility.

2.4.11 Process Improvement

No process is ever perfect; therefore, finding a better way, a better process applies equally and non-judgmentally. Finding solutions takes precedence over finding fault. Recognize people and group that make improvement happen.

2.4.12 Help Students Succeed

Remove the barriers that rob students, teachers and administrators of their right to pride of workmanship. People must want to be involved and do their jobs well. The responsibility of all education administrators must be changed from quantity to quality.

2.4.13 Commitment

Management must be committed to a quality culture. Management must be willing to support the introduction of new ways of doing things in to the education system. Management must back up goals by providing the means to achieve those goals or risk generating resentment with in the system. "Do it right the first time" is a lofty goal. Employees become frustrated when management does not understand their problems in achieving a goal or does not care enough to find out abut them.

2.4.14 Responsibility

Put everyone in the school to work to accomplish the Quality Transformation's Transformation is everyone's job.

2.5 PILLARS OF QUALITY

Arcaro (1995) developed five pillars of quality. Initially, a quality schools has five characteristics, identified as the "the Pillars of Quality". As school develops a quality philosophy, five additional characteristics of a quality school may be identified. These pillars are based on the school's beliefs such as trust, co-operation and leadership. Quality in education requires a commitment to customer satisfaction and a commitment to creating an environment in whish staff and students can develop a total quality school. Therefore it is necessary to understand what each pillar represents.

2.5.1 Customer Focus

In a total quality school, everyone is both a customer and supplier. The school customers are basically students and their families, or big customers. They are the main beneficiaries of school work. Parents are initially classified as big customers of their concern for their child's education. However, as the students mature, the parents make the transition to little customers. This allows the students to take more responsibility for his or her education. Schools have both internal and external customers. Internal customers are the parents, students, teachers, administrators, staff and school board. They are with in the education system. External customers are society, employees, families, the military and higher education. They are external to the organization. However, they use the out put of the education process.

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2.5.2 Total Involvement

Everyone must participate in the quality transformation. Quality is not just the school board or superintendents (Head) responsibility. It is everyone's responsibility. Quality demands that every one contribute to the quality effort.

2.5.3 Measurement

What that can not be measured can not be improved. Schools can not meet the quality standards established by society unless they have a vehicle for measuring progress towards achieving those standards. Students use test scores to measure their progress in a class communities use school budgets to measure efficiency of school processes.

2.5.4 Continuous Improvement

School must do things better tomorrow than they did yesterday or do today. Educational professionals must constantly be on the look out for ways to prevent problems from occurring; they must correct process problems as they develop and make improvements.

2.5.5 Commitment

Total quality requires that every personnel of the organization should be committed to his work.

2.6 IMPLEMENTING QUALITY IN THE CLASS ROOM

To Arcaro (1995), the implementation of quality techniques provides the tools which are needed to change classroom from a teacher centered focus to a learning/student centered focus. How is this accomplished? Take a long, hard look at classroom.

1. Are the desks lined up in straight rows?

2. Is desk at the front of the room?

3. Do teachers sit at his/ her desk most of the time?

4. Do teachers lecture from the podium at the front of the room?

5.   Are materials accessible only to teachers?

6. Is there an emphasis on individual worksheets?

7. Is covering the curriculum the most important goal?

8. Do students complain of being bored?

9. Do teachers develop and impose disciplinary procedures?

10. Do teachers close the door to "outsiders"?

11. Do teachers discourage interactions between yourself and your students?

If answer is yes to all or most of these questions, it is a teacher central classroom.

To change classroom from a teacher centered classroom to a students centered classroom, it is to gain the practical knowledge that is needed to implement quality in classroom. Teachers have developed model class rooms for elementary, middle and High schools, and the results have been astounding. Disciplinary problems have been

reduced, student performance has improved and safe learning and working environments has been created.

2.6.1 Classroom Design

One of the easiest and most effective ways to change the focus of the classroom is to change the arrangement of the furniture. If possible, get rid of the desks and bring in tables. Arrange the tables in a large circle or in groups of four facing each other. Remember, the furniture is not bolted to the floor in one position. It is necessary to use it to facilitate what is to be done. Move the furniture around explaining why the furniture is arranged in a particular way makes it easier for the students to accept the change. The arrangement of the furniture sets the tone of the classroom and serves as a visual reminder of the new focus on the students and on learning. In the quality classroom, the expectation, that all students will work together in cooperation and support one another is supported and encouraged by the physical layout. Teachers who have visited a quality classroom remark positively on the layout, which allows for whole group, small group and individual work areas.

2.6.2 Curricular Issues

The atmosphere or climate in the classroom is equally important. Many teachers say something like, "We have to cover this chapter by Friday?" These words reveal a teacher centered classroom where the students are secondary to the curriculum. The learning centered class room gives primary consideration to the need of each student.

2.6.3 Evaluation Process

The students are the part of evaluation process as well evaluation must extend beyond the traditional tests which only evaluate how many facts can be spewed back. Evaluation must begin to consider process as well as product students must begin to take responsibility for assessing how much they have really learned, how they can apply this knowledge, and where improvements can be made. Only the individual really knows how much he or she has learned. In a quality classroom, students debated not the issue of what was learned, but the fairness of this grade. Some maintained that the student had "failed" the last test. Other said that it was unfair to be marked on something that happened outside of school. Others maintained that the students had cheated on the previous tests. Only a few agreed with the teacher that the student had not learned is to have them help determine the criteria by which they will be graded. Students can also be involved in evaluating their own work as well as that of other.

2.6.4 Discipline Issue

There are causes which are within our control and those which are not. We must have the wisdom to know the difference so we can concentrate on those things which we are able to change. Think again about how a student centered classroom would look and feel. Which of the following statement applies to a specific classroom?

1. The furniture is arranged to facilitate group interactions.

2. Students rearrange furniture to suit projects.

3. All equipments are readily accessible.

4. Every one respects the property of others.

5. I am supportive and empathetic toward troubled students.

6. The students are interested in what they are doing.

7. The students take responsibility for their action.

8. The classroom is a safe place for all students.

2.6.5 The Teacher (Personal Change)

Teachers are the mediators who provide or fail to provide the essential experiences that permit students to release their awesome potential. No child learns to walk without first crawling. The first steps are tentative, the security of a hand to hold helps to build confidence. But always there are falls, tears and hurts. Implementing a new attitude and approach to teaching is much like learning to walk. Failure will happen. It is important to build a support system. Talk to other teachers. Learn what went wrong and find out to make it right. Slow and steady improvement is the key.

There is no magic wand or magic words that produce instant results. The foundation of proficiency and competency is the implementation of quality continuously. Teachers have limited control over time, curriculum, resources and learning styles but can control the physical layout of the classroom, the attitudes that are both modeled and encouraged and the methods that are used.

2.6.6 Personal Involvement

Quality welcomes the involvement of parents in the classroom on problem terms and as equal partners in the educational process. We can encourage parents to support education. Teachers can open the doors to the building and the classroom.

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Teachers can encourage communication and understanding of mutually supportive roles in the lives of the students. Parents and the community can not be left in the dark in terms of what happens in the classroom. A letter sent home at the beginning of the year is helpful to establish communication. Quality is vastly different approach to education. Everyone has gone to school, and thus everyone is an "expert". Not only do students and staff need training and knowledge about quality, but communication with parents is essential for success. Some parents may by virtue of their employment, be involved with quality. These parents can be valuable resources. It is, however, important to recognize the differences between the cultures of education and business.

Teachers have extensive contact with parents most positive, some negative. It is easy to fall into an adverse position when a parent storms into a classroom and angrily complains that his or her child got a failing grade or was unfairly treated or the list goes on and on. It is easy to become angry when parents or community members complains about teacher salaries and cite the problems in education. The quality approach does not point fingers or place blame. Quality can have far reaching effects on students and their parents. The problem solving approaches equally emphases in providing optimum learning opportunities and student responsibility. One parent angrily called a teacher to complain that her daughter was not doing well in class. The teacher, parent, and student met to define the problem. The student began and listed a number of things which the teacher perceived as presenting difficulty. They all reached consensus on defining the problem. They prioritized the solutions and determined the most appropriate one for the student as well as the teacher. The student and the teacher both saw the other's point of view and each made some concessions. The outcome of this session was that the student's attitude

and performance improved. The parent started allowing the student more freedom to make decisions and adopted a less active role as advocate for her daughter.

2.7 WHAT IS TOTAL QUALITY MANAGEMENT?

Total quality Management (TQM):

Total = Quality involves everyone and all activities in the company.

Quality = Conformance to Requirements (Meeting Customer Requirements).

Management = Quality can and must be managed.

TQM = A process for managing quality; it must be a continuous way of life; a philosophy of perpetual improvement in everything we do.

Total quality recognizes that each person is responsible for the quality of his/ her work and for the work of the group. Total quality is more than an attempt to make better products; it is also a search for better ways to make better products.

Hashmi (1994) says that TQM is a management that approaches that originated in the 1950's and has steadily become more popular since the early 1980's. Total quality is a description of the culture, attitude and organization of a company that strives to provide customers with products and services that satisfy their needs. The culture requires quality in all aspects of the company's operations, with processes being done right the first time and defects and waste eradicated from operations.

TQM is a method by which management and employees can become involved in the continuous improvement of the production of goods and services. It is a combination of quality and management tools aimed at increasing business and reducing losses due to wasteful practices. Some of the companies who have

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implemented TQM include Ford Motor Company, Phillips Semiconductor, SGL Carbon, Motorola and Toyota Motor Company.

According to Hashmi (1994), TQM is a management philosophy that seeks to integrate all organizational functions (marketing, finance, design, engineering, and production, customer service, etc.) to focus on meeting customer needs and organizational objectives.

TQM views an organization as a collection of processes. It maintains that organizations must strive to continuously improve these processes by incorporating the knowledge and experiences of workers. The simple objective of TQM is "Do the right things, right the first time, every time". TQM is infinitely variable and adaptable. Although originally applied to manufacturing operations, and for a number of years only used in that area, TQM is now becoming recognized as a generic management tool, just as applicable in service and public sector organizations. There are a number of evolutionary strands, with different sectors creating their own versions from the common ancestor. TQM is the foundation for activities which include:

1. Commitment by senior management and all employees

2. Meeting customer requirements

3. Reducing development cycle times

4. Just In Time/Demand Flow Manufacturing

5. Improvement teams

6. Reducing product and service costs

7. Systems to facilitate improvement

8. Line Management ownership

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9. Employee involvement and empowerment

10. Recognition and celebration

11. Challenging quantified goals and benchmarking

12. Focus on processes / improvement plans

13. Specific incorporation in strategic planning

This shows that TQM must be practiced in all activities, by all personnel, in manufacturing, marketing, engineering, R & D, sales, purchasing, HR, etc. Total quality also implies a different type of worker and a different attitude toward the worker from management. Under total quality, workers are generalists, rather than specialists both workers and managers are expected to move from job to job, gaining experience in many areas of the company.

Adopting the total quality philosophy commits the company to the belief that there is always a better way of doing things, a way to make better use of the company's resources, and a way to be more productive. In this sense, total quality relies heavily upon value analysis as a method of developing better products and operations in order to maximize valued to the stake holder, whether customers, employees or shareholders. Only by a devotion to quality throughout the organization can the best possible products be made or as stated by Kano (1995) that quality is too important to be left to inspectors.

The main focus of total quality is on why. It goes beyond the how to include the why. It is an attempt to identify the causes of defects in order to eliminate them. It is a continuous cycle of detecting defects, identifying their causes and improving the process so as to totally eliminate the causes of defects.

2.8 HISTORY OF TOTAL QUALITY MANAGEMENT

About the year one billion B.C. give or take a few centuries, man first began to fashion stone tools for hunting and survival up until 8000B. C. However very little progress was made in the quality control of these tools. It was at this time that man began assembling instruments with fitting holes, which suggests the use of interchangeable parts on a very limited basis. Throughout his long period, each man made his own tools. The evidence of quality control was measured to some extent by how long he stayed alive. If the tools were well made, his chances of survival increased. A broken axe handle usually speeled doom a little over 200 years ago in 1787, the concepts of interchangeable parts and division of labor was first introduced in the United States

Eli Whitney, inventor of the cotton gin, applied these concepts to the production of 10,000 flintlock riffles for the US military arsenal. However, Whitney had considered difficulty in making all the parts exactly the same. It took him ten years to complete the 10,000 muskets that he promised to deliver in two years.

During the early part of the twentieth century, a tremendous increase in quality consciousness occurred. What were the forces at work that caused this sudden acceleration of interest in the application of statistical quality control? There were at least three key factors. The first was rapid growth in standardization, beginning in 1900. The second major factor ushering in the new era was radical shift in ideology, which occurred in about 1900. The third factor was the evolution of division of labor into the factory system and the first assembly line system of the early twentieth century. These systems proved to be ideal for employing an immigrant workforce quickly.

Important aspects of TQM include customer-driven quality, top management leadership and commitment, continuous improvement, fast response, actions based on facts, employee participation, and a TQM culture.

2.9.1 Customer-driven Quality

TQM has a customer-first orientation. The customer, not internal activities and constraints, comes first. Customer satisfaction is seen as the company's highest priority. The company believes it will only be successful if customers are satisfied. The TQM Company is sensitive to customer requirements and responds rapidly to them. In the TQM context, 'being sensitive to customer requirements' goes beyond defect and error reduction, and merely meeting specifications or reducing customer complaints. The concept of requirements is expanded to take in not only product and service attributes that meet basic requirements, but also those that enhance and differentiate them for competitive advantage. Each part of the company is involved in total quality, operating as a customer to some functions and as a supplier to others. The Engineering Department is a supplier to downstream functions such as Manufacturing and Field Service, and has to treat these internal customers with the same sensitivity and responsiveness as it would external customers.

2.9.2 Total Quality Management Leadership from Top Management

TQM is a way of life for a company. It has to be introduced and led by top management. This is a key point. Attempts to implement TQM often fail because top management doesn't lead and get committed instead it delegates and pays lip service. Commitment and personal involvement is required from top management in creating and deploying clear quality values and goals consistent with the objectives of the

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company, and in creating and deploying well defined systems, methods and performance measures for achieving those goals. These systems and methods guide all quality activities and encourage participation by all employees. The development and use of performance indicators is linked, directly or indirectly, to customer requirements and satisfaction, and to management and employee remuneration.

2.9.3 Continuous Improvement

Continuous improvement of all operations and activities is at the heart of TQM. Once it is recognized that customer satisfaction can only be obtained by providing a high-quality product, continuous improvement of the quality of the product is seen as the only way to maintain a high level of customer satisfaction. As well as recognizing the link between product quality and customer satisfaction, TQM also recognizes that product quality is the result of process quality. As a result, there is a focus on continuous improvement of the company's processes. This will lead to an improvement in process quality. In turn this will lead to an improvement in product quality, and to an increase in customer satisfaction. Improvement cycles are encouraged for all the company's activities such as product development, use of EDM/ PDM, and the way customer relationships are managed. This implies that all activities include measurement and monitoring of cycle time and responsiveness as a basis for seeking opportunities for improvement.

Elimination of waste is a major component of the continuous improvement approach. There is also a strong emphasis on prevention rather than detection, and an emphasis on quality at the design stage. The customer-driven approach helps to prevent errors and achieve defect-free production. When problems do occur within

the product development process, they are generally discovered and resolved before they can get to the next internal customer.

2.9.4 Fast Response

To achieve customer satisfaction, the company has to respond rapidly to customer needs. This implies short product and service introduction cycles. These can be achieved with customer-driven and process-oriented product development because the resulting simplicity and efficiency greatly reduce the time involved. Simplicity is gained through concurrent product and process development. Efficiencies are realized from the elimination of non-value-adding effort such as re-design. The result is a dramatic improvement in the elapsed time from product concept to first shipment.

2.9.5 Actions Based on Facts

The statistical analysis of engineering and manufacturing facts is an important part of TQM. Facts and analysis provide the basis for planning, review and performance tracking, improvement of operations, and comparison of performance with competitors. The TQM approach is based on the use of objective data, and provides a rational rather than an emotional basis for decision making. The statistical approach to process management in both engineering and manufacturing recognizes that most problems are system-related, and are not caused by particular employees. In practice, data is collected and put in the hands of the people who are in the best position to analyze it and then take the appropriate action to reduce costs and prevent non-conformance. Usually these people are not managers but workers in the process. If the right information is not available, then the analysis, whether it be of shop floor

data, or engineering test results, can't take place, errors can't be identified, and so errors can't be corrected.

2.9.6 Employee Participation

A successful TQM environment requires a committed and well-trained work force that participates fully in quality improvement activities. Such participation is reinforced by reward and recognition systems which emphasize the achievement of quality objectives. On-going education and training of all employees supports the drive for quality. Employees are encouraged to take more responsibility, communicate more effectively, act creatively, and innovate. As people behave the way they are measured and remunerated, TQM links remuneration to customer satisfaction metrics.

2.9.7 A Total Quality Management Culture

It's not easy to introduce TQM. An open, cooperative culture has to be created by management. Employees have to be made to feel that they are responsible for customer satisfaction. They are not going to feel this if they are excluded from the development of visions, strategies, and plans. It's important they participate in these activities. They are unlikely to behave in a responsible way if they see management behaving irresponsibly - saying one thing and doing the opposite.

2.9.8 Product Development in a Total Quality Management Environment

Product development in a TQM environment is very different to product development in a non-TQM environment. Without a TQM approach, product development is usually carried on in a conflictual atmosphere where each department

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acts independently. Short-term results drive behavior so scrap, changes, work-around, waste, and rework are normal practice. Management focuses on supervising individuals, and fire-fighting is necessary and rewarded. Product development in a TQM environment is customer-driven and focused on quality. Teams are process-oriented, and interact with their internal customers to deliver the required results. Management's focus is on controlling the overall process, and rewarding teamwork.

2.9.10 Awards for Quality Achievement

The Deming Prize has been awarded annually since 1951 by the Japanese Union of Scientists and Engineers in recognition of outstanding achievement in quality strategy, management and execution. Since 1988 a similar award (the Malcolm Baldrige National Quality Award) has been awarded in the US. Early winners of the Baldrige Award include AT&T (1992), IBM (1990), Milliken (1989), Motorola (1988), Texas Instruments (1992) and Xerox (1989).

2.10 A FEW WORDS ABOUT ISO 9000

ISO 9001 is one of a series of three international standards for quality systems that can be used for external quality assurance purposes. These standards specify quality system requirements for use where a contract between two parties requires the demonstration of a supplier's capability. Quality system requirements are defined for three types of supplier activity:

ISO 9001 is a model for quality assurance systems in design, development, production, installation and servicing. It is appropriate when conformance to specified requirements is to be assured by the supplier during several phases of

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activity which may include design, development, production, installation and servicing. ISO 9002 is a model for quality assurance systems in production and installation. It is appropriate when conformance to specified requirements is to be assured by the supplier during production and installation.

ISO 9003 is a model for quality assurance systems in final inspection and test. It is appropriate when conformance to specified requirements is to be assured by the supplier solely at final inspection and test. ISO 9001 is applicable when the contract between the two parties specifically requires design and/or development effort and the product requirements are stated principally in performance terms or they need to be established, and confidence in product conformance can be attained by adequate demonstration of some of the supplier's capabilities in design, development, production, installation, and servicing. The quality system requirements of ISO 9001 are aimed at preventing nonconformity at all phases of the product life cycle from design and/or development through servicing. These requirements are complementary to the technical specifications of the product. They do not replace the technical requirements, and are not an alternative to them.

When an organization's quality system has been assessed against ISO 9001, ISO 9002 or ISO 9003 by an accredited independent certification body, then the quality system is registered, and can be used as evidence of quality assurance in tendering for contracts. Quality systems produced in accordance with these quality system requirements are subject to regular third party assessment based on documented, objective evidence of compliance.

The ISO 9000 series of standards, and their European equivalent (EN 29000), are derived from the British quality management standard (BS 5750) which was built

on a military standard, the UK Ministry of Defence's Def Stan 0521. Increasingly, large companies are insisting that suppliers should be accredited. Dealing with accredited suppliers provides them with a sense of security, and reduces the effort required to control the supplier's products. From the supplier's point of view, accreditation provides a quality image, customer confidence, and access to markets where quality certification is obligatory. In addition, the introduction of a quality management system may have a major effect on internal performance. The accreditation process usually takes between one and two years. ISO 9001 quality system requirements are detailed in the standard in the following sections:

Management responsibility

Quality system

Contract review

Design control

Document control

Purchasing

Purchaser supplied product

Product identification and traceability

Process control

Inspection and testing

Inspection, measuring and test equipment

Inspection and test status

Control of nonconforming product

Corrective action

Handling, storage, packaging and delivery

Quality records

Internal quality audits

Training

Servicing

Statistical techniques

Within each of these sections, there are generally several sub-sections. For example, the section on Management responsibility has the following sub-sections - Quality policy, Organization, and Management review. Within the sub-section on Quality policy, the standard states that the supplier's management shall define and document its policy and objectives for quality and its commitment to quality, and that the supplier shall ensure that this policy is understood, implemented and maintained at all levels in the organization.

Within the section on Design control, there are sub-sections entitled General, Design and development planning, Design input, Design output, Design verification, and Design changes. Within the section on Document control, there are sub-sections entitled Document approval and issue, and Document changes/ modifications. Within the sub-section Document approval and issue, the standard states that the supplier shall establish and maintain procedures to control all documents and data that relate to ISO 9001 requirements. Much of this information is made up of engineering documents and data - precisely the data that an EDM/ PDM system manages. Within the sub-section Document changes/modifications, the standard states that changes to documents shall be reviewed and approved by the same functions/organizations that performed the original review and approval unless specifically designated otherwise. Again, there is a connection to EDM/ PDM systems, this time to the workflow control functions.

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An EDM/ PDM system can provide rapid, secure and accurate availability, access and dissemination of engineering information to support ISO 9001 requirements. It can manage the changes to this information, and ensure application of procedures. The latest changes coming up for the ISO 9001:2000 standard's "Process Model" seem to complete the embodiment. TQM is the concept that quality can be managed and that it is a process. The following information is provided to give an understanding of the key elements of this process.

2.11 TQM COMPARED TO ISO 9001

To Dexter A. Hansen, ISO 9000 is a Quality System Management Standard. TQM is a philosophy of perpetual improvement. The ISO Quality Standard sets in place a system to deploy policy and verifiable objectives. An ISO implementation is a basis for a TQM. Where there is an ISO system, about 75 percent of the steps are in place for TQM. The requirements for TQM can be considered ISO plus. Another aspect relating to the ISO Standard is that the proposed changes for the next revision (1999) contain customer satisfaction and measurement requirements. In short, implementing TQM is being proactive concerning quality rather than reactive.

2.12 TOTAL QUALITY MANAGEMENT AS A FOUNDATION

TQM is the foundation for activities which include:

Meeting Customer Requirements

Reducing Development Cycle Times

Just In Time/ Demand Flow Manufacturing

Improvement Teams

Reducing Product and Service Costs

2.13 TEN STEPS TO TOTAL QUALITY MANAGEMENT

Pursue New Strategic Thinking

Know your Customers

Set True Customer Requirements

Concentrate on Prevention, Not Correction

Reduce Chronic Waste

Pursue a Continuous Improvement Strategy

Use Structured Methodology for Process Improvement

Reduce Variation

Use a Balanced Approach

Apply to All Functions

2.14 STEPS FOR INTRODUCTION AND IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT

Processes must be managed and improved! This involves:

Defining the process

Measuring process performance (metrics)

Reviewing process performance

Identifying process shortcomings

Analyzing process problems

Making a process change

Measuring the effects of the process change

Communicating both ways between supervisor and user

2.15 PRINCIPLES OF TOTAL QUALITY MANAGEMENT

Hashmi (1994) gives key principles of TQM as following:

- Management Commitment

    1. Plan (drive, direct)

    2. Do (deploy, support, participate)

    3. Check (review)

    4. Act (recognize, communicate, revise)

- Employee Empowerment

    1. Training

    2. Suggestion scheme

    3. Measurement and recognition

    4. Excellence teams

- Fact Based Decision Making

    1. SPC (statistical process control)

    2. The 7 statistical tools

    3. TOPS (Team Oriented Problem Solving)

- Continuous Improvement

    1. Systematic measurement

    2. Excellence teams

    3. Cross-functional process management

    4. Attain, maintain, improve standards

- Customer Focus

    1. Supplier partnership

    2. Service relationship with internal customers

3. Never compromise quality

4. Customer driven standards

2.16 THE CONCEPT OF CONTINUOUS IMPROVEMENT BY TOTAL QUALITY MANAGEMENT

TQM is mainly concerned with continuous improvement in all work, from high level strategic planning and decision-making, to detailed execution of work elements on the shop floor. It stems from the belief that mistakes can be avoided and defects can be prevented. It leads to continuously improving results, in all aspects of work, as a result of continuously improving capabilities, people, processes, and technology and machine capabilities. Continuous improvement must deal not only with improving results, but more importantly with improving capabilities to produce better results in the future. The five major areas of focus for capability improvement are demand generation, supply generation, technology, operations and people capability.

A central principle of TQM is that mistakes may be made by people, but most of them are caused, or at least permitted, by faulty systems and processes. This means that the root cause of such mistakes can be identified and eliminated, and repetition can be prevented by changing the process.

2.17 THREE MAJOR MECHANISMS OF PREVENTION

Preventing mistakes (defects) from occurring (Mistake proofing or Poka-Yoke). Where mistakes can't be absolutely prevented, detecting them early to prevent them being passed down the value added chain (Inspection at source or by the next

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operation). Where mistakes recur, stopping production until the process can be corrected, to prevent the production of more defects. (Stop in time).

2.18 IMPLEMENTATION PRINCIPLES AND PROCESSES

A preliminary step in TQM implementation is to assess the organization's current reality. Relevant preconditions have to do with the organization's history, its current needs, precipitating events leading to TQM, and the existing employee quality of working life. If the current reality does not include important preconditions, TQM implementation should be delayed until the organization is in a state in which TQM is likely to succeed.

If an organization has a track record of effective responsiveness to the environment, and if it has been able to successfully change the way it operates when needed, TQM will be easier to implement. If an organization has been historically reactive and has no skill at improving its operating systems, there will be both employee skepticism and a lack of skilled change agents. If this condition prevails, a comprehensive program of management and leadership development may be instituted. A management audit is a good assessment tool to identify current levels of organizational functioning and areas in need of change. An organization should be basically healthy before beginning TQM. If it has significant problems such as a very unstable funding base, weak administrative systems, lack of managerial skill, or poor employee morale, TQM would not be appropriate.

However, a certain level of stress is probably desirable to initiate TQM. People need to feel a need for a change. Kanter (1983) addresses this phenomenon be describing building blocks which are present in effective organizational change.

These forces include departures from tradition, a crisis or galvanizing event, strategic decisions, individual "prime movers," and action vehicles. Departures from tradition are activities, usually at lower levels of the organization, which occur when entrepreneurs move outside the normal ways of operating to solve a problem. A crisis, if it is not too disabling, can also help create a sense of urgency which can mobilize people to act. In the case of TQM, this may be a funding cut or threat, or demands from consumers or other stakeholders for improved quality of service. After a crisis, a leader may intervene strategically by articulating a new vision of the future to help the organization deal with it. A plan to implement TQM may be such a strategic decision. Such a leader may then become a prime mover, who takes charge in championing the new idea and showing others how it will help them get where they want to go. Finally, action vehicles are needed and mechanisms or structures to enable the change to occur and become institutionalized.

2.19 STEPS IN MANAGING THE TRANSITION

Beckhard and Pritchard (1992) have outlined the basic steps in managing a transition to a new system such as TQM: identifying tasks to be done, creating necessary management structures, developing strategies for building commitment, designing mechanisms to communicate the change, and assigning resources.

Task identification would include a study of present conditions (assessing current reality, as described above); assessing readiness, such as through a force field analysis; creating a model of the desired state, in this case, implementation of TQM; announcing the change goals to the organization; and assigning responsibilities and resources. This final step would include securing outside consultation and training and assigning someone within the organization to oversee the effort. This should be a

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responsibility of top management. In fact, the next step, designing transition management structures, is also a responsibility of top management. In fact, Cohen and Brand (1993) and Hyde (1992) assert that management must be heavily involved as leaders rather than relying on a separate staff person or function to shepherd the effort. An organization wide steering committee to oversee the effort may be appropriate. Developing commitment strategies was discussed above in the sections on resistance and on visionary leadership.

To communicate the change, mechanisms beyond existing processes will need to be developed. Special all-staff meetings attended by executives, sometimes designed as input or dialog sessions, may be used to kick off the process, and TQM newsletters may be an effective ongoing communication tool to keep employees aware of activities and accomplishments.

Management of resources for the change effort is important with TQM because outside consultants will almost always be required. Choose consultants based on their prior relevant experience and their commitment to adapting the process to fit unique organizational needs. While consultants will be invaluable with initial training of staff and TQM system design, employees (management and others) should be actively involved in TQM implementation, perhaps after receiving training in change management which they can then pass on to other employees. A collaborative relationship with consultants and clear role definitions and specification of activities must be established.

In summary, first assess preconditions and the current state of the organization to make sure the need for change is clear and that TQM is an appropriate strategy. Leadership styles and organizational culture must be congruent with TQM. If they

are not, this should be worked on or TQM implementation should be avoided or delayed until favorable conditions exist.

Remember that this will be a difficult, comprehensive, and long-term process. Leaders will need to maintain their commitment, keep the process visible, provide necessary support, and hold people accountable for results. Use input from stakeholder (clients, referring agencies, funding sources, etc.) as possible; and, of course, maximize employee involvement in design of the system.

2.20 THE EIGHT ELEMETS OF TOTAL QUALITY MANAGEMENT

Pathi (1999) says that to be successful implementing TQM, an organization must concentrate on the eight key elements:

1. Ethics

2. Integrity

3. Trust

4. Training

5. Teamwork

6. Leadership

7. Recognition

8. Communication

TQM has been coined to describe a philosophy that makes quality the driving force behind leadership, design, planning, and improvement initiatives. For this, TQM requires the help of those eight key elements. These elements can be divided into four groups according to their function. The groups are:

I. Foundation- It includes ethics, integrity and trust.

II. Building Bricks- It includes training, teamwork and leadership.

III. Binding Mortar- It includes communication.

IV. Roof- It includes recognition.

TQM is built on a foundation of ethics, integrity and trust. It fosters openness, fairness and sincerity and allows involvement by everyone. This is the key to unlocking the ultimate potential of TQM. These three elements move together, however, each element offers something different to the TQM concept.

2.20.1 Ethics

Ethics is the discipline concerned with good and bad in any situation. It is a two-faceted subject represented by organizational and individual ethics. Organizational ethics establish a business code of ethics that outlines guidelines that all employees are to adhere to in the performance of their work. Individual ethics include personal rights or wrongs.

2.20.2 Integrity

Integrity implies honesty, morals, values, fairness, and adherence to the facts and sincerity. The characteristic is what customers (internal or external) expect and deserve to receive. People see the opposite of integrity as duplicity. TQM does not work in an atmosphere of duplicity.

2.20.3 Trust

Trust is a by-product of integrity and ethical conduct. Without trust, the framework of TQM cannot be built. Trust fosters full participation of all members. It allows empowerment that encourages pride ownership and it encourages commitment. It allows decision making at appropriate levels in the organization, fosters individual risk-taking for continuous improvement and helps to ensure that measurements focus on improvement of process and are not used to contend people. Trust is essential to ensure customer satisfaction. So, trust builds the cooperative environment essential for TQM.

Basing on the strong foundation of trust, ethics and integrity, bricks are placed to reach the roof of recognition. It includes the following:

2.20.4 Training

Training is very important for employees to be highly productive. Supervisors are solely responsible for implementing TQM within their departments, and teaching their employees the philosophies of TQM. Training that employees require are interpersonal skills, the ability to function within teams, problem solving, decision making, job management performance analysis and improvement, business economics and technical skills. During the creation and formation of TQM, employees are trained so that they can become effective employees for the company.

2.20.5 Teamwork

To become successful in business, teamwork is also a key element of TQM. With the use of teams, the business will receive quicker and better solutions to

problems. Teams also provide more permanent improvements in processes and operations. In teams, people feel more comfortable bringing up problems that may occur, and can get help from other workers to find a solution and put into place. There are mainly three types of teams that TQM organizations adopt:

A. Quality Improvement Teams (QITs) or Excellence Teams: These are temporary teams with the purpose of dealing with specific problems that often re-occur. These teams are set up for period of three to twelve months.

B. Problem Solving Teams (PSTs): These are temporary teams to solve certain problems and also to identify and overcome causes of problems. They generally last from one week to three months.

C. Natural Work Teams (NWTs): These teams consist of small groups of skilled workers who share tasks and responsibilities. These teams use concepts such as employee involvement teams, self-managing teams and quality circles. These teams generally work for one to two hours a week.

2.20.6 Leadership

It is possibly the most important element in TQM. It appears everywhere in organization. Leadership in TQM requires the manager to provide an inspiring vision, make strategic directions that are understood by all and to instill values that guide subordinates. For TQM to be successful in the business, the supervisor must be committed in leading his employees. A supervisor must understand TQM, believe in it and then demonstrate their belief and commitment through their daily practices of TQM. The supervisor makes sure that strategies, philosophies, values and goals are transmitted down through out the organization to provide focus, clarity and direction. A key point is that TQM has to be introduced and led by top management.

Commitment and personal involvement is required from top management in creating and deploying clear quality values and goals consistent with the objectives of the company and in creating and deploying well defined systems, methods and performance measures for achieving those goals.

2.20.7 Communication

It binds everything together. Starting from foundation to roof of the TQM house, everything is bound by strong mortar of communication. It acts as a vital link between all elements of TQM. Communication means a common understanding of ideas between the sender and the receiver. The success of TQM demands communication with and among all the organization members, suppliers and customers. Supervisors must keep open airways where employees can send and receive information about the TQM process. Communication coupled with the sharing of correct information is vital. For communication to be credible the message must be clear and receiver must interpret in the way the sender intended.

There are different ways of communication such as:

A. Downward communication: This is the dominant form of communication in an organization. Presentations and discussions basically do it. By this the supervisors are able to make the employees clear about TQM.

B. Upward communication: By this the lower level of employees are able to provide suggestions to upper management of the affects of TQM. As employees provide insight and constructive criticism, supervisors must listen effectively to correct the situation that comes about through the use of TQM. This forms a level of trust

between supervisors and employees. This is also similar to empowering communication, where supervisors keep open ears and listen to others.

C. Sideways communication: This type of communication is important because it breaks down barriers between departments. It also allows dealing with customers and suppliers in a more professional manner.

2.20.8 Recognition

Recognition is the last and final element in the entire system. It should be provided for both suggestions and achievements for teams as well as individuals. Employees strive to receive recognition for themselves and their teams. Detecting and recognizing contributors is the most important job of a supervisor. As people are recognized, there can be huge changes in self-esteem, productivity, quality and the amount of effort exhorted to the task at hand. Recognition comes in its best form when it is immediately following an action that an employee has performed. Recognition comes in different ways, places and time such as,

2.21 APPLYING TOTAL QUALITY MANAGEMENT IN ACADEMICS

Mehrotra (2004) says that the concept of TQM was developed by an American Deming after World War II for improving the production quality of goods and services. The concept was not taken seriously by Americans until the Japanese, who adopted it in 1950 to resurrect their postwar business and industry, used it to dominate world markets by 1980. By then most U.S. manufacturers had finally accepted that the nineteenth century assembly line factory model was outdated for the modern global economic markets.

The concept of TQM is applicable to academics. Many educators believe that the Deming's concept of TQM provides guiding principles for needed educational reform. In his article, "The Quality Revolution in Education", John Jay Bonstingl outlines the TQM principles he believes are most salient to education reform. He calls them the "Four Pillars of Total Quality Management".

2.21.1 Principle 1: Synergistic Relationships

According to this principle, an organization must focus, first and foremost, on its suppliers and customers. In a TQM organization, everyone is both a customer and supplier; this confusing concept emphasizes "the systematic nature of the work in which all are involved". In other words, teamwork and collaboration are essential. Traditionally, education has been prone to individual and departmental isolation. However, according to Bonstingl, this outdated practice no longer serves us: "When I close the classroom door, those kids are mine!" is a notion too narrow to survive in a world in which teamwork and collaboration result in high-quality benefits for the greatest number of people. The very application of the first pillar of TQM to education emphasizes the synergistic relationship between the "suppliers" and the "customers". The concept of synergy suggests that performance and production is enhanced by pooling the talent and experience of individuals.

In a classroom, teacher-student teams are the equivalent of industry's front-line workers. The product of their successful work together is the development of the student's capabilities, interests, and character. In one sense, the student is the teacher's customer, as the recipient of educational services provided for the student's growth and improvement. Viewed in this way, the teacher and the school are suppliers of effective learning tools, environments, and systems to the student, who is the school's

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primary customer. The school is responsible for providing for the long-term educational welfare of students by teaching them how to learn and communicate in high-quality ways, how to access quality in their own work and in that of others, and how to invest in their own lifelong and life-wide learning processes by maximizing opportunities for growth in every aspect of daily life. In another sense, the student is also a worker, whose product is essentially his or her own continuous improvement and personal growth.

2.21.2 Principle 2: Continuous Improvement and Self Evaluation

The second pillar of TQM applied to education is the total dedication to continuous improvement, personally and collectively. Within a Total quality school setting, administrators work collaboratively with their customers: teachers. Gone are the vestiges of "Scientific management" whose watchwords were compliance, control and command. The foundations for this system were fear, intimidation, and an adversarial approach to problem-solving. Today, it is in our best interest to encourage everyone's potential by dedicating ourselves to the continual improvement of our own abilities and those of the people with whom we work and live. Total quality is, essentially, a win-win approach which works to everyone's ultimate advantage.

According to Deming, no human being should ever evaluate another human being. Therefore, TQM emphasizes self-evaluation as part of a continuous improvement process. In addition, this principle also laminates to the focusing on students' strengths, individual learning styles, and different types of intelligences.

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2.21.3 Principle 3: A System of Ongoing Process

The third pillar of TQM as applied in academics is the recognition of the organization as a system and the work done within the organization must be seen as an ongoing process. The primary implication of this principle is that individual students and teachers are less to blame for failure than the system in which they work. Quality speaks to working on the system, which must be examined to identify and eliminate the flawed processes that allow its participants to fail. Since systems are made up of processes, the improvements made in the quality of those processes largely determine the quality of the resulting product. In the new paradigm of learning, continual improvement of learning processes based on learning outcomes replaces the outdated "teach and test" mode.

2.21.4 Principle 4: Leadership

The fourth TQM principle applied to education is that the success of TQM is the responsibility of top management. The school teachers must establish the context in which students can best achieve their potential through the continuous improvement that results from teachers and students working together. Teachers who emphasize content area literacy and principle-centered teaching provide the leadership, framework, and tools necessary for continuous improvement in the learning process. According to the practical evidences, the TQM principles help the schools in following clauses:

a. Redefine the role, purpose and responsibilities of schools.

b. Improve schools as a "way of life".

c. Plan comprehensive leadership training for educators at all levels.

d. Create staff development that addresses the attitudes and beliefs of school staff.

e. Use research and practice-based information to guide both policy and practice.

f. Design comprehensive child-development initiatives that cut across a variety of agencies and institutions.

In order to achieve the above as opportunities to the academic scenario, in addition to patience, participatory management among well-trained and educated partners is crucial to the success of TQM in education; everyone involved must understand and believe in principles. Some personnel who are committed to the principles can facilitate success with TQM. Their vision and skills in leadership, management, interpersonal communication, problem solving and creative cooperation are important qualities for successful implementation of TQM.

2.22 HOW QUALITY SUPPORTS THE SCHOOL IMPROVEMENT PROCESS

Both the quality and school improvement models develop a systems view of education. They focus upon the total school program rather than each of the separate components with in that program. The school improvement model and quality process both seek to identify best practices. Best practices are used as a standard by which all improvement is measured. Both models seek to align organizational practices with achievement of the desired outcomes and mission of the school. Achievement of the desired outcomes and mission of the school continuous improvement is a key component of both models. As staff become familiar with the quality and school improvement processes, they identify ways to improve every educational process, from waxing the floor to managing the classroom. The quality process enhances the school improvement process by providing education professionals with the tools and techniques needed to achieve the desired objectives.

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Quality focuses on using data to effect change. Evaluation and assessment are key components in both models. Quality provides people with the tool to manage change. Both models strive to become the culture of organization, the normal way of doing business.

This blend of models is unique approach that will enable the school (any school) o achieve their desired objectives. Quality is not another process. It is a management system that can be used to implement the school improvement model. Quality is a structured process that helps people to develop systems for collecting and analyzing data. Quality helps people to determine if the desired objectives were achieved in order to improve every educational process.

2.23 TOTAL QUALITY SCHOOLS MODEL (CRITERIA FOR A TOTAL QUALITY COLLEGE/ SCHOOL)

The criteria for a total quality school are labeled "The pillars of Quality" for education. About the pillars of education we have explained thoroughly. They are essential ingredients for every successful quality initiative. The pillars of quality are universal. They can be applied to every organization in education from classroom activities to building maintenance. All the pillars are of equal importance. You can not attain Total quality School status unless all of the pillars are present in our education system. However, the most important component of quality is the foundation upon which the quality program is built. The school must develop a strong quality foundation based on the personal beliefs and vales of the people working in the system-quality must come to mean as much to school boards members and administrators as it does to students and staff.

A Total quality School creates an environment that enables everyone to bring measurable quality improvements to their work process. The "Pillars of Quality "provide the staff with the focus and direction that is necessary for any quality initiative to the students and society. Focus can not be limited to just one pillar. To develop a school wide quality culture, WE must focus on all of pillars at the same time.

The following example is most helpful for us to develop an understanding of how schools are implementing quality to improve administrative and student outcomes.

The Bay Arenec Intermediate School district is located in Bay City, Michigan. Dr. Jon Wan was appointed superintendent (Principle/ Head) of school in January 1993. One of Wan's first official acts was to develop a quality initiative for the school (district). Everyone in the institute (school) was provided with an overview of quality staff reviewed the implementation process and were encouraged to explore alternative school improvement programs. At the end of the awareness session, staff over whelming adopted the quality initiative.

The Bay Arenac Intermediate School districts has strongly and uniformly embraced the principles of quality. All staff is treated with respect. Staff is encouraged to explore new ways of improving administrative and student outcomes. Staff training is a key priority for the school or institute. The school board and superintendent work together to create an open environment that encourages total participation in the quality initiative. Every one is viewed as a quality leader, and everyone is encouraged to explore ideas that will help the school achieve its vision. A core planning team was created to manage the quality initiative. Staff was surveyed

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to determine their needs, a school speech Curriculum was developed, and support manuals were created. This institute was an overwhelming success. Administrative, teaching and support staff representatives worked together to solve problems. However, the Bay Arenac quality initiative is unique because of the investment that was made in the staff. During the initial year of the initiative the major goal of the school was to help the staff develop both an internal and an external customer. Although they do not call students or parents customers, educators strive to meet every reasonable request of parents. Educators will go to great lengths to help students succeed. The success of the Bay Arenac program is due in large to the efforts of the members of the core planning team and quality co-coordinators. The quality coordinators constantly monitored progress of the implementation to ensure that the initiative reflected the districts requirements.

Wan had made a point of working with his staff to remove the barriers that prevent people from being successful and staff members are encouraged to develop new ways of working to increase productivity and service quality. Because the school's resources are shrinking staff members are finding new ways to generate revenue. The school's distant learning programs are innovated. The Bay Arenac Intermediates School District has developed a total customer focus that is helping the school districts in Bay and Arenac to improve the quality of the educational services provided to the communities.

CHAPTER 3

METHODOLOGY

3.1 TYPE OF STUDY

It is a case study of The University College of Education Chiniot with reference to Total quality Management.

3.2 POPULATION

The population of the study comprised of principal, teachers/ trainers and students/ trainees/ under training teachers in the University College of Education Chiniot. There was only B.Ed. (Bachelor of Education) level classes, one section for male students and two sections for female students. The principal, teachers and all male and female students consisted of the population. Population comprised the following:

Table 1: Population

Sr. No	Respondents	Number
1	Principal	1
2	Teachers/ Trainers	20
3	Students/ Trainees/ under training teachers Male Female	40 80
	Total	141

3.3 SAMPLE OF THE STUDY

The whole population was taken as sample of the research.

3.4 TOOLS OF RESEARCH

The use of any tool of research depends upon the nature of research. In the present research following tools of research were used.

1. Data Sheet (Factual Sheet).

2. Questionnaire for Principal.

3. Questionnaire for Teachers/ Trainers.

4. Questionnaire for Students/ Trainees/ under training Teachers.

The selected literature was studied for the preparation of questionnaires. The supervisor of thesis and some educationists and experts were also consulted in the preparation of questionnaires. The questionnaires were tried out on the principal, teachers and the students/trainees of B.Ed. class in the University College of Education Kot Addu, District Muzaffargarh. In the light of suggestions of educationists and experts, some items of the questionnaires were dropped and some minor changes were made in the language of the items of questionnaires.

The questions asked through the questionnaires were related to investigate the total quality of education in the University College of Education Chiniot. Information regarding some facilities and some facts regarding number of rooms, electricity, boundary wall, water supply, library, science laboratory, A. V. aids room, transport, hostel, mosque, security guard were asked in the Data Sheet (Factual Sheet). A letter

of personal request to the principal of the University College of Education Chiniot was also attached with questionnaires.

The researcher went to the University College of Education Chiniot and administered the questionnaires to the principal, teachers/ trainers and students/under training teachers/ trainees personally. The following three questionnaires were administered to the respondents but Data Sheet was collected by the researcher personally:

1. The principal of The University College of Education Chiniot.

2. Teachers/ trainers of the college.

3. Students/ trainees/ under training teachers of the college.

4. Information of the Data Sheet (Factual Sheet) was collected personally.

3.5 COLLECTION OF DATA

Informal discussions were held with the principal, teachers/ trainers and students/ under training teachers of the college of B.Ed. classes to get knowledge related to the TQM. The researcher collected questionnaires personally. All the questionnaires were received.

3.6 DATA ANALYSIS

The collected data through questionnaires and data sheet were tabulated and analyzed. In the end, findings were drawn, conclusions were made and from conclusions, recommendations were given.

CHAPTER 4

ANALYSIS AND INTERPRETATION OF DATA

This chapter deals with the presentation and analysis of data collected from the principal, teachers/ trainers and students/ trainees of The University College of Education Chiniot. Three questionnaires and a data sheet/ factual sheet) were prepared in the light of the review of the related literature and with the consultation of the supervisor, educationists and experts. To study the total quality in education of the University College of Education Chiniot, different items were given regarding the different aspects of quality education like leadership, management, use of teaching aids, and other facilities. The data collected through the instruments about the various aspects of the study were tabulated, presented and analyzed in the percentage form by means of different tables. Then the results were interpreted.

Table 2: The Availability of Physical Facilities in College

Sr. No.	Facilities	Status
1	Electricity	Sufficient
2	Boundary Wall	Sufficient
3	Water Supply	Sufficient
4	Library	Sufficient
5	Science Laboratory	Sufficient
6	A.V. Aids Laboratory	To Some Extent
7	Transport	Insufficient
8	Security Guard	Insufficient
9	Hostel	To Some Extent
10	Mosque	Sufficient

Analysis indicates that the availability of electricity, boundary wall, water supply, library, science laboratory, and mosque were provided sufficiently whereas A.V. aids laboratory and hostel were provided to some extent. Furthermore, transport and security facilities were Insufficient.

Table 3: Educational Qualification of the Teachers

Educational Qualification	Frequency	Percentage
M.A.	14	70
M.Sc	6	30

The above analysis of the educational qualification of the teachers indicates that 70%teachers were Master Degree holder in the subjects of Arts and 30% had Master Degree in Science.

Table 4: Professional Qualification of Teachers

Educational Qualification	Frequency	Percentage
B. Ed	6	30
B.S.Ed	2	10
M.Ed	12	60

Analysis of the professional qualification of the teachers shows that 30% teachers are B.Ed., 10% were B.S.Ed and 60% were M.Ed.

Table 5: Teaching Experience of Teachers

Educational Qualification	Frequency	Percentage
0-5	2	10
6-10	4	20
11-15	4	20
16-20	4	20
21-25	6	30

Analysis of teaching experience of the teachers (subject specialists) indicates that 10% have 0-5 years experience, 20% have teaching experience, each for 6-10, 11-15, 16-20 years, but rest of 30% have experience above 20 years.

Table 6: The Responses from the Principal

Sr. No	Items	Principal View points
A	Qualification	M.A., M.Ed.
B	Teaching Experience	27 years
C	Administrative Experience	8 years
1	Mission of College	To make the teaching process better
6	Consultation at the occasion of teachers recruitment	To the other sources
11	Evaluation of self efficiency	After one month
12	Evaluation of efficiency by other higher authorities	Not at all
13	Curriculum is Selected by	Administration
14	Time utilize for the betterment of college daily	Half an Hour
15	Time utilize for teaching daily	One hour
16	Time spend for office work daily	Two hour

Table 7: Comparative Analysis of the Responses from the Principal and Teachers about the Principal's role

Items	Principal's Questionnaire		Teachers' Questionnaire	
	Sr. No	Principal's View points	Sr. No	Teachers' View points
Observation of the classroom	2	One time in a month	26	One time in a month
Solution of the Educational problems of teachers	3	50%	27	50%
Meeting with the teaching staff	4	One time in a month	28	One time in a month
Opportunity provided to the teachers in decision making	5	50%	29	25%
Evaluation of Efficiency of the teachers	7	By the results	30	By the results
Professional guidance provided to the teachers	8	Not at all	31	Not at all
Provide an opportunity of professional guidance to the teachers.	9	Once in a year	32	Once in a year
Call of meeting for the betterment and improvement of college	10	Monthly	33	Monthly

Analysis of principal's questionnaire indicates that his qualification was M.A. and M.Ed. His teaching experience was 27 years and experience as a head was of 8 years. According to the college principal the college mission was to make the training process better. He used evaluate his own efficiency at the end of the month. He was not being evaluated by others. The principal used to spend half an hour for the improvement of institution daily. He used to spend an hour for teaching and two hours for office work daily. The comparative analysis of the principal's questionnaire and teachers' questionnaire indicates that:

The principal used to observe the classrooms once in a month. He used to solve 50% teachers' educational problems. He called a meeting with the teaching staff once in a month. According to him, 50% teachers were involved in the decision making but teachers are of the point of view that only 25% teachers were involved. The principal was not consulted on the occasion of teachers' recruitment. He used to evaluate the teacher's efficiency by the mean of results of the students. No

professional guidance to teachers was provided by the principal. Principal used to provide an opportunity for professional guidance to the teacher once in year. He used to call a meeting at the end of every month for the betterment and improvement of institution.

Table 8: Relationship of Teachers

Sr. No	Items	All the time		Most of the time		A lot of time		Sometimes		Never	
		No.	%	No.	%	No.	%	No	%	No.	%
7	To students	10	50	4	20	4	20	2	10	--	--
9	To parents	--	--	2	10	6	30	10	50	2	10
14	To Principal	10	50	4	20	4	20	2	10	--	--

Analysis of the relationship of the teachers to students, parents and head indicates 50% teachers had relation all the time to the students, 20% for most of the time, 20%for for a lot of time relationship to students, only 10% had some time relationship with their students. Ten percent teachers had relationship with the parents of the students for most of the time, 30% had for a lot of time, 50% had for some times but 10% had never any relation or contact to the parents of their students. Fifty percent teachers told that they had contact with the principal for all the time, 20% each for most of the time and a lot of time, but 10% had for some times.

Table 9: The Use of Teaching Aids by Teachers

Sr. No	Items	All the time		Most of the time		A lot of time		Some-times		Never	
		No.	%	No.	%	No	%	No	%	No	%
1	The use of chart, posters during lessons or lectures	--	--	--	--	4	20	16	80	--	--
2	The use of A. V. Aids	--	--	4	20	6	30	10	50	--	--
11	The use of Self-made teaching aids		10	4	20	2	10	12	60	--	--

Analysis of the use of teaching aids by the teachers indicates that twenty percent of the teachers used charts, posters during lessons or lectures a lot of time

while 80% used sometimes. Twenty percent of the teachers use A.V. aids for most of the time (overall), 30% used them for a lot of the time but 50% used the aids for sometimes. Ten percent of the teachers used self made and low price teaching aids for all the time, 20% for most of the time, 10% for a lot of a time during their lecture and 80% used these aids for some times during their lectures.

Table 10: Distribution of Matters Related to Teachers

Sr. No	Items	All the time		Most of the time		A lot of time		Some- times		Never	
		No.	%	No.	%	No	%	No	%	No	%
3	Teaching while sitting in the classroom	--	--	--	--	--	--	6	30	14	70
5	Deliver of lecture while looking on the book	--	--	2	10	2	10	4	20	12	60
6	Lesson planning before delivering the lesson	8	40	--	--	6	30	6	30	--	--
15	Write weekly diary	--	--	--	--	--	--	14	70	6	30

Analysis of above table indicates that 30% of the teachers delivered their lecture while sitting in the classroom and 70% never used to sit while delivering lecture in the classroom. Ten percent of the teachers most of the time used to look on books during their lectures, 10% a lot of time used to look on the book, 20% of teachers sometimes used to look the book while delivering their lectures but 60% never looked the books to deliver lecture during their teaching. Forty five percent of the teachers used to plan their lessons for all the time, 30% used to plan their lessons for a lot of the time and rest of 30% only planed their lessons some times for teaching. Seventy percent of the teachers some time wrote their weekly educational diaries while 30% told that they never wrote diaries.

Table 11: Ethical Lesson by Teachers

Sr. No	Items	All the time		Most of The time		A lot of time		Some-times		Never	
		No.	%	No.	%	No	%	No	%	No	%
16	Start of lecture by the recite of Holy Quran	2	10	--	--	2	10	2	10	14	70
17	Deliver of any Ethical lecture to the students	4	20	4	20	8	40	4	20	--	--

Analysis of above mentioned table indicates that 10% of the teachers used to start their lecture by the recite of Holy Quran for all the time, 10% for a lot of time, 10% for some time and 70% of the teachers never started the lecture by the recitation of the Holy Quran. Twenty percent of the teachers delivered ethical lessons to students each for all the time and most of the time, 40% for a lot of time and 20% for some times.

Table 12: Students' Responses to Teachers

Sr. No	Items	All the time		Most of the time		A lot of time		Some-times		Never	
		No.	%	No.	%	No.	%	No,	%	No.	%
18	Allow the students to ask questions in classroom.	10	50	6	30	2	10	2	10	--	--
13	Students response to the teacher	--	--	6	30	12	60	2	10	--	--

Analysis of above table indicates that 50% of the teachers allowed the students to ask questions from the teacher in the classroom for all the time, 30% for most of the time and 10% each for a lot of time and some time. Thirty percent of the teachers said that their students responded to them for most of the time, 60% agreed for a lot of time and 10% for sometimes.

Table 13: Evaluation of students and Solution of their problems

Sr. No	Items	All the time		Most of the time		A lot of time		Some-time		Never	
		No.	%	No.	%	No.	%	No	%	No.	%
19	Evaluation of students individually and over come of their problems	2	10	6	30	6	30	6	30	--	--
24	Consult the head for your own teaching problems	--	--	4	20	--	--	16	80	--	--

Table 14: Absence and Lateness

Sr. No	Items	All the time		Most of the time		A lot of time		Some-times		Never	
		No.	%	No.	%	No.	%	No.	%	No.	%
20	Absent from the college	--	--	--	--	--	--	2	10	18	90
21	Absent from classrooms but present in the campus	--	--	--	--	--	--	8	40	12	60
22	At leaves	--	--	--	--	2	10	16	80	2	10
25	Arrive at college after the starting time of college	--	--	--	--	--	--	12	60	8	40

Analysis of above table indicates that 10% of the teachers remained absent from institution for some time but 90% were never absent from college. Forty percent of the teachers sometimes remained absent from the classroom while present at college but 60% never did so. Ten percent of the teachers remained at leaves for a lot of time and 80% sometimes remained at leave but 10% never remained at leaves. Sixty percent of the teachers were sometimes late from the college but 40% were never late from the college.

Table 15: Matters and Activities by Students

Sr. No	Items	All the time		Most of the time		A lot of time		Some times		Never	
		No	%	No	%	No	%	No	%	No	%
1	You are satisfied with the academic environment of the college.	--	--	--	--	--	--	72	60	48	40
2	Classroom and out of classroom environment are much disciplined.	--	--	--	--	--	--	84	70	36	30
3	Quality of education is maintained in the college.	--	--	--	--	24	20	48	40	48	40
4	You are properly guided for the teaching practice in the schools.	--	--	12	10	12	10	72	60	24	20
5	Teachers and the principal provide proper guidance for selecting subjects for specialization.	--	--	--	--	--	--	24	20	96	80
6	You have discussion in classroom.	--	--	12	10	24	20	66	55	18	15
7	The principal visits your classes daily.	--	--	--	--	--	--	18	15	102	85
8	You prepare lesson plans and diaries.	--	--	--	--	--	--	24	20	96	80
9	Teachers are a role model for the students.	--	--	--	--	--	--	36	30	84	70
10	You go on field trips.	--	--	--	--	12	10	84	70	24	20
11	You read extra books and novels etc.	--	--	--	--	42	35	66	55	12	10
12	You consult library for your assignments and preparation of exam.	--	--	18	15	6	5	6	5	90	75

Analysis of the results of the under training teacher interviews schedule indicates that sixty percent of the students were satisfied with the academic environment of the college for some time but 40% were never satisfied at all. Seventy percent of the students/ under training teachers agreed that the classroom and out of classroom environment were much disciplined for some time but 30% of students gave response in never. Twenty percent of the students/ under training teachers agreed that quality of education was maintained in the college a lot of time, 40% of them for sometime and 40% never agreed. Ten percent of the students were properly guided for the teaching practice in the schools for most of the time, 10% for a lot of time, 60% for sometimes and 20% of the students/ under training teachers were never guided for the teaching practice in the schools. Twenty percent of the students said

that teachers and the principal provided proper guidance for selecting subjects for specialization and 80% of them said never. Ten percent of the students had group discussion in the classroom most of the time, 20% had a lot of time in the classroom, 55% of students had group discussion for sometimes but rest of 15% of them had no discussion in the classroom.

Twenty of the students/ under training teachers told that the principal used to visit the classes daily for sometime but 80% of them never agreed. Twenty of the students/ under training teachers prepared lesson plans and diaries for some time but 80% never prepared lesson plans and diaries. Thirty percent of students suggested that teachers were a role model for the students but 70% of them never agreed. Ten of the students agreed to go on field trips a lot of time, 70% for sometime but rest of 20% told never to go to field trips. Thirty five of the students/ under training teachers used to read extra books and novels a lot of time, 55% students used to read extra books and novel for some times but 10% never. Fifteen percent of the students consulted library for assignments and preparation of exam for the most of time, 5% of students gave the response for a lot of time and 5% for some time but 75% of students never consulted library for assignments and preparation of exam.

Table 16: Matters of the Teachers in the Classroom

Sr. No	Items	All the time		Most of the time		A lot of time		Some-times		Never	
		No.	%	No.	%	No.	%	No.	%	No.	%
13	Use of charts, maps and posters during lessons or lecture	--	--	6	5	18	15	48	40	48	40
14	Different teachers use different methods of teaching in the classroom.	--	--	--	--	18	15	72	60	30	25
15	Your teacher remain absent from college.	--	--	--	--	--	--	90	75	30	25
16	Your teacher remain absent from class but not from college.	--	--	--	--	--	--	24	20	96	80

Analysis of the results from the under training teachers about the activities of the teachers indicates the following:

Five percent of the students/ under training teachers agreed that their teachers used chart, maps and posters during lesson or lecture for most of the time, 15% of them agreed for a lot of time, 40% of the students/ under training teachers agreed that their teachers used charts for only sometimes but 40% of them told that teachers never used these aids. Fifteen percent of the students told that different teachers used different methods of teaching in the classroom a lot of time but 60% for sometimes but 25% of them told they never did so. Seventy percent of the students/ under training teachers were of the view that their teachers remained absent from school for some times but 25% had opinion that their teacher never remained absent from college. Twenty percent of the students agreed that their teachers remained absent from class but not from college some times but 80% of them told that they never remained absent from classroom while remaining in the institution.

Table 17: Methods of Teaching

Sr. No	Items	S. A		A		U		D		S. D	
		No.	%	No.	%	No	%	No.	%	No.	%
17	Teachers are very lazy and do not use an effective method of teaching.	54	45	54	45	--	--	12	10	--	--
18	All teachers use the lecture method of teaching.	30	25	36	30	18	15	18	15	18	15
19	All teachers teach in a friendly manner and use different methods and styles of teaching according to the requirement.	--	--	60	50	12	10	48	40	--	--

Analysis about the improvement in the methods of teachers during last six months indicates that forty five percent of the students strongly agreed that teachers were not lazy and used an effective method of teaching, 45% of students only agreed but 10% of the students disagreed that teachers were not lazy and used an effective

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method of teaching. Twenty five percent of the students/ under training teachers strongly agreed that all teachers used the lecture method of teaching, 30% agreed, 15% were uncertain, 15% disagreed and 15% strongly disagreed. Fifty percent of the students agreed that all teachers taught in a friendly manner and used different methods and styles of teaching according to the requirement, 10% of the students were uncertain and 44.4% of the students disagreed.

Table 18: Behavior of Teachers with Students

Sr. No	Items	S. A		A		U		D		S. D	
		No.	%	No.	%	No.	%	No.	%	No.	%
20	Very good	66	55	54	45	--	--	--	--	--	--
21	Very bad	--	--	--	--	--	--	66	55	54	45

Analysis of change of behaviour of the teachers with the students indicates that fifty five percent of the students were strongly agreed that their teachers had very good behaviour with them and 45% agreed with the good behaviour of the teachers with students. Fifty five percent of the students disagreed with the very bad behaviour of the teachers and 45% of the students were strongly disagreed with the very bad behaviour of the teachers.

Table 19: Descriptive Statistics of the Results of Students

Total Number of Students	Statistics	Value	Percentage
120	Average	712.0417	59.33
	Maximum	957	79.75
	Minimum	410	34.16
	Standard Deviation	126.9473	

The table 19 shows that aggregate marks of the students of B.Ed class were scattered with a higher value of standard deviation but the average is better. Moreover, there is much difference in the maximum and the minimum values of marks.

CHAPTER 5

SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY

This research was conducted to make a comprehensive study of the University College of Education Chiniot with reference to TQM. The study was undertaken to identify the existing facilities in this college, including building, boundary wall, hostel, electricity, A.V. aids laboratory, library, science laboratory, water supply, hand pumps, transportation and play ground etc. It aimed at finding out the ability of the principal and the students; and the quality of the teachers. This study evaluated the present system of teacher's training program in The University College of Education Chiniot and investigated the Quality of education in this college.

Some information was also collected from the prospectus of the institution. The population of the study consisted of one principal, ten teachers/ trainers and 120 students/ trainees of the only B. Ed. class of the University College of Education Chiniot. Eighty students were female and forty students were male. The whole population was selected as the sample of the study. Information about the college in accordance with the total quality management was collected through data sheet/ factual sheet and three types of questionnaires administered to the principal, teachers/ trainers and students/ trainees of the University College of Education Chiniot.

The data obtained from the principal, teachers and students were shown by tables. Responses were shown in simple percentage form, then were interpreted and analyzed with reference to total quality management in education. Finally findings, conclusions and recommendations were given.

5.2 FINDINGS

1. The principal admitted that the college was provided with facilities like classrooms, electricity, boundary wall, library, lab, A.V. aids laboratory, security guard, mosque, hostel but lack of transport.

2. The qualification of the principal was an M.A. M.Ed. having twenty years teaching and eight years administrative experience. The principal admitted that the college mission was to make the training process better.

3. The principal solved the 50% of the educational problems of teachers but involved 50% of the teachers in the decision making process but this percentage is 25 according to teachers. He was not consulted on the eve of teachers' recruitment.

4. The efficiency of the teachers/ trainers was evaluated only by results. The principal did not provide any professional guidance to the teachers but gave a chance to improve it once a year.

5. The principal call a meeting of staff once a month and that he spent only half an hour daily for the improvement and betterment of the institute in a day. Likewise, he used to utilize only an hour daily for teaching purpose but he used to spend two hours daily to handle the official matters daily.

6. Overall 50% of the teachers admitted to use A.V. aids but sometimes not all the time in the classroom. Eighty percent of the teachers admitted that they had most of the times a relations with the students.

7. Seventy percent of the teachers never taught the class kept on sitting in the chair while thirty percent of the teachers sit sometimes. Likewise, sixty percent of the teachers delivered their lecture without adoption of paper reading while the rest adopts books for some time.

8. Seventy percent of the teachers told that they wrote weekly diaries sometimes but thirty percent never do so. Furthermore, seventy percent of the teachers never started their lecture by reciting the verses from the Holy Quran but others did so some times.

9. Eighty percent of the teachers considered that their pupils gave them feed back mostly during the lecture but the rest of them for some time. Eighty percent of the teachers consulted their head to minimize their teaching problems sometimes but twenty percent consulted most of the times.

10. Ninety percent of the teachers never remained absent from the college but ten percent remained sometimes. Sixty percent of the teachers never remained away from the classroom despite staying at college but forty percent sometimes remain away.

11. Eighty percent of the teachers viewed that they were not satisfied with their pay and allowances but twenty percent satisfied to the some extent.

12. Ninety percent of the teachers admitted that they had never evaluated the students continuously (at the end of every chapter). Ten percent did so for some time.

13. Sixty percent of the students/ trainees viewed that they were satisfied with the academic environment of the college some times but forty percent viewed in never.

14. Eighty percent of the students viewed that that teachers and the principal never provided proper guidance for selecting subjects for specialization but 20% percent agreed for sometimes. Furthermore, eighty percent of the students never agreed that principal visited their classes daily but 20% agreed.

15. Eighty percent of the students never prepared lesson plans and diaries but twenty percent agreed for some times.

16. Seventy percent of the students agreed that teachers were never a role model for the students but the rest of them agreed for some time.

17. Eighty percent of the students viewed that they went on study tours/ field trips for some times and twenty percent viewed in never. Furthermore, 50% of the students admitted that they used to read extra books and novels for sometimes, 33% a lot of time and 15% percent never read.

18. Sixty percent of the students viewed that their teachers sometimes used charts and posters during their lecture while forty percent viewed in never.

19. Seventy percent of the students viewed that their teachers remained absent from the college while 25% of them viewed that their teachers never remained absent.

20. Eighty percent of the students viewed that their teachers never remained away from the class despite staying in the college but twenty percent viewed that their teachers remained away from the class while staying in the institute.

21. Forty five percent of the students strongly agreed that teachers were not lazy and use an effective method of teaching, 45% agreed and 9% disagreed.

22. Twenty five percent of the students strongly agreed, 30% agreed, 15 % uncertain, 15% disagreed and 15% strongly disagreed with the opinion that all teachers used the lecture method of teaching.

23. Fifty percent of the students agreed that all teachers taught in a friendly manner and used different methods and styles of teaching according to the requirement, 10% viewed in uncertain and 40% percent disagreed.

24. The aggregate marks of the students were scattered with a higher value of standard deviation but the average of the marks shows better examination results

5.3 CONCLUSIONS

1. Mission statement of the college was to make the teachers training process better and to improve the quality of education.

2. All the teachers held master degrees in different subjects along with professional qualification of B.Ed., B.S.Ed. and M.Ed.

3. Most of the teachers had teaching experience of 16 to 25 years. The principal of the college was an M.A. M.Ed. with twenty seven years teaching experience and eight years administrative experience.

4. The principal was never consulted at the occasion of teachers' recruitment. Evaluation of the efficiency of the teachers was checked only by the results which was not so satisfactory with reference to total quality. Professional guidance was provided to the teachers to some extent which was a key to the quality of the education. Meeting with staff members for the betterment and educational improvement of college as well as conducted once a month.

5. Half an hour was utilized by the principal for the betterment of the college, an hour for teaching purpose and two hours for official work daily.

6. All necessary facilities except transportation were available in the college.

7. Teacher-student and teachers-principal relationship was quite satisfactory but teachers-parents relationship was nil.

8. The teachers used A.V. aids during their lectures sometimes, not most of the time. Mostly lesson planning was made but educational diaries were not maintained by most of the teachers. When students were asked to put questions, they responded well and it was easy to evaluate students learning during teaching.

9. Mostly teachers were punctual and regular and also avoided from remaining away from the class while staying at college. However, some teachers were habitual

late comers. Most of the teachers never sat in the chair while delivering the lecture and did not adopt paper reading.

10. Teachers consulted the principal mostly for the solution of their educational problems. Teachers participated in important decisions about college but participation is not enough. Moreover, the principal solved their half problems. Teachers were not protected by external factors. Almost all the teachers were not satisfied with their pay.

11. Students were not evaluated continuously. Inside and outside the classrooms, activities were not undertaken properly by the students while college provided sometimes a chance for such activities.

12. Total involvement of stake holders (principal, teachers and students), basic facilities and teaching materials produced a satisfactory academic environment to get better examination results. Examination result was focused but not expertise or skill of the students was focused. Therefore, it is not satisfactory for TQM of this teacher training programme.

13. Teaching, evaluation, management and discipline were satisfactory in the traditional method but not satisfactory for the TQM. Furthermore, the college shows good results with respect to the annual examination at the end of the term.

5.4 RECOMMENDATIONS

1. Mission statement of the college should be clearly communicated to the teaching staff so that they could know about their destination. Furthermore, transportation facility should be provided.

2. All the genuine problems of the teachers must be solved to achieve the quality education maximally. As the principal is responsible for achieving goals of the institute so he must be consulted at the occasion of teachers' recruitment so that right persons for the right job are selected.

3. Professional guidance should be provided to teachers not once a year but continuously till zero defects. In addition, formal and informal meetings with staff members for the betterment and improvement of the institute as well as to solve the teaching problems of professional staff may be conducted once a week instead of once a month. For quality improvement it is not enough to the principal to utilize half an hour daily for the general betterment of institute. Maximum time should be spent by the principal for this purpose. Moreover, proper training of management and motivation should be recommended to the principal for better leadership.

4. Teachers should use A.V. aids as and when required to create and maintain the interest of the students. Teachers-parents relationship is should be improved. Lesson Planning is necessary for effective learning and effective learning is the demand of total quality. Therefore, all the teachers should prepare lesson plans before delivering their lectures. Late comers should be motivated properly. Sense of security should be developed in teachers from external as well as internal factors.

5. Refresher courses, training workshops, seminars and meetings with highly qualified professionals should be arranged to update knowledge, techniques and methods of teachings for quality teachers. Likewise, proper rewards, pay, compensation, allowances, benefits and other facilities should be provided to teachers to satisfy their needs. This will prove helpful for quality education.

6. Continuous evaluation is necessary for improvement, so it should be undertaken with regular intervals. Furthermore, maximum students' involvement should be made possible to attain quality education. Sense of participation in important decisions should be created. For continuous improvement, continuous evaluation is necessary. So it is recommended that class tests should be conducted at the end of every chapter or topic. Students should be motivated properly to demonstrate different activities inside or outside the class. Progress of the students should be reported in regular intervals to the parents.

7. The responsibilities, rights and duties of each employee should be mentioned in clear manner and in written form. Drive out the fear from employees and students. Appreciation rewards and awards should be given to the good workers (Teachers, students and employees). Sense of accountability and accountability system should be developed. Set targets periodically before starting session which should be higher than previous period. Change the focus from production numbers (quantity) to quality. Action plans should be compatible with goals and objectives.

8. Finally it is recommended that if we want quality education at all levels or in all institutes, we should adopt and implement the principles and pillars of TQM.

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APPENDICES

LETTER

The Principal

The University College of Education Chiniot.

Subject: Collection for Data for Educational Research

Sir,

I am conducting a case study of "The University College of Education Chiniot with Reference to Total Quality Management". The data for this study is being collected through three types of questionnaires and a data sheet/ factual sheet attached with this letter. I assure you that the data will be used only for the study purposes. I hope you will kindly provide information personally and also advise the teachers and students to provide the required information in the questionnaires.

Yours sincerely,

Signature: ---------------------------------------

Dated: ----------------------- Muhammad Arshad Dahar,

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DATA SHEET/ FACTUAL SHEET
THE UNIVERSITY COLLEGE OF EDUCATION CHINIOT

Number of Rooms

1- Classrooms ------------
2- Administrative Block -------------

The Availability of Physical Facilities

Sr No	Items	Sufficient	To Some Extent	Insufficient
1	Electricity			
2	Boundary Wall			
3	Water Supply			
4	Library			
5	Science Laboratory			
6	A. V. Aids Room			
7	Transport (College Bus)			
8	Security Guard			
9	Hostel			
10	Mosque			

QUESTIONNAIRE FOR THE PRINCIPAL

Name--
Qualification: Academic------------------------Professional-----------------------------
Experience: Teaching----------------------------Administration----------------------------

1. Mission of the College is:

I. To train the students/ under training teachers/ trainees with up to date knowledge of education and its practice in the classroom.
II. To improve the quality of education.
III. To educate the students without discrimination.
IV. To provide better facilities to the teachers (trainers) and the students (trainees).
V. To provide residence facility to all the employees of the College.
VI. Any other--

Tick the correct answer:

2. Observation of the classroom.

Daily	Weekly	After 15 days	After a Month	After Three Months

3. Solution of the Educational problems of teachers.

0%	25%	50%	75%	100%

4. Meeting with the teaching staff.

Weekly	After 15 days	Monthly

5. Opportunity provided to the teachers to participate in decision making.

Daily	Weekly	After 15 days	After a Month	After Three Months

6. Consultation at the occasion of teachers' recruitment.

Teachers	Administration	Principal	Any other

7. Evaluation of efficiency of the teachers:

Results	Evaluation	Interview

8. Professional guidance provided to the teachers by:

Professional training	Seminars	Conference	Not at all

9. Provision of an opportunity of professional training to the teachers:

After one month	After three months	After one year	Once in a Year

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QUESTIONNAIRE FOR TEACHERS/ TRAINERS

Name--Designation-------------------------------------
Teaching Experience----------------------Subjects (current teaching) -------------------
Subject at Master Degree--

Academic Qualification	Professional Qualification
M.A. / M. Sc.	B. Ed.
M. Phil.	B. S. Ed.
Ph. D	M.Ed.
Any other	Any other

Do you do the following activities in the classroom?

Sr No	Items	All the time	Most of the time	A lot of time	Some times	Never
1	Charts and posters are used in class during teaching lesson					
2	A. V. aids are used.					
3	Teach while sitting in the chair.					
4	Teach while standing in the classroom.					
5	Deliver lecture while looking on the book					
6	Lesson planning before delivering your lesson.					
7	Your relations with your students.					
8	Your confidence as a teacher.					
9	Your relations with parents of your students.					
10	You use the teaching aids.					
11	You use self made and cheaper teaching aids					
12	You evaluate learning of your students.					
13	Your students respond to your teaching.					
14	Your relations with head/ principal.					
15	You write the educational diary weekly.					
16	You begin your lesson with the recitation of The Holy Quran.					
17	You teach the students morality.					
18	You provide chances to your students to ask questions.					
19	You evaluate the students individually and diagnose the solutions to their problems.					
20	You remain absent from the college.					
21	Remain out of the classroom in spite of staying at the college.					

22	Take more leaves.					
23	Introduce new innovations to the students					
24	Approach to the principal for the proper solutions of the problems faced during teaching					
25	Come late in the College					

The principal does the following activities:

26. Observation of the classroom.

Daily	Weekly	After 15 days	After a Month	After Three Months

27. Solution of the Educational problems of teachers.

0%	25%	50%	75%	100%

28. Meeting with the teaching staff.

Weekly	After 15 days	Monthly

29. Opportunity provided to the teachers to participate in decision making.

Daily	Weekly	After 15 days	After a Month	After Three Months

30. Evaluation of efficiency of the teachers:

Results	Evaluation	Interview

31. Professional guidance provided to the teachers by:

Professional training	Seminars	Conference	Not at all

32. Provision of an opportunity of professional training to the teachers:

After one month	After three months	After one year	Once in a Year

33. Call of meeting for the betterment and improvement of the College:

Weekly	After 15 days	Monthly	After three months	Six monthly

QUESTIONNAIRE FOR STUDENTS/ TRAINEES

Name ------------------------------------- College Roll No ---------------------------------

Qualification: ---------------------------- Class --

How are the arrangements of seats in your classroom? You sit in the: -------------------
1. Rows   2. Groups

Following questions are about the activities you do in the classroom. How do you do these activities? Answer:

Sr. No	Item	All the time	Most of the time	A lot of time	Some times	Never
1	You are satisfied with the academic environment of the college.					
2	Classroom and out of classroom environment are much disciplined.					
3	Quality of education is maintained in the college.					
4	You are properly guided for the teaching practice in the schools.					
5	Teachers and the principal provide proper guidance for selecting subjects for specialization.					
6	You have discussion in classroom.					
7	The principal visits your classes daily.					
8	You prepare lesson plans and diaries.					
9	Teachers are a role model for the students.					
10	You go on field trips.					
11	You read extra books and novels etc.					
12	You consult library for your assignments and preparation of exam.					

Matters of the Teachers in the Classroom

13	The use of charts, maps and posters during lessons or lecture.					
14	Teachers use teaching aids in the classroom.					
15	Your teacher remain absent from college.					
16	Your teacher remain absent from class but not from college.					

Some statements are given. Please indicate your level of agreement by ticking the appropriate box. SA = Strongly Agree, A = Agree, UC = Uncertain, D = Disagree, SD = Strongly Disagree

Methods of Teaching

No	Items	S. A	A	U	D	S. D.
17	Teachers are very lazy and do not use an effective method of teaching.					
18	All teachers use the lecture method of teaching.					
19	All teachers teach in a friendly manner and use different methods and styles of teaching according to the requirement.					

Behavior of Teachers with Students

Sr. No.	Items	S. A	A	U	D	S. D.
20	Very good					
21	Very bad					