CHAPTER-4

Methods and Materials
The concept of Total Quality Management (TQM) was developed by an American, W. Edwards 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 By then most U.S. manufacturers had finally accepted that the nineteenth century assembly line factory model was outdated for the modern global economic markets.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.”

**Steps to Creating a Total Quality Management System**

1. **Clarify Vision, Mission and Values**

Employees need to know how what they do is tied to organizational strategy and objectives which makes it important that all employees understand where the organization is headed (its vision), what it hopes to accomplish (mission) and the operational principles (values) that will steer its priorities and decision making. Having a process to educate employees during new employee orientation and a communication process to help ensure that the mission, vision and values is always in front of the people is a major first step.

2. **Identify Critical Success Factors (CSF)**

Critical success factors help an organization focus on those things that help it meet objectives and move a little closer to achieving its mission. These performance based measures provide a gauge for determining how well the organization is meeting objectives.

Some example CSF:

- Financial Performance
• Customer Satisfaction
• Process Improvement
• Market Share
• Employee Satisfaction
• Product Quality

3. Develop Measures and Metrics to Track CSF Data

Once critical success factors are identified, there needs to be measurements put in place to monitor and track progress. This can be done through a reporting process that is used to collect specified data and share information with senior leaders. For example, if a goal is to increase customer satisfaction survey scores, there should be a goal and a measure to demonstrate achievement of the goal.

4. Identify Key Customer Group

Every organization has customers and understanding who the key customer groups are is important so that products and services can be developed based on customer requirements. The mistake a lot of organizations make is not acknowledging employees as a key customer group.

*Example Key Customer Groups:*

• Employees
• Customers
• Suppliers
• Vendors
• Volunteers

5. Solicit Customer Feedback

The only way for an organization to know how well they are meeting customer requirements is by simply asking the question. There should be a structured process to solicit feedback from each customer group in an effort to identify what is important to them. Organizations often make the mistake of thinking they know what is important to customers and ask the
wrong survey questions. This this type of feedback is obtained through customer focus groups.

6. Develop Survey Tool

Next develop a customer satisfaction survey tool that is based on finding out what is important to customers. For example, customers might care more about quality than cost but if you are developing a product and trying to keep the cost down and skimping on the quality, you are creating a product that might not meet the needs of the customer.

There are lots of survey software available. One I like is SurveyGizmo which is an easy to use online survey tool. You can play with it and try it for free to see if its something that would benefit your organization.

7. Survey Each Customer Group

Each customer group should have a survey customized to their particular requirements and they should be surveyed to establish baseline data on the customers’ perception of current practice. This provides a starting point for improvements and demonstrates progress as improvement plans are implemented.

8. Develop Improvement Plan

Once the baseline is established you should develop an improvement plan based on customer feedback from each group. Improvement plans should be written in SMART goals format with assignments to specific staff for follow through.

Goals May Include Some of the Following:

- Process improvement initiatives, such as: customer call hold times
- Leadership Development: Walk-the-Talk
- Management Training/Development: How to manage employees in a quality environment
- Staff Training/Development: Customer Service
- Performance Management: Setting expectations, creating job descriptionsthat support the vision and holding staff accountable.
9. Resurvey

After a period of time (12-18 months), resurvey key customers to see if scores have improved. Customer needs and expectations change over time so being in-tune to changing needs and expectations is critical to long-term success.

10. Monitor CSF

It is important to monitor CSF monthly to ensure there is consistent progress toward goals. This also allows for course correction should priorities and objectives change during the review period.

11. Incorporate Satisfaction Data into Marketing Plans

Once you’ve achieved some positive results with your satisfaction data, use it as a marketing tool! A lot of successful organizations miss the boat by not letting others know what they do well. Customers want to know how an organization’s internal processes work especially if those processes help to deliver an outstanding product or service!

12. Technology

Make sure technology is user-friendly and supports targeted improvements. For example, a website should be easy to navigate as well as easy to find (SEO) and the content should be easy to understand.

Total Quality Management (TQM) is an approach that organizations use to improve their internal processes and increase customer satisfaction. When it is properly implemented, this style of management can lead to decreased costs related to corrective or preventative maintenance, better overall performance, and an increased number of happy and loyal customers.

However, TQM is not something that happens overnight. While there are a number of software solutions that will help organizations quickly start to implement a quality management system, there are some underlying philosophies that the company must integrate throughout every department of the company and at every level of management. Whatever
other resources you use, you should adopt these seven important principles of Total Quality Management as a foundation for all your activities.

1. **Quality can and must be managed**

Many companies have wallowed in a repetitive cycle of chaos and customer complaints. They believe that their operations are simply too large to effectively manage the level of quality. The first step in the TQM process, then, is to realize there is a problem and that it can be controlled.

2. **Processes, not people, are the problem**

If your process is causing problems, it won’t matter how many times you hire new employees or how many training sessions you put them through. Correct the process and then train your people on these new procedures.

3. **Don’t treat symptoms, look for the cure**

If you just patch over the underlying problems in the process, you will never be able to fully reach your potential. If, for example, your shipping department is falling behind, you may find that it is because of holdups in manufacturing. Go for the source to correct the problem.

4. **Every employee is responsible for quality**

Everyone in the company, from the workers on the line to the upper management, must realize that they have an important part to play in ensuring high levels of quality in their products and services. Everyone has a customer to delight, and they must all step up and take responsibility for them.

5. **Quality must be measurable**

A quality management system is only effective when you can quantify the results. You need to see how the process is implemented and if it is having the desired effect. This will help you set your goals for the future and ensure that every department is working toward the same result.
6. Quality improvements must be continuous

Total Quality Management is not something that can be done once and then forgotten. It’s not a management “phase” that will end after a problem has been corrected. Real improvements must occur frequently and continually in order to increase customer satisfaction and loyalty.

7. Quality is a long-term investment

Quality management is not a quick fix. You can purchase QMS software that will help you get things started, but you should understand that real results won’t occur immediately. TQM is a long-term investment, and it is designed to help you find long-term success.

Before you start looking for any kind of quality management software, it is important to make sure you are capable of implementing these fundamental principles throughout the company. This kind of management style can be a huge culture change in some companies, and sometimes the shift can come with some growing pains, but if you build on a foundation of quality principles, you will be equipped to make this change and start working toward real long-term success. Quality management ensures close coordination between employees of an organization. It inculcates a strong feeling of team work in the employees.

TQM Practices Model

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 “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 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.

**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.

**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.

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.

FIVE STRATEGIES TO DEVELOP THE TQM PROCESS
**Strategy 1: The TQM element approach**

The TQM element approach takes key business processes and/or organizational units and uses the tools of TQM to foster improvements. This method was widely used in the early 1980s as companies tried to implement parts of TQM as they learned them.

Examples of this approach include quality circles, statistical process control, Taguchi methods, and quality function deployment.

**Strategy 2: The guru approach**

The guru approach uses the teachings and writings of one or more of the leading quality thinkers as a guide against which to determine where the organization has deficiencies. Then, the organization makes appropriate changes to remedy those deficiencies.

For example, managers might study Deming’s 14 points or attend the Crosby College. They would then work on implementing the approach learned.

**Strategy 3: The organization model approach**

In this approach, individuals or teams visit organizations that have taken a leadership role in TQM and determine their processes and reasons for success. They then integrate these ideas with their own ideas to develop an organizational model adapted for their specific organization.

This method was used widely in the late 1980s and is exemplified by the initial recipients of the Malcolm Baldrige National Quality Award.

**Strategy 4: The Japanese total quality approach**

Organizations using the Japanese total quality approach examine the detailed implementation techniques and strategies employed by Deming Prize–winning companies and use this experience to develop a long-range master plan for in-house use.

This approach was used by Florida Power and Light—among others—to implement TQM and to compete for and win the Deming Prize.

**Strategy 5: The award criteria approach**
When using this model, an organization uses the criteria of a quality award, for example, the Deming Prize, the European Quality Award, or the Malcolm Baldrige National Quality Award, to identify areas for improvement. Under this approach, TQM implementation focuses on meeting specific award criteria.

Although some argue that this is not an appropriate use of award criteria, some organizations do use this approach and it can result in improvement.

A Framework of TQM

The framework of TQM was formulated on the basis of the theoretical model of TQM implementation constructs and overall business performance. The combination of the elements of TQM and overall business performance was the framework of TQM, which is displayed in Figure 7.1. Thus, the framework of TQM consists of the 11 elements of TQM and the four elements of overall business performance. This framework was based on the hypothesis that TQM implementation has effects on employee satisfaction, product quality, customer satisfaction, and strategic business performance. These hypotheses were confirmed by the questionnaire survey data from 212 Chinese manufacturing firms. Of the 11 TQM elements leadership is the most important, a finding obtained from the ten structured interviews in Chinese manufacturing firms. Of the four elements of overall business performance, employee satisfaction has effects on product quality and customer satisfaction; it also has an indirect effect on strategic business performance through product quality and customer satisfaction. Product quality has effects on customer satisfaction and strategic business performance. As discussed previously, in the long run, customer satisfaction may have positive effects on strategic business performance. In this framework of TQM, the 11 TQM elements as a whole are regarded as enablers that can lead to improvements of overall business performance. In other words, overall business performance is the result of TQM implementation.
TQM Implementation Practices

A set of TQM implementation practices and their explanations are presented in this section. In fact, implementing TQM is to implement the 11 TQM elements. There is a set of TQM implementation practices supporting the implementation of each element. Based on the literature review and the results obtained from the structured interviews in Chinese manufacturing firms, a number of TQM implementation practices were considered important for Chinese manufacturing firms. These practices are presented in Figure 7.2. In fact, a firm is a dynamic system; many activities are interrelated. Therefore, some practices presented in one element may be suitable for another. This section presents the explanations, suggestions, or potential benefits of these TQM implementation practices, which were based on existing TQM knowledge and the TQM implementation in the ten interviewed Chinese manufacturing firms. Such information may assist or encourage firms to use these practices to improve their TQM implementation efforts and overall business performance. It should be noted that each TQM practice is only briefly described in this section due to the text limitation. Thus, the descriptions of these TQM practices are not complete. In order to bridge the gap, more references were provided for these practices. Readers can refer to these references for a better understanding of these TQM practices.
The Concept of Continuous Improvement by TQM

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, 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.¹

There are three major mechanisms of prevention:

1. Preventing mistakes (defects) from occurring (mistake-proofing or poka-yoke).
2. 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 operation).

3. Where mistakes recur, stopping production until the process can be corrected, to prevent the production of more defects.

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 by 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.

**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 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.7 Always keep in mind that TQM should be purpose driven. Be clear on the organization’s vision for the future and stay focused on it. TQM can be a powerful technique for unleashing employee creativity and potential, reducing bureaucracy and costs, and improving service to clients and the community.

POTENTIAL BENEFITS OF TQM TO HIGHER EDUCATION INSTITUTIONS

Most institutions of higher education in the U.S. are facing numerous challenges and competition--shrinking budgets; dropping enrollments; fierce competition among institutions to attract students; competition from major companies that are educating their employees internally; competition from world class institutions in Japan, Europe and other countries (Bemowski, 1991). There are also pressures for increased accountability and outcome assessment. Adoption of TQM will help institutions of higher education maintain their competitiveness, eliminate inefficiencies in the organization, help focus on the market needs, achieve high performance in all areas, and satisfy the needs of all stakeholders (Edwards, 1993). In order to produce quality leaders for tomorrow, an institution of higher education can no longer afford to teach "one set of values [TQM] and adopting a different set for itself"

TQM EXPERIENCES IN HIGHER EDUCATION INSTITUTIONS

As mentioned earlier, institutions of higher education have been slow in adopting the concept
of TQM. However, many institutions have implemented TQM, at least in some parts of their organization. Bingham (1993), Vazzana, et al (1997) and Schonberger (1995) have described adjusting TQM from its industrial birthplace to the halls of academe. The following are just a few examples of the many institutions of higher education that have adopted TQM to improve their operations. Oregon State University has adopted the TQM concepts for managing its physical-plant office, which experienced a 25 percent reduction in completion time for remodeling projects. Lamar University in Beaumont, Texas used a team approach to TQM implementation and showed improvement in getting potential students to apply for admission earlier and improvements in staff development (Montano and Utter, 1999). The School of Business at Edinboro University of Pennsylvania has adopted TQM and improved class scheduling, hiring and employee morale (McMillen, 1991). The Ohio State University used a nine-phase program for TQM implementation (Coate, 1990). At Babson College, TQM was integrated in curriculum and used as a way to run the institution (Engelkemeyer, 1993). Auburn University has used TQM to restructure programs and services in its student affairs division.

Several universities, colleges and junior colleges have used quality circles to increase their effectiveness in areas of residential life (Keller, 1987), student learning support (Wilkinson, 1986), work life management of college employees (Shibata, 1984), college administration (Moretz, 1983; Ladwig, 1985; Ruff, 1984; and Romine, 1981), library facilities (Sell and Mortola, 1985), and student services (Deegan, 1984). Most of the reported experiences with the quality circle implementation in higher education have been positive. However, there is some evidence that the success of quality circle programs may be jeopardized by problems, such as inadequate training, problematic group membership, exclusion of supervisors, etc.

Both sides of the issue are being aired. Not everyone thinks that TQM belongs on campus. TQM may be useful in support and administrative areas, but classroom norms seem to violate the assumptions of TQM, (Jauch and Orwig, 1997); some question the value of TQM in higher education, (Fisher, 1993); and others identify some critical barriers to the utilization of TQM in academia (Lam and Zhao, 1998); and yet another suggests that the basic postulates of quality within TQM are incompatible with the philosophy of academe (Berisiman, 1995).
The above examples illustrate that TQM is being used in colleges and universities. However, most of the early TQM applications have been in the support or administrative areas, not in the classroom. This is changing. Many recent applications of TQM in higher education have focused on the central academic functions such as academic program delivery (Watson and Hallett, 1995), faculty evaluation (Altman and Pratt, 1997), in the classroom (Mehrenz, Weinroth and Israeli, 1997), and a quest for a new breed of educators (Demichiell, 1997). What is missing in the current efforts is a systemic model for the implementation of TQM for the university as a whole.

**APPROACHES TO STRATEGY IMPLEMENTATION**

The key task in implementing TQM is to unite the total organization behind this strategy. The organization then designs its operations to the requirements for successful execution of strategy. Successful implementation of strategy, therefore, requires creating a "fit" among the internal processes and subsystems of the institution (Strickland and Thompson, 1999). The literature in the field of strategic management provides many approaches to strategy implementation. However, it must be remembered that there is no one best way for implementing strategy. The specific action agenda needed for strategy implementation will vary from organization to organization.

Strickland and Thompson (1999) summarize the key implementation tasks as consisting of the following eight key elements: (1) exercising strategic leadership, (2) building an organization capable of successfully executing the strategy, (3) establishing a strategy-supportive budget, (4) installing appropriate administrative support systems, (5) designing and installing rewards and incentives linked to performance objectives of TQM, (6) shaping an organizational culture to fit the TQM philosophy, (7) Allocating ample resources to strategy critical activities, (8) Instituting best practices and pushing for continuous improvement. The "goodness of fit" among the eight elements would determine the success of the TQM strategy. Another framework for examining the fit among the critical areas is provided by the McKinsey's 7-S framework (Waterman, 1984). These seven areas are strategy, organization structure, shared values, skills, systems, staff, and management style.

Brodwin and Bourgeois (1984) have described five basic approaches to strategy
implementation. Their approaches are based upon the roles and methods used by the president in implementing strategy. The approaches are:

The commander and the organizational change approaches are the traditional ways of implementing strategies. The strategy formulators and implementers are separated from each other. There is little sharing of information between the two groups and results in too many unintended and dysfunctional outcomes. The collaborative approach involves the top management team in the process and thus increases commitment and lowers resistance from top management. However, this approach still separates the thinkers from the "doers" and is likely to result in a negotiated compromise. Although, the organizational change approach can be used to implement relatively more difficult strategies in a wider variety of organizations, these three approaches, according to Brodwin and Bourgeois (1984), can be effective only in small institutions operating in a relatively stable environment.

The cultural approach is an extension of the collaborative approach but it provides for participation by more levels of managers and, therefore, fosters greater institutional commitment to the TQM. It still maintains the distinction between the planners and the implementers and does not tap into the creative abilities of employees. However, a strong institutional culture may breed conformity and thus can hinder creativity in the long run.

The crescive approach is essentially a bottom-up approach where the president loosens his/her control over the strategy making process and instead sets the employees' premises—the notion of what will constitute strategic actions, and acts as a judge of plans formulated at the lower level. This approach provides for the broadest participation and eliminates the difference between the planners and the implementers. The president can facilitate the crescive approach by (1) keeping the organization open for new and potentially discrepant information, (2) articulating a general strategy of superordinate goals to guide the organization, (3) by shaping the premises by which strategic options are selected at all levels, and (4) shaping the institution through day-to-day decision in the "logical incrementalism" fashion and not in one radical step. The cultural and the crescive approaches are particularly suitable for use in large and complex organizations.
Higher education institutions are complex organizations with a strong sense of tradition and a distinct culture. According to Vroom (1984) institutions of higher Education are also characterized by vagueness in their educational mission statement and a tendency toward anarchy in the internal governing structure. The organizational structure is generally bifurcated between academic and administrative components. One of the strong values of the academic component is the "academic freedom" where it may not tolerate any interference from outside sources. The pressure of factors such as tenure creates a unique situation at higher education institutions.

Higher education institutions have many stakeholders who must be involved in the TQM process. Apart from administrators, faculty, staff, and students, the institutions also need to account for the interests of students' parents, government agencies, benefactors, alumni, the community, and accreditation agencies. Each of these stakeholders makes demands upon the institution and the TQM must bring these stakeholders into the TQM process to maximize "client satisfaction."

**IMPLEMENTING TQM AT HIGHER EDUCATION INSTITUTIONS**

The choice of a method for TQM implementation will depend upon situational factors such as size of the institution, complexity of programs, institutional culture, and the style of the management. In view of the complex characteristics of higher education institutions as discussed above, the implementation approach should be based upon high participation. The crescive or the cultural approach as described by Brodwin and Bourgeois (1984) meets these requirements. In the cultural approach the president assumes the role of a coach and focuses upon defining and developing the new culture of the institution. In the crescive approach, as discussed earlier, the president's role is changed to that of a premise setter and a judge. Given the uniqueness of culture, the TQM process would have to be managed in a way that it does not trample the "sacred cows"--such as academic freedom--of the organization.

We propose an eleven-step model for implementing TQM in larger institutions of higher education.
The president promotes the value through frequent symbolic and substantive actions.

The president adopts quality as the core of institutional value system and communicates this value, and works to develop commitment to it throughout the institution.

Educate administrators and academic deans in TQM and customer orientation, in team/participative management.

Identify customers’ needs and set performance objectives.

Train and designate "internal resource persons" who provide technical assistance to the rest of the institution.

Train faculty, staff, and employees in appropriate statistical techniques, process analysis, decisionmaking, and customer orientation.

Form quality teams to seek continual improvement in the process and identify individual quality champions.

Define/delegate authority throughout the institution.

Develop performance measurement systems to continuously monitor the progress of the institution; the measurement should focus on the stakeholders' needs satisfaction.

Institute incentives and reward systems and relate them to TQM objectives.

Work continuously to reduce the resistance to change.

This model fits very well with the model developed by Tennor and DeToro (1992), which combines the teachings of quality gurus--Deming, Juran, Crosby, and Feigenbaum. The TQM implementation, as presented by Tenner and DeToro, is built on three fundamental principles of total quality (customer focus, process improvement, total involvement) and six supporting elements (leadership, education and training, support structure, communication, reward and recognition, and measurement). The compatibility of our TQM implementation model for higher education and the general TQM implementation model presented by Tennor and DeToro (1992) is illustrated in the following figure.

In implementing TQM as an integrating mechanism in educational institutions, the president has to first adopt and disseminate the TQM vision throughout the institution. In its strategic leadership role the president should "sell" the concept of TQM through symbolic and substantive actions and educate other administrators including academic
deans, the faculty, staff, and other employees in TQM concepts and techniques. The emphasis here is to build institution-wide commitment to a culture that values quality and customer orientation. The education may be provided through the development of internal resource persons, or by hiring external resources. These programs should, preferably, be held at an off-campus location to minimize distractions. The TQM education program may be followed by a retreat for the president and the top administrators where they focus on building a consensus on and commitment for the new way of doing things.

Successful implementation of TQM will require creating and nurturing a system of common goals and objectives, values, beliefs, and attitudes—a common vision—in the institution. The institutional objectives are geared toward maximizing client satisfaction. The major task of the TQM leaders and champions in different departments and divisions will be to foster a supportive organizational climate. The president of the institution would have to take a leadership role and the primary responsibility for creating and communicating organizational standards that supports and nurtures the TQM philosophy.

The new organization structure for TQM is team based and should meet several criteria. It must be responsive to the needs of the clients and provide for employee involvement at all levels. It should provide for open communication and coordination among various organizational units and distribute authority needed to manage each organizational unit. The institution should examine its approaches to staffing with a view to build and nurture the skills, competence, managerial talent and technical know-how needed to manage organizational processes. The administrative support system should establish TQM facilitating policies and procedures. The support system should provide strategy-critical information on a timely basis (Thompson and Strickland, 1999).

As mentioned earlier, higher education institutions have many stakeholders or clients. The objective of TQM is maximum client satisfaction; the institution should develop links with all client groups and provide mechanisms for frequent interactions to assess their needs. The client needs assessment data would provide basis for setting up institutional goals and objectives. In order to build commitment to the new values of the organization, clear work objectives should be identified. Next, the incentives and
reward structure should be modified to link with performance targets. The institution also needs to design and establish appropriate evaluation and control system to monitor client-satisfaction, quality improvement, and goal attainment.

The proposed model for implementing TQM will require changes and adjustments all over the organization. According to Lewin (1951), any situation is characterized by a state of equilibrium between forces constantly pushing against one another. One set of these forces is pressure for change and the opposing forces are resistance to change. To facilitate change the organization should first disturb this equilibrium in favor of the pressures for change. The Crescive approach offers several advantages that reduce the resisting forces: the change process is incremental, and not radical; the employee participation is maximized; the change is initiated and implemented by the employee; and the top management control is minimized. However, the president should be ever vigilant about identifying the forces of resistance and create conditions to overcome those forces.

**How to Implement Total Quality Management TQM?**

The most important purpose for the implementation of a Total Quality Management TQM process is to get the assigned task completed at the right time and with quality improvement.

The Six Cs for successful implementation of a Total Quality Management (TQM) process are depicted as follows:
The Six Cs required for proper implementation of a TQM are given below.

- There must be a quality improvement commitment from all employees of the organization.
- Organization must follow a modern quality improvement culture on a constant basis.
- Continuous improvement must take place in all policies, procedures, and activities laid down by management for the organization.
- Cooperation and experience of employees must be utilized to improve strategies and enhance performance.
- Focus on customers' requirements and satisfaction of their expectations are very important for long-term survival of the business.
- Effective controls must be laid down to monitor and measure the real performance of the business.

6 Cs of TQM
The 6 Cs of TQM process are depicted in the following image.

Now let's discuss briefly the Six Cs of TQM that are very important and essential to successfully implement the Total Quality Management.

1. Commitment from Employees

In an organization, the Total Quality Management (TQM) policies shall be developed. These policies shall be binding on all employees of the organization. Due to this, the quality improvement will become an essential part of everyone’s work.

Furthermore, this will ensure a Quality Improvement commitment from all the employees for the work deployed to them.
2. **Quality Improvement Culture**

There shall be a Quality Improvement Culture in the organization. The culture followed needs to be modernized on a continuous basis to encourage employee's feedback. This will ensure employee comfort towards effective administration of allotted work.

3. **Continuous Improvement in Process**

Total Quality Management (TQM) is a continuous process and not a program. This requires constant improvement in all the related policies, procedures and controls laid down by the management.

There should be a continuous search of the proficiency to do the task better. This will always result in scope for improvement, although such improvement may be small.

4. **Cooperation from Employees**

The application of Total Quality Management (TQM) is in direct relation with the Total Employee Involvement during and after the implementation of the same.

The experience and cooperation of the employees are utilized in the development of improved strategies and performance measures.

5. **Focus on Customer Requirements**

Total Quality Management (TQM) process shall be prepared by focusing on customers' requirements and their expectations from the products and services. In today's market, customer requires and expects perfect goods and services with zero defects.

Focus on customer requirement is significant to survive in long-term and to build prominent relationship with the customers.

6. **Effective Control shall be laid down**

The controls are to be laid down for monitoring and measuring the performance of the business. The controls also help to rectify the deficiencies, if any, in the business process.

The checklist of control policies shall include all documents or manuals of the current best business practices.

**Final Glance on TQM**
• Total quality management (TQM) is a strategic technique for continuous improvement in the quality of products and services.

• TQM is an approach to achieve long-term success through customer satisfaction.

• Six Cs of TQM are very important and are required for the successful implementation of Total Quality Management.
CHAPTER-4

Methods and Materials

TQM, Model, Strategies and implementation Techniques in Management

TQM in Management Education
The concept of Total Quality Management (TQM) was developed by an American, W. Edwards 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.”

**Steps to Creating a Total Quality Management System**

1. Clarify Vision, Mission and Values

Employees need to know how what they do is tied to organizational strategy and objectives which makes it important that all employees understand where the organization is headed (its vision), what it hopes to accomplish (mission) and the operational principles (values) that will steer its priorities and decision making. Having a process to educate employees during new employee orientation and a communication process to help ensure that the mission, vision and values is always in front of the people is a major first step.

2. Identify Critical Success Factors (CSF)

Critical success factors help an organization focus on those things that help it meet objectives and move a little closer to achieving its mission. These performance based measures provide a gauge for determining how well the organization is meeting objectives.

Some example CSF:

- Financial Performance
- Customer Satisfaction
- Process Improvement
- Market Share
• Employee Satisfaction
• Product Quality

3. Develop Measures and Metrics to Track CSF Data

Once critical success factors are identified, there needs to be measurements put in place to monitor and track progress. This can be done through a reporting process that is used to collect specified data and share information with senior leaders. For example, if a goal is to increase customer satisfaction survey scores, there should be a goal and a measure to demonstrate achievement of the goal.

4. Identify Key Customer Group

Every organization has customers and understanding who the key customer groups are is important so that products and services can be developed based on customer requirements. The mistake a lot of organizations make is not acknowledging employees as a key customer group.

*Example Key Customer Groups:*

- Employees
- Customers
- Suppliers
- Vendors
- Volunteers

5. Solicit Customer Feedback

The only way for an organization to know how well they are meeting customer requirements is by simply asking the question. There should be a structured process to solicit feedback from each customer group in an effort to identify what is important to them. Organizations often make the mistake of thinking they know what is important to customers and ask the wrong survey questions. This this type of feedback is obtained through customer focus groups.
6. Develop Survey Tool

Next develop a customer satisfaction survey tool that is based on finding out what is important to customers. For example, customers might care more about quality than cost but if you are developing a product and trying to keep the cost down and skimping on the quality, you are creating a product that might not meet the needs of the customer.

There are lots of survey software available. One I like is SurveyGizmo which is an easy to use online survey tool. You can play with it and try it for free to see if its something that would benefit your organization.

7. Survey Each Customer Group

Each customer group should have a survey customized to their particular requirements and they should be surveyed to establish baseline data on the customers’ perception of current practice. This provides a starting point for improvements and demonstrates progress as improvement plans are implemented.

8. Develop Improvement Plan

Once the baseline is established you should develop an improvement plan based on customer feedback from each group. Improvement plans should be written in SMART goals format with assignments to specific staff for follow through.

*Goals May Include Some of the Following:*

- Process improvement initiatives, such as: customer call hold times
- Leadership Development: Walk-the-Talk
- Management Training/Development: How to manage employees in a quality environment
- Staff Training/Development: Customer Service
- Performance Management: Setting expectations, creating job descriptions that support the vision and holding staff accountable.
9. Resurvey

After a period of time (12-18 months), resurvey key customers to see if scores have improved. Customer needs and expectations change over time so being in-tune to changing needs and expectations is critical to long-term success.

10. Monitor CSF

It is important to monitor CSF monthly to ensure there is consistent progress toward goals. This also allows for course correction should priorities and objectives change during the review period.

11. Incorporate Satisfaction Data into Marketing Plans

Once you’ve achieved some positive results with your satisfaction data, use it as a marketing tool! A lot of successful organizations miss the boat by not letting others know what they do well. Customers want to know how an organization’s internal processes work especially if those processes help to deliver an outstanding product or service!

12. Technology

Make sure technology is user-friendly and supports targeted improvements. For example, a website should be easy to navigate as well as easy to find (SEO) and the content should be easy to understand.

Total Quality Management (TQM) is an approach that organizations use to improve their internal processes and increase customer satisfaction. When it is properly implemented, this style of management can lead to decreased costs related to corrective or preventative maintenance, better overall performance, and an increased number of happy and loyal customers.

However, TQM is not something that happens overnight. While there are a number of software solutions that will help organizations quickly start to implement a quality management system, there are some underlying philosophies that the company must integrate throughout every department of the company and at every level of management. Whatever
other resources you use, you should adopt these seven important principles of Total Quality Management as a foundation for all your activities.

1. **Quality can and must be managed**

Many companies have wallowed in a repetitive cycle of chaos and customer complaints. They believe that their operations are simply too large to effectively manage the level of quality. The first step in the TQM process, then, is to realize there is a problem and that it can be controlled.

2. **Processes, not people, are the problem**

If your process is causing problems, it won’t matter how many times you hire new employees or how many training sessions you put them through. Correct the process and then train your people on these new procedures.

3. **Don’t treat symptoms, look for the cure**

If you just patch over the underlying problems in the process, you will never be able to fully reach your potential. If, for example, your shipping department is falling behind, you may find that it is because of holdups in manufacturing. Go for the source to correct the problem.

4. **Every employee is responsible for quality**

Everyone in the company, from the workers on the line to the upper management, must realize that they have an important part to play in ensuring high levels of quality in their products and services. Everyone has a customer to delight, and they must all step up and take responsibility for them.

5. **Quality must be measurable**

A quality management system is only effective when you can quantify the results. You need to see how the process is implemented and if it is having the desired effect. This will help you set your goals for the future and ensure that every department is working toward the same result.
6. Quality improvements must be continuous

Total Quality Management is not something that can be done once and then forgotten. It’s not a management “phase” that will end after a problem has been corrected. Real improvements must occur frequently and continually in order to increase customer satisfaction and loyalty.

7. Quality is a long-term investment

Quality management is not a quick fix. You can purchase QMS software that will help you get things started, but you should understand that real results won’t occur immediately. TQM is a long-term investment, and it is designed to help you find long-term success.

Before you start looking for any kind of quality management software, it is important to make sure you are capable of implementing these fundamental principles throughout the company. This kind of management style can be a huge culture change in some companies, and sometimes the shift can come with some growing pains, but if you build on a foundation of quality principles, you will be equipped to make this change and start working toward real long-term success. Quality management ensures close coordination between employees of an organization. It inculcates a strong feeling of team work in the employees.

TQM Practices Model

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 “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 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.

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.

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.

**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.

**FIVE STRATEGIES TO DEVELOP THE TQM PROCESS**
Strategy 1: The TQM element approach

The TQM element approach takes key business processes and/or organizational units and uses the tools of TQM to foster improvements. This method was widely used in the early 1980s as companies tried to implement parts of TQM as they learned them.

Examples of this approach include quality circles, statistical process control, Taguchi methods, and quality function deployment.

Strategy 2: The guru approach

The guru approach uses the teachings and writings of one or more of the leading quality thinkers as a guide against which to determine where the organization has deficiencies. Then, the organization makes appropriate changes to remedy those deficiencies.

For example, managers might study Deming’s 14 points or attend the Crosby College. They would then work on implementing the approach learned.

Strategy 3: The organization model approach

In this approach, individuals or teams visit organizations that have taken a leadership role in TQM and determine their processes and reasons for success. They then integrate these ideas with their own ideas to develop an organizational model adapted for their specific organization.

This method was used widely in the late 1980s and is exemplified by the initial recipients of the Malcolm Baldrige National Quality Award.

Strategy 4: The Japanese total quality approach

Organizations using the Japanese total quality approach examine the detailed implementation techniques and strategies employed by Deming Prize–winning companies and use this experience to develop a long-range master plan for in-house use.

This approach was used by Florida Power and Light—among others—to implement TQM and to compete for and win the Deming Prize.

Strategy 5: The award criteria approach
When using this model, an organization uses the criteria of a quality award, for example, the Deming Prize, the European Quality Award, or the Malcolm Baldrige National Quality Award, to identify areas for improvement. Under this approach, TQM implementation focuses on meeting specific award criteria.

Although some argue that this is not an appropriate use of award criteria, some organizations do use this approach and it can result in improvement.

**A Framework of TQM**

The framework of TQM was formulated on the basis of the theoretical model of TQM implementation constructs and overall business performance. The combination of the elements of TQM and overall business performance was the framework of TQM, which is displayed in Figure 7.1. Thus, the framework of TQM consists of the 11 elements of TQM and the four elements of overall business performance. This framework was based on the hypothesis that TQM implementation has effects on employee satisfaction, product quality, customer satisfaction, and strategic business performance. These hypotheses were confirmed by the questionnaire survey data from 212 Chinese manufacturing firms. Of the 11 TQM elements leadership is the most important, a finding obtained from the ten structured interviews in Chinese manufacturing firms. Of the four elements of overall business performance, employee satisfaction has effects on product quality and customer satisfaction; it also has an indirect effect on strategic business performance through product quality and customer satisfaction. Product quality has effects on customer satisfaction and strategic business performance. As discussed previously, in the long run, customer satisfaction may have positive effects on strategic business performance. In this framework of TQM, the 11 TQM elements as a whole are regarded as enablers that can lead to improvements of overall business performance. In other words, overall business performance is the result of TQM implementation.
TQM Implementation Practices

A set of TQM implementation practices and their explanations are presented in this section. In fact, implementing TQM is to implement the 11 TQM elements. There is a set of TQM implementation practices supporting the implementation of each element. Based on the literature review and the results obtained from the structured interviews in Chinese manufacturing firms, a number of TQM implementation practices were considered important for Chinese manufacturing firms. These practices are presented in Figure 7.2. In fact, a firm is a dynamic system; many activities are interrelated. Therefore, some practices presented in one element may be suitable for another. This section presents the explanations, suggestions, or potential benefits of these TQM implementation practices, which were based on existing TQM knowledge and the TQM implementation in the ten interviewed Chinese manufacturing firms. Such information may assist or encourage firms to use these practices to improve their TQM implementation efforts and overall business performance. It should be noted that each TQM practice is only briefly described in this section due to the text limitation. Thus, the descriptions of these TQM practices are not complete. In order to bridge the gap, more references were provided for these practices. Readers can refer to these references for a better understanding of these TQM practices.
The Concept of Continuous Improvement by TQM

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, 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.¹

There are three major mechanisms of prevention:

4. Preventing mistakes (defects) from occurring (mistake-proofing or poka-yoke).
5. 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 operation).

6. Where mistakes recur, stopping production until the process can be corrected, to prevent the production of more defects.

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 by 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.

**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 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.6

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. Always keep in mind that TQM should be purpose driven. Be clear on the organization’s vision for the future and stay focused on it. TQM can be a powerful technique for unleashing employee creativity and potential, reducing bureaucracy and costs, and improving service to clients and the community.

POTENTIAL BENEFITS OF TQM TO HIGHER EDUCATION INSTITUTIONS

Most institutions of higher education in the U.S. are facing numerous challenges and competition--shrinking budgets; dropping enrollments; fierce competition among institutions to attract students; competition from major companies that are educating their employees internally; competition from world class institutions in Japan, Europe and other countries (Bemowski, 1991). There are also pressures for increased accountability and outcome assessment. Adoption of TQM will help institutions of higher education maintain their competitiveness, eliminate inefficiencies in the organization, help focus on the market needs, achieve high performance in all areas, and satisfy the needs of all stakeholders (Edwards, 1993). In order to produce quality leaders for tomorrow, an institution of higher education can no longer afford to teach "one set of values [TQM] and adopting a different set for itself"

TQM EXPERIENCES IN HIGHER EDUCATION INSTITUTIONS

As mentioned earlier, institutions of higher education have been slow in adopting the concept
of TQM. However, many institutions have implemented TQM, at least in some parts of their organization. Bingham (1993), Vazzana, et al (1997) and Schonberger (1995) have described adjusting TQM from its industrial birthplace to the halls of academe. The following are just a few examples of the many institutions of higher education that have adopted TQM to improve their operations. Oregon State University has adopted the TQM concepts for managing its physical-plant office, which experienced a 25 percent reduction in completion time for remodeling projects. Lamar University in Beaumont, Texas used a team approach to TQM implementation and showed improvement in getting potential students to apply for admission earlier and improvements in staff development (Montano and Utter, 1999). The School of Business at Edinboro University of Pennsylvania has adopted TQM and improved class scheduling, hiring and employee morale (McMillen, 1991). The Ohio State University used a nine-phase program for TQM implementation (Coate, 1990). At Babson College, TQM was integrated in curriculum and used as a way to run the institution (Engelkemeyer, 1993). Auburn University has used TQM to restructure programs and services in its student affairs division.

Several universities, colleges and junior colleges have used quality circles to increase their effectiveness in areas of residential life (Keller, 1987), student learning support (Wilkinson, 1986), work life management of college employees (Shibata, 1984), college administration (Moretz, 1983; Ladwig, 1985; Ruff, 1984; and Romine, 1981), library facilities (Sell and Mortola, 1985), and student services (Deegan, 1984). Most of the reported experiences with the quality circle implementation in higher education have been positive. However, there is some evidence that the success of quality circle programs may be jeopardized by problems, such as inadequate training, problematic group membership, exclusion of supervisors, etc.

Both sides of the issue are being aired. Not everyone thinks that TQM belongs on campus. TQM may be useful in support and administrative areas, but classroom norms seem to violate the assumptions of TQM, (Jauch and Orwig, 1997); some question the value of TQM in higher education, (Fisher, 1993); and others identify some critical barriers to the utilization of TQM in academia (Lam and Zhao, 1998); and yet another suggests that the basic postulates of quality within TQM are incompatible with the philosophy of academe (Berisiman, 1995).
The above examples illustrate that TQM is being used in colleges and universities. However, most of the early TQM applications have been in the support or administrative areas, not in the classroom. This is changing. Many recent applications of TQM in higher education have focused on the central academic functions such as academic program delivery (Watson and Hallett, 1995), faculty evaluation (Altman and Pratt, 1997), in the classroom (Mehrenz, Weinroth and Israeli, 1997), and a quest for a new breed of educators (Demichiell, 1997). What is missing in the current efforts is a systemic model for the implementation of TQM for the university as a whole.

APPROACHES TO STRATEGY IMPLEMENTATION

The key task in implementing TQM is to unite the total organization behind this strategy. The organization then designs its operations to the requirements for successful execution of strategy. Successful implementation of strategy, therefore, requires creating a "fit" among the internal processes and subsystems of the institution (Strickland and Thompson, 1999). The literature in the field of strategic management provides many approaches to strategy implementation. However, it must be remembered that there is no one best way for implementing strategy. The specific action agenda needed for strategy implementation will vary from organization to organization.

Strickland and Thompson (1999) summarize the key implementation tasks as consisting of the following eight key elements: (1) exercising strategic leadership, (2) building an organization capable of successfully executing the strategy, (3) establishing a strategy-supportive budget, (4) installing appropriate administrative support systems, (5) designing and installing rewards and incentives linked to performance objectives of TQM, (6) shaping an organizational culture to fit the TQM philosophy, (7) Allocating ample resources to strategy critical activities, (8) Instituting best practices and pushing for continuous improvement. The "goodness of fit" among the eight elements would determine the success of the TQM strategy. Another framework for examining the fit among the critical areas is provided by the McKinsey's 7-S framework (Waterman, 1984). These seven areas are strategy, organization structure, shared values, skills, systems, staff, and management style.

Brodwin and Bourgeois (1984) have described five basic approaches to strategy
implementation. Their approaches are based upon the roles and methods used by the president in implementing strategy. The approaches are:

The commander and the organizational change approaches are the traditional ways of implementing strategies. The strategy formulators and implementers are separated from each other. There is little sharing of information between the two groups and results in too many unintended and dysfunctional outcomes. The collaborative approach involves the top management team in the process and thus increases commitment and lowers resistance from top management. However, this approach still separates the thinkers from the "doers" and is likely to result in a negotiated compromise. Although, the organizational change approach can be used to implement relatively more difficult strategies in a wider variety of organizations, these three approaches, according to Brodwin and Bourgeois (1984), can be effective only in small institutions operating in a relatively stable environment.

The cultural approach is an extension of the collaborative approach but it provides for participation by more levels of managers and, therefore, fosters greater institutional commitment to the TQM. It still maintains the distinction between the planners and the implementers and does not tap into the creative abilities of employees. However, a strong institutional culture may breed conformity and thus can hinder creativity in the long run.

The crescive approach is essentially a bottom-up approach where the president loosens his/her control over the strategy making process and instead sets the employees' premises--the notion of what will constitute strategic actions, and acts as a judge of plans formulated at the lower level. This approach provides for the broadest participation and eliminates the difference between the planners and the implementers. The president can facilitate the crescive approach by (1) keeping the organization open for new and potentially discrepant information, (2) articulating a general strategy of superordinate goals to guide the organization, (3) by shaping the premises by which strategic options are selected at all levels, and (4) shaping the institution through day-to-day decision in the "logical incrementalism" fashion and not in one radical step. The cultural and the crescive approaches are particularly suitable for use in large and complex organizations.
SOME CHARACTERISTICS OF HIGHER EDUCATION INSTITUTIONS

Higher education institutions are complex organizations with a strong sense of tradition and a distinct culture. According to Vroom (1984) institutions of higher Education are also characterized by vagueness in their educational mission statement and a tendency toward anarchy in the internal governing structure. The organizational structure is generally bifurcated between academic and administrative components. One of the strong values of the academic component is the "academic freedom" where it may not tolerate any interference from outside sources. The pressure of factors such as tenure creates a unique situation at higher education institutions.

Higher education institutions have many stakeholders who must be involved in the TQM process. Apart from administrators, faculty, staff, and students, the institutions also need to account for the interests of students' parents, government agencies, benefactors, alumni, the community, and accreditation agencies. Each of these stakeholders makes demands upon the institution and the TQM must bring these stakeholders into the TQM process to maximize "client satisfaction."

IMPLEMENTING TQM AT HIGHER EDUCATION INSTITUTIONS

The choice of a method for TQM implementation will depend upon situational factors such as size of the institution, complexity of programs, institutional culture, and the style of the management. In view of the complex characteristics of higher education institutions as discussed above, the implementation approach should be based upon high participation. The crescive or the cultural approach as described by Brodwin and Bourgeois (1984) meets these requirements. In the cultural approach the president assumes the role of a coach and focuses upon defining and developing the new culture of the institution. In the crescive approach, as discussed earlier, the president's role is changed to that of a premise setter and a judge. Given the uniqueness of culture, the TQM process would have to be managed in a way that it does not trample the "sacred cows"--such as academic freedom--of the organization.

We propose an eleven-step model for implementing TQM in larger institutions of higher education.
• The president promotes the value through frequent symbolic and substantive actions.
• The president adopts quality as the core of institutional value system and communicates this value, and works to develop commitment to it throughout the institution.
• Educate administrators and academic deans in TQM and customer orientation, in team/participative management.
• Identify customers’ needs and set performance objectives.
• Train and designate "internal resource persons" who provide technical assistance to the rest of the institution.
• Train faculty, staff, and employees in appropriate statistical techniques, process analysis, decisionmaking, and customer orientation.
• Form quality teams to seek continual improvement in the process and identify individual quality champions.
• Define/delegate authority throughout the institution.
• Develop performance measurement systems to continuously monitor the progress of the institution; the measurement should focus on the stakeholders' needs satisfaction.
• Institute incentives and reward systems and relate them to TQM objectives.
• Work continuously to reduce the resistance to change.

This model fits very well with the model developed by Tennor and DeToro (1992), which combines the teachings of quality gurus--Deming, Juran, Crosby, and Feigenbaum. The TQM implementation, as presented by Tenner and DeToro, is built on three fundamental principles of total quality (customer focus, process improvement, total involvement) and six supporting elements (leadership, education and training, support structure, communication, reward and recognition, and measurement). The compatibility of our TQM implementation model for higher education and the general TQM implementation model presented by Tennor and DeToro (1992) is illustrated in the following figure.

In implementing TQM as an integrating mechanism in educational institutions, the president has to first adopt and disseminate the TQM vision throughout the institution. In its strategic leadership role the president should "sell" the concept of TQM through symbolic and substantive actions and educate other administrators including academic
deans, the faculty, staff, and other employees in TQM concepts and techniques. The emphasis here is to build institution-wide commitment to a culture that values quality and customer orientation. The education may be provided through the development of internal resource persons, or by hiring external resources. These programs should, preferably, be held at an off-campus location to minimize distractions. The TQM education program may be followed by a retreat for the president and the top administrators where they focus on building a consensus on and commitment for the new way of doing things.

Successful implementation of TQM will require creating and nurturing a system of common goals and objectives, values, beliefs, and attitudes—a common vision—in the institution. The institutional objectives are geared toward maximizing client satisfaction. The major task of the TQM leaders and champions in different departments and divisions will be to foster a supportive organizational climate. The president of the institution would have to take a leadership role and the primary responsibility for creating and communicating organizational standards that supports and nurtures the TQM philosophy.

The new organization structure for TQM is team based and should meet several criteria. It must be responsive to the needs of the clients and provide for employee involvement at all levels. It should provide for open communication and coordination among various organizational units and distribute authority needed to manage each organizational unit. The institution should examine its approaches to staffing with a view to build and nurture the skills, competence, managerial talent and technical know-how needed to manage organizational processes. The administrative support system should establish TQM facilitating policies and procedures. The support system should provide strategy-critical information on a timely basis (Thompson and Strickland, 1999).

As mentioned earlier, higher education institutions have many stakeholders or clients. The objective of TQM is maximum client satisfaction; the institution should develop links with all client groups and provide mechanisms for frequent interactions to assess their needs. The client needs assessment data would provide basis for setting up institutional goals and objectives. In order to build commitment to the new values of the organization, clear work objectives should be identified. Next, the incentives and
reward structure should be modified to link with performance targets. The institution also needs to design and establish appropriate evaluation and control system to monitor client-satisfaction, quality improvement, and goal attainment.

The proposed model for implementing TQM will require changes and adjustments all over the organization. According to Lewin (1951), any situation is characterized by a state of equilibrium between forces constantly pushing against one another. One set of these forces is pressure for change and the opposing forces are resistance to change. To facilitate change the organization should first disturb this equilibrium in favor of the pressures for change. The Crescive approach offers several advantages that reduce the resisting forces: the change process is incremental, and not radical; the employee participation is maximized; the change is initiated and implemented by the employee; and the top management control is minimized. However, the president should be ever vigilant about identifying the forces of resistance and create conditions to overcome those forces.

**How to Implement Total Quality Management TQM?**

The most important purpose for the implementation of a Total Quality Management TQM process is to get the assigned task completed at the right time and with quality improvement.

The Six Cs for successful implementation of a Total Quality Management (TQM) process are depicted as follows:
The Six Cs required for proper implementation of a TQM are given below.

- There must be a quality improvement commitment from all employees of the organization.
- Organization must follow a modern quality improvement culture on a constant basis.
- Continuous improvement must take place in all policies, procedures, and activities laid down by management for the organization.
- Cooperation and experience of employees must be utilized to improve strategies and enhance performance.
- Focus on customers' requirements and satisfaction of their expectations are very important for long-term survival of the business.
- Effective controls must be laid down to monitor and measure the real performance of the business.

6 Cs of TQM
The 6 Cs of TQM process are depicted in the following image.

Now let's discuss briefly the Six Cs of TQM that are very important and essential to successfully implement the Total Quality Management.

1. Commitment from Employees

In an organization, the Total Quality Management (TQM) policies shall be developed. These policies shall be binding on all employees of the organization. Due to this, the quality improvement will become an essential part of everyone’s work.

Furthermore, this will ensure a Quality Improvement commitment from all the employees for the work deployed to them.
2. Quality Improvement Culture

There shall be a Quality Improvement Culture in the organization. The culture followed needs to be modernized on a continuous basis to encourage employee's feedback. This will ensure employee comfort towards effective administration of allotted work.

3. Continuous Improvement in Process

Total Quality Management (TQM) is a continuous process and not a program. This requires constant improvement in all the related policies, procedures and controls laid down by the management.

There should be a continuous search of the proficiency to do the task better. This will always result in scope for improvement, although such improvement may be small.

4. Cooperation from Employees

The application of Total Quality Management (TQM) is in direct relation with the Total Employee Involvement during and after the implementation of the same.

The experience and cooperation of the employees are utilized in the development of improved strategies and performance measures.

5. Focus on Customer Requirements

Total Quality Management (TQM) process shall be prepared by focusing on customers' requirements and their expectations from the products and services. In today's market, customer requires and expects perfect goods and services with zero defects.

Focus on customer requirement is significant to survive in long-term and to build prominent relationship with the customers.

6. Effective Control shall be laid down

The controls are to be laid down for monitoring and measuring the performance of the business. The controls also help to rectify the deficiencies, if any, in the business process.

The checklist of control policies shall include all documents or manuals of the current best business practices.

Final Glance on TQM
- Total quality management (TQM) is a strategic technique for continuous improvement in the quality of products and services.
- TQM is an approach to achieve long-term success through customer satisfaction.
- Six Cs of TQM are very important and are required for the successful implementation of Total Quality Management.