IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT
IN AN ACADEMIC UNIT
OF A HIGHER EDUCATION INSTITUTION

by

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A Thesis submitted to the Faculty of the Graduate School, Marquette University, in Partial Fulfillment of the Requirements for the Degree of Master of Arts

Milwaukee, Wisconsin
July 14, 1994
Higher education finds itself in an increasingly competitive environment. Faced with skyrocketing tuition, declining demographics, reduced funding and resources, calls for accountability and increased productivity, and a "buyer's market," colleges and universities are experiencing what many call a crisis in higher education. In order to improve and sustain long-term stability and quality of education, new and innovative operating procedures and techniques need to be explored and implemented. Total Quality Management, a philosophy of management principles being implemented by business and industry to improve cost effectiveness and produce quality products and services, is now being explored by higher education institutions as a possible solution to their current problems. Although TQM is starting to be embraced by a number of colleges and universities, it has primarily been implemented in the administrative, service, and non-academic units of these institutions. But what is the status of TQM in the academic areas? The purpose of this paper is to determine the extent that the Total Quality Management philosophy is being embraced by academia and the possible obstacles that need to be overcome in order for academic units to more readily accept and implement this management concept.

I extend my appreciation to Dr. Mark Kipfmueller and Dr. Ed Inderrieden for agreeing to be co-chairpersons of my
thesis committee and thank them and Drs. Jon Jensen and Terry Wong, who also served on my committee, for their encouragement, support and insightful suggestions. I also thank my colleagues and friends in Marquette University's College of Engineering for their unwavering friendship, support, and belief in me that I would attain my educational goals.
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CHAPTER I
INTRODUCTION

Background

No other management philosophy in recent memory has captured the fancy of American business like Total Quality Management (TQM). Having seen how TQM helped transform Japanese industry into the economic powerhouse it is today, many American companies followed Japan's lead by implementing the philosophy and tools of Total Quality Management. Recognized corporations like Motorola, Proctor and Gamble, and Xerox have witnessed the success that can come with effective TQM practice. The momentum of TQM has been so contagious that it swept through manufacturing and then into the service and health care sectors - and now is making initial steps in government and educational institutions. "Quality" has now become the watchword for manufacturing products, doing business and providing service. Although many companies, organizations and institutions have not yet joined the TQM movement, they are at least being influenced enough by it to think, talk and learn about this "new" philosophy of management.

What is Total Quality Management? The American Society for Quality Control's Quality Bibliography defines TQM as "a management approach to long-term success through customer satisfaction. . .based on the participation of all members of an organization in improving processes, products,
services, and the culture they work in" (The Conference Board, 1993, p. 7). Edward Sallis (1993) explains that "TQM is a practical but strategic approach to running an organization which focuses on the needs of its customers and clients. It aims to reject any outcome other than excellence. . . it can be thought of as a philosophy of never-ending improvement only achievable by and through people" (p. 35). Daniel Seymour (1993d) defines Total Quality Management as "a philosophy and set of tools that enable an organization to pursue systematically a definition of quality and a means for attaining quality" (p. 6). And finally, Brocka and Brocka (1992) explain that TQM "is a way of organizational life. It is a revolutionary way to invert the organizational hierarchy, put customers first, eliminate managerial deadwood, and overcome whatever stands in the way of fulfilling customer needs" (p. 48). TQM has come to mean many things to many people, but in its truest sense, TQM is a means of operating a business that seeks to maximize a firm's value through maximizing customer satisfaction at the lowest possible cost - and this is achieved by continuously improving all processes within a company and empowering employees (Spitzer, 1993, p. 61).

The history of TQM began in Japan at the end of World War II, when General Douglas MacArthur was put in charge of reconstructing Japanese society. At that time, war-ravaged Japan was desperate for foreign trade, (the proceeds from which would enable the country to feed its people), and its
manufacturers needed to learn how to reverse their reputation for shoddy, cheap goods by designing quality into their work systems. General MacArthur established a group called the Civil Communications Section (CCS), which began sponsoring management seminars for Japanese industry executives on quality techniques. One of the first of these seminars was run by a Ph.D. in mathematical physics named W. Edwards Deming, who not only introduced statistical methods of quality control, but also encouraged Japanese managers to treat their employees as partners, to do research on their customers and to be more scientific in their approach to business (Zemke, 1993). Deming's message was familiar to many Japanese industrialists, as they had heard lectures on quality control a few years earlier by American statisticians on loan to General MacArthur's staff from Bell Laboratories. And it was at Bell Labs where Deming worked with his mentor, Walter Shewhart, whose research focused on improving the reliability of telephones by building quality assurance into the entire system of design and manufacture, rather than relying on end-of-the-line inspection (Bonsting, 1992). Deming's influence in Japan was wide and he became a national hero. The transcripts of his lectures were turned into a book and sold by the Union of Japanese Scientists and Engineers (JUSE) to fund the Deming Prize for quality, now a famous industrial honor. Following Deming, Joseph M. Juran, a lawyer and electrical engineer and also a Bell Labs alumnus, was invited by JUSE to lecture in Japan. Juran's
focus, however, was on managerial responsibility for quality, planning, goal setting and continuous improvement, which filled in gaps left by Deming's preoccupation with the production floor. Armand Feigenbaum, head of quality control for General Electric, then introduced the Japanese to his doctrine of "total quality control" which persuaded them to start thinking of ways to "design quality into" the manufacturing process in order to eliminate defects before they occurred. After Juran and Feigenbaum lectured in Japan, quality was no longer just a technology, but a philosophy of business as well (Zemke, 1993).

After Deming's, Juran's, and Feigenbaum's quality crusade in Japan - sponsored by the Allied occupation force - the quality movement was virtually unknown in the United States until the 1970s. It was at that time that American manufacturers' profits began to fall, as customers the world over registered their preference for Japanese goods over American products. The reason for this preference was, in most cases, a simple one: Japanese items had consistently better quality at competitive prices. It was not until three decades after W. Edwards Deming's first lecture tour in Japan that Americans finally "discovered" him. On June 24, 1980, the now famous television documentary, "If Japan Can, Why Can't We?" focused on the growing disparity between U.S. and Japanese industrial competence. This NBC "white paper" introduced Deming as the man whose message had transformed Japan. In the film, Deming advised Americans to
resist the temptation to simply copy what the Japanese had done. Quality cannot be applied externally in a Band-Aid fashion, he maintained; it has to be developed. Deming urged Americans to learn how to "work smarter, not harder" by adopting a new quality-focused way of approaching the processes of production, the systems in which those processes take place, and the interaction of people within those processes and systems (Bonsting, 1992). At that same time, Philip Crosby, a generation younger than Deming and Juran, also helped to "jump-start" the quality movement in the United States through his advocacy of "zero defects" and his 1979 book, Quality is Free. Crosby's approach was more philosophical and conceptual than statistics-based and he emphasized management commitment to quality goals, and respect for employees and their efforts (Zemke, 1993).

And so around 1980, facing decreasing sales and profit margins and producing lesser quality products, American industry began to take quality to heart. Highest level executives from Texas Instruments, Xerox, IBM, Ford, and other major manufacturers listened to Dr. Deming's advice, which emphasized that "if it isn't measured, it won't happen," or they traveled to Crosby's Quality College in Florida for consciousness-raising (Schonberger, 1992). These executives went back to their offices and became trained in the techniques and tools of Total Quality Management and then began the lengthy process of implementing TQM into their companies. As the TQM movement
began to pick up momentum, more manufacturing companies started embracing its philosophy, techniques and tools by implementing their own programs – and the movement then began to make its impact in the service sector. According to The Conference Board's report Does Quality Work: A Review of Relevant Studies (1993), TQM is spreading through U.S. companies, resulting in change in management practices and corporate cultures, but it also finds that TQM is proving to be a long-term process demanding corporate commitment. It reported that many Fortune 1000 companies have adopted TQM, although it is more common among industrial than service firms. Adoption of TQM is also less common among smaller firms, but appears to be growing rapidly. George Easton (1993), an examiner for the U.S. government-established Malcolm Baldrige National Quality Award, given annually to companies that have outstanding total quality programs, assesses the current state of TQM in this country as favorable. He reports that an increasing number of companies are actively focused on quality as a key approach to improving their competitiveness. In a 1991 General Accounting Office review of 20 companies that were among the highest-scoring applicants in 1988 and 1989 for the Baldrige award, companies that adopted TQM practices experienced an overall improvement in corporate performance. In particular, they achieved significant improvements in employee relations, productivity, customer satisfaction, market share, and profitability (Brigham, 1993).
Although TQM found its beginnings in manufacturing and the production floor, it is beginning to make strides in the service industry, as indicated by Baldrige award recipients Ritz-Carlton Hotel Company, AT&T Universal Card Services, and the Federal Express Corporation - who are all from the service-sector (Easton, 1993). As further proof of TQM being implemented in service organizations, successes have been achieved at Oregon State University, First National Bank in Chicago, Parkview Episcopal Medical Center in Pueblo, Colorado, state government programs in Arizona, and even the Madison, Wisconsin police department (Becker, 1993). The Conference Board (1993) also reports that while evidence is weaker, TQM appears to be spreading in schools and non-profit organizations as well.

Despite its successes in Japan and in selected companies in the United States, TQM has been getting some negative "press" in recent years. Because of some well-publicized failed TQM programs, questions have arisen as to whether TQM is just another "management fad" that American business and industry have tried and abandoned. But Tracy Benson (1993) of Industry Week writes, "to hear it from those in the trenches, TQM is still in its infancy. And the prognosis from these people is that both as a philosophy and a long-term business strategy, TQM is here to stay. While awareness of quality issues rose considerably during the last decade, only in the last five years or so have companies in North America begun to embrace quality as a
total management concept. . .many of these infamous bad-news cases are instead the result of the way TQM has been applied" (p. 16). Baldrige award examiner Easton (1993) agrees, stating that "TQM in the U.S. is far from mature" but that "it is important that TQM approaches continue to be developed, refined, and expanded, even in companies that have already achieved considerable success" (p. 48). In Fortune, Jacob (1993) states, "Make no mistake: thoughtfully applied and modified, total quality's principles still represent a sound way to run a company" (p. 66). Finally, Daniel Seymour (1993b) argues that TQM "cannot be dismissed as another management fad. It is not academic whimsy. It is too well-grounded in a scientific approach to problem solving, and it has been tested, scrutinized, and revised in thousands of organizations over a period of more than three decades. Bottom line: It works" (p. ix).

The Problem And Its Importance

Higher education currently faces many of the same challenges that American industry faced in the 1970s—competition, lack of resources, spiraling costs, and concern from the public about the quality of education that is being provided to students.

At the 1990 annual meeting of the Education Commission of the States, lawmakers expressed dissatisfaction and frustration with spiraling college costs, inadequate
teaching of undergraduates, and lackluster progress in helping minority students complete their education (Seymour, 1993d). This dissatisfaction is being exemplified through state budget cuts: at the state level, James Mingle, executive director of the State Higher Education Executive Officers, points out that in the two years from 1991 to 1993 state appropriations to higher education declined more for the first time over any two-year period in the past 30 years, which, in turn, is forcing the schools to increase tuition, make across-the-board cuts, limit enrollments, cut course sections, eliminate course electives and sometimes phase out entire departments. And although private institutions have been less hurt by budget cuts, they are strongly affected by enrollment drops. Dependent on tuition income, there are limits to how much they can increase tuition because of shrinking dollars available for student aid (Major, 1994). Sharing this and additional data from the American Council on Education, Michael Major (1994), in the American Society for Engineering Education's Prism states that "signs of trouble are widespread. . . (these figures) are only some of the indicators of what many call a crisis in higher education" (p. 15).

It is also the "Age of Consumerism" in higher education - a buyer's market. These consumers are searching for quality and are carefully weighing the benefits of attending one school vs others. Students apply to many more schools now than they did in the past. Once they've been accepted,
they compare financial aid packages, facilities, etc. Transfers are up as well; if a student isn't satisfied with one school, he/she will transfer to another. The result is an increasingly dynamic marketplace. Colleges and universities are having to defend quality vs the increasing costs of higher education. Aims McGuinness, the director of higher education policy at the Education Commission of the States comments, "When there are pressures for tuition increases, students are going to come down with a vengeance about (the quality of) what they are getting (for their money)" (Seymour, 1993b, p. 5).

Myles Brand (1993), president of the University of Oregon, warns,

Anyone not aware that this is a time of profound change in higher education is asleep at the wheel. These changes which have been building for several years, are spawned largely by forces external to higher education. We have two options: First, members of the academy can debate possible reforms and then cautiously pursue them, which is a tack many of us prefer. Or second, we can challenge one another to think expansively and to debate bold new directions in higher education - directions that break from conventional paradigms in ways that range from creative to radical. Change is on the horizon for higher education, and our challenge is to ensure that we control our destiny by shaping new solutions to unprecedented challenges" (p.7).
Daniel Seymour (1993b), author of *On Q: Causing Quality in Higher Education*, states,

Given the complex nature of our higher education organizations, it isn't unusual to conclude that "immediacy" abounds on our college campuses. Faced with the crunch of skyrocketing tuition, declining demographics, and strident calls for more accountability and increased productivity, the standard response has been to revisit time-worn cost containment and policy options. We have become accomplished experts in crisis management - our days filled with reacting to the most pressing problems at hand. Simple, short-run solutions are used to minimize enduring difficulties that show no intention of going away. How many more retrenchments do we have to go through, how many more early retirement programs and hiring freezes do we have to endure before we ask the question: Is there a better way to manage higher education (p. viii)?

There is no debate that colleges and universities in this country are facing serious issues of implementing cost containment measures while at the same time preserving and/or improving the quality of education being offered to their students. The debate, however, centers around what is the most effective method of management to address these challenges. Higher education finds itself in an increasingly competitive environment and is addressing many
of the same challenges as those being addressed by business and industrial organizations. Status quo management of higher education is no longer effective in today's environment and new and innovative operating procedures and management techniques need to be explored and implemented. Long-term management plans must be formulated and implemented in order for colleges and universities to improve and sustain their financial stability and quality of education.

One of the more prevalent management techniques being implemented in business and industry today is Total Quality Management and many colleges and universities are discussing and exploring the feasibility of effectively using this management philosophy in their own institutions. A number have even gone beyond the discussion stage to the actual process of implementing TQM at their institutions: The University of Wisconsin - Madison, North Dakota University System, Delaware County Community College, Georgia Tech, and Oregon State University, to name a few (Seymour, 1993b). Many of these TQM efforts, however, are still in the initial stages of implementation and few of the institutions who are more "experienced" in TQM have successfully implemented it throughout their academic units. According to the American Council on Education's 1993 Campus Trends report, although 70 percent of surveyed institutions report use of TQM principles, only 10 percent of those surveyed admits to extensive use of TQM, often focusing on only administrative
operations and stopping short of the academic side of the institution (Gales, 1994). In fact L. Edwin Coate, Vice-President for Finance and Administration at Oregon State University suggests that the service side is an easier place to start implementing TQM than is the academic side (Coate, 1991). However, if TQM is to be implemented at a college or university to improve and sustain quality of education and financial stability, it must be effectively and successfully implemented throughout the entire institution, including the academic units. University of Oregon president Myles Brand (1993), in challenging administrators to develop systems that are cost effective and qualitatively sound, states that "it remains unclear whether the particular techniques used in non-instructional arenas can be transferred directly to the instructional context. Nonetheless, they should be seriously considered" (p. 7).

Statement of the Problem

Higher education now finds itself in an increasingly competitive environment. Faced with skyrocketing tuition, declining demographics, reduced funding and resources, increased calls for accountability and increased productivity, and a "buyer's market," colleges and universities are experiencing what many call a crisis in higher education. Status quo management of higher education is no longer effective. In order to improve and sustain long-term stability and quality of education, new and
innovative operating procedures and techniques need to be explored and implemented. Total Quality Management, a philosophy of management principles that is being implemented by American business and industry to improve cost effectiveness and produce quality products and services, is now being explored by higher education institutions as a possible solution to their current problems. Although TQM has already been embraced by a number of colleges and universities, it has primarily been implemented in the administrative, service, and non-academic units of those institutions. In order for TQM to effectively improve an institution's competitiveness, however, its philosophy and principles must be implemented throughout the institution, including the academic units. But what is the current status of TQM in academia and why haven't academic units more readily embraced this management philosophy? What are the possible obstacles to implementation of TQM in these areas and how can these be overcome? The purpose of this historical study is to explore the following problem statement: To what extent is the Total Quality Management philosophy being embraced by academia and what obstacles need to be overcome in order for higher education academic units to more readily accept and implement this management concept?

Significance of the Study
An increasing number of colleges and universities are
seeking new and innovative management approaches to address the serious issues facing higher education. Total Quality Management, a prevalent concept being implemented by business and industry, is one of the management approaches being widely discussed and explored by higher education. TQM may be a popular phrase, but many in academia are not familiar with its underlying philosophy and techniques and especially its application to the academic sector. Although literature is available about the implementation of TQM to business and industry, very little is readily available about TQM in higher education. The purpose of this study is to determine the status, application, and possible implementation obstacles of TQM to academia. The significance of this study is that it will provide synthesized findings and results to those in academia who are exploring and deciding whether or not to implement TQM, thereby giving them useful, needed information that will assist them in their decision-making process.

Limitations/Assumptions

Total Quality Management is still "in its infancy" in the United States. Although there has been an awareness of quality in North America in the last ten years, it has only been during the last five years that companies have actually embraced and implemented TQM as a management concept. And only recently have higher education institutions begun to seriously explore or even implement TQM. Therefore,
although there is a great amount of material available about TQM philosophy and principles and suggested implementation techniques, there is a substantially lesser amount of material available about successful implementation of this management concept within business and industry, and an even lesser amount on higher education. Finally, material on the TQM process in an academic unit barely exists, as those few institutions moving toward this area are only in the initial stages of planning and implementation.

In researching the status of implementation of TQM to academia, no assumptions have been made - especially regarding the ultimate effectiveness or success of TQM in improving quality of education, competitiveness, or cost effectiveness in higher education and its academic units.
CHAPTER II
PHILOSOPHY AND PRINCIPLES OF TOTAL QUALITY MANAGEMENT

In the 1992 Procter & Gamble-sponsored Report of the Total Quality Leadership and Steering Committee and Working Councils there is a consensually arrived at definition of total quality, endorsed by the chairmen/CEOs of nine major corporations, deans and professors of major universities, and eminent TQM consultants:

Total Quality (TQ) is a people-focused management system that aims at continual increase of customer satisfaction at continually lower real cost. TQ is a total system approach (not a separate area or program), and an integral part of high-level strategy; it works horizontally across functions and departments, involves all employees, top to bottom, and extends backwards and forward to include the supply chain and the customer chain. TQ stresses learning and adaptation to continual change as keys to organizational success. The foundation of Total Quality is philosophical - the scientific method. TQ includes systems, methods and tools. The systems permit change; the philosophy stays the same. TQ is anchored in values that stress the dignity of the individual and the power of community action. The definition of "Total Quality" suggests that customer satisfaction - even customer delight - is a useful definition of "quality" (Becker, 1993, p. 30).
Total Quality Management is an organizational development effort that requires two organizational changes. The first is an educational effort to change an organization's culture, which includes how it recruits, trains, and manages its employees; how it selects and deals with its suppliers; and how it relates to its customers. The second is long-term education to increase an organization's effectiveness. Long-term education involves learning new methods for planning, engineering, problem solving, consensus building, communicating, and using process improvement teams (Weaver, 1993). The theoretical foundations of TQM came from several people, including W. Edwards Deming, recognized internationally for enabling Japanese industrial systems to achieve their current worldwide reputation for quality. Deming's philosophy, an insistence that management, not labor, bears the primary responsibility for making quality happen, is captured in his "fourteen points for the transformation of management":

1. Create constancy of purpose for improvement of product and service, with the aim to become competitive and to stay in business, and to provide jobs.

2. Adopt the new philosophy. We are in a new economic age. Western management must awaken to the challenge, must learn their responsibilities, and take on leadership for change.

3. Cease dependence on inspection to achieve quality.
Eliminate the need for inspection on a mass basis by building quality into the product in the first place.

4. End the practice of awarding business on the basis of price tag. Instead, minimize total cost. Move toward a single supplier for any one item, on a long-term relationship of loyalty and trust.

5. Improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly decrease cost.

6. Institute training on the job.

7. Institute leadership. The aim of supervision should be to help people and machines and gadgets to do a better job.

8. Drive out fear, so that everyone may work effectively for the company.

9. Break down barriers between departments. People in research, design, sales, and production must work as a team, to foresee problems of production and in use that may be encountered with the product or service.

10. Eliminate slogans, exhortations, and targets for the work force. Such exhortations only create adversarial relationships, as the bulk of the causes of low quality and low productivity belong to the system and thus lie beyond the power of the work force.
11. Eliminate numerical quotas for the work force and numerical goals for management. Substitute leadership.

12. Remove barriers that rob people of pride of workmanship. Eliminate the annual rating or merit system.

13. Institute a vigorous program of education and self-improvement.

14. Put everybody in the company to work to accomplish the transformation (Deming, 1986, pp. 23-24).

There are four key elements that form the foundation of TQM: people, continuous improvement, process, and the customer (Price & Chen, 1993). The goal is to empower people so that optimal business results can be accomplished through teamwork. This is accomplished through training that focuses on communication skills, interactive skills, and effective meeting skills, permitting employees to participate effectively in group activities and allowing them to be actively involved in the continuous improvement of products and processes. Further training leads to improved teamwork, which forms the basis for empowering employees. Continuous improvement embodies the fundamental principles of quality: the PDCA (Plan, Do, Check, Action) cycle, which is also known as the Shewart/Deming cycle. The PDCA cycle offers a systematic, scientific method for continuous process improvement:

Plan: Identify a process in need of improvement,
analyze the problems, and develop a proposal for change that will cause some type of improvement.

Do: Run an experiment with the proposed change.

Check: Collect data to determine if the experiment produced the desired change.

Act: If the experiment is successful, implement the idea more broadly; if not, learn from the mistake and try an alternative. (Sherr & Lozier, 1991)

The Japanese word "kaizen" embodies the philosophy of continuous improvement: it is the belief that every activity can always be improved, and that the effort to make things run better should be a normal, everyday part of every job (Zemke, 1993). Process involves solving problems or generating ideas and provides employees with basic tools and a common language for continuous improvement; process also means the flow of work activities, which is a critical dimension of quality. The "Seven Step" quality improvement process is a model for approaching any problem: 1) problem identification, 2) problem analysis, 3) planning, 4) data collection, 5) data interpretation, 6) action, 7) appraisal (Zemke, 1993). Other common TQM processes, which are not unique to the quality movement, include brainstorming, nominal group technique (which allows everyone to participate), and force-field analysis for listing an idea's pros and cons. To support the processes of problem identification and analysis and fact-based decision making, TQM provides systematic and statistical tools, known as the
"seven basic tools of quality": 1) cause and effect diagrams, also known as "fishbone" diagrams, display the relationship between the effect of a specific problem and its possible causes, 2) checklists reveal patterns in observations about particular attributes of a problem or process, 3) histograms (bar graphs) display the variability of data and how it is skewed, 4) pareto charts (bar graphs) display problems or possible causes according to the frequency with which they occur, 5) control charts determine whether a process is in or out of control, 6) flow charts depict the steps in a process and uncover unnecessary duplication or inefficiency, and 7) scatter diagrams display the possible relationship between two variables. (Sherr & Teeter, 1991) and (Zemke, 1993) The final key element and primary focus of TQM is the customer and customer satisfaction. Price and Chen (1993) explain that there are three important customer perceptions of quality. "Expected quality" refers to those features that customers expect and therefore do not explicitly request; when these features are present, customers are not dissatisfied, but when they are absent, customers are very dissatisfied. "Satisfying quality" refers to those features that customers specifically request; when these features are present, customers are satisfied, but when they are absent, customers are dissatisfied. Satisfying quality satisfies customers and meets, but does not exceed, customers' expectations. "Delightful quality" refers to those features that customers
do not request because they do not know of their possible existence. When these features are present, customers are very pleased; and when these features are absent, customers are not dissatisfied. Delightful quality exceeds customers' expectations and delights them - and customer delight is the key to product and service differentiation. Satisfying the customer, however, requires knowing first who the customer is. Sherr and Lozier (1991) suggest that an organization's mission statement is usually a good source of external customer identification. They also point out, however, that it is equally important to recognize that everyone within an organization is also a supplier and a customer. As a supplier one serves both external and internal customers; as an internal customer, one is served by other suppliers within the organization. If anyone does a bad job, the next person must either rework the task, send it back to have it done all over again, or worse yet, pass it on to the next internal customer. Any of these actions typically results in increased costs and lower quality. Customer focus, therefore, requires that one knows who his/her external and internal customers are, whether their needs are being satisfied, and whether they can be satisfied better.

A final key element of Total Quality Management is that top management must provide leadership by establishing a vision for a better organization. Johnson (1993) states that "an organization has to meet customers' needs before the market is even aware of them. To accomplish this, the
visionary leader must see the organization in terms of where it is and where it should be in the future. He or she has to envision the transformation that the organization must go through" (p. 83). This vision must then be communicated to all employees. Showalter and Mulholland (1992) suggest that "only by creating a high 'discomfort index' can non-profit service organizations hope to create a desire, and thereby garner the necessary support, for organizational renewal and change" (p. 86). This corporate renewal, however, cannot be mandated from the top. Instead, rather than insisting on specific solutions, managers must create a climate for change by providing facilitative leadership. This requires a new set of tactics based on the following strategies: 1) identify key stakeholders and include them in decision making, 2) gain awareness of symbolic language and how to use it, 3) create a culture that encourages and rewards continuous improvement, 4) demonstrate constancy of purpose, and 5) manage several levels of change, intervening when and where necessary to make sure strategies work in unison (Showalter & Mulholland, 1992). In order to accomplish this, managers must change their behavior. They must change from managers who are direct, are competitive, rely on rules and organizational hierarchy, make isolated decisions, view people as costs, and promote sameness, secrecy and passivity to managers who lead, guide, collaborate, focus on the process, use informal networks, view people as assets, and promote diversity, flexibility, openness, sharing, risk
taking, and involvement (Wason & Bhalla, 1994). Belohlav (1993) further explains management's role in TQM by explaining that "a final change in focus comes in shifting the perspective from managing people to managing systems. When viewing a system, not only do we see the parts (plants, machines, people), but also the interactions between the parts. From this viewpoint, sources of error can be eliminated from the system itself rather than making the futile effort of rewarding or punishing people for performance that may ultimately be out of their control" (p. 66). There are a number of key elements to Total Quality Management, but the first (and most important) step that must be taken is management's commitment to its philosophy and process. Kano (1993) asserts that "quality will be improved if top management will assert its leadership to smoothly implement TQM corporate-wide - and from the long-term viewpoint" (p. 29).

Although the philosophy and principles of TQM may at first appear overwhelming, an organization will become quality-driven and competitive if the key elements of TQM are fully understood and implemented. Spitzer (1993) states that "TQM is the only mechanism to either sustain competitive advantage or survive competitive disadvantage. . . . The discipline of competition arising from the free market requires the elements found in TQM: customer-driven quality, strong quality leadership, continuous improvement, full employee participation, management by fact, company-
wide application, quality and operational results, and systematic quality strategies, methods, and practices" (p. 64).
Deciding when and where to start in Total Quality Management is a difficult task. Perhaps the only task more difficult is having the will to continue, especially after the inevitable setbacks. Alexander Hiram, a management consultant and author of *Closing the Quality Gap*, agrees that most quality programs fail to achieve their lofty objectives. However, he argues that "the lesson to be drawn from these failures is that TQM is hard to implement, not that it doesn't work. . . . the problem is that most quality initiatives are too little and too peripheral to the company's main strategies to make an impact." (Kitsuse, 1992, p. 55) Also, many organizations that try to manage change in the field of TQM underestimate the time and effort necessary in the change process. As a result, most TQM efforts fall short of their organizers' aspirations (Kerron, 1994). And finally, no universal implementation method of TQM works for all organizations. Although the underlying TQM philosophy and principles must be fully learned and understood before implementing them, each organization must also be able to "tailor" these principles to fit the uniqueness of that specific organization. However, in order to get started, an organization needs direction in implementing the TQM process and numerous experts and authors of TQM offer suggested techniques and plans for
successful implementation.

James F. Riley Jr., senior vice president of the Juran Institute Inc., offers the following suggestions of how an organization should implement TQM:

First, revisit the mission values and vision statement. Answer these questions: (1) What business are we in? (2) What principles guide us? (3) What do we intend to become? Next, conduct an assessment of quality in the organization. Review your standing in the marketplace and the needs, wants and expectations of your customers. Calculate the cost of poor quality to your company and assess employee attitudes toward existing quality efforts. Develop a quality action plan next. The quality action plan should define your short- and long-term goals and list individual responsibilities.

Then develop support for the TQM system. This involves communicating the effort, reviewing your recognition-and-reward systems, and determining education and training needs. Finally, prioritize the issues, and determine which programs should be the first to implement. Don't try to cure world hunger all at once - take on bite-size projects that can teach you something. (Caudron, 1993, p. 32)

Daniel Hunt (1992) warns that doing things right the first time (in TQM) depends on realistic, thorough planning. It is his opinion that the Japanese spend two-thirds of their effort on building consensus, developing understanding
of the clients' needs, and reviewing options for implementation, whereas American companies tend to spend one-third of their efforts on planning and then jump into the implementation phase, continuing to "fight fires" to resolve the errors and inconsistencies that could have been avoided with proper planning. Hunt (1992) outlines ten specific steps for the planning phase of "Quality First" (TQM), followed by seven steps for implementation:

1. Secure top management commitment to "Quality First"
2. Create a vision and philosophy (strategic plan)
3. Establish a quality council of top managers
4. Identify internal and external customers and determine their needs and expectations
5. Develop your own "Quality First" strategy
6. Select the organization or unit to implement "Quality First"
7. Conduct training needs analysis of executives, managers, and employees
8. Determine financial and staff resources for implementation
9. Conduct training by internal staff and/or external consultants
10. Identify performance measures of customer expectations and requirements
11. Implement the "Quality First" philosophy by identifying quality improvement opportunities
through the Plan-Do-Check-Act (PDCA) process

12. Benchmark your products/services by assessing your "best of class" competitors

13. Implement the continuous improvement process

14. Monitor and evaluate results on quality improvement projects

15. Recognize and publicize quality improvement successes through promotion, rewards and recognition

16. Use feedback to modify and improve the "Quality First" process and expand to other segments of the organization

17. Continue to improve (pp. 193-231)

There is an increasing number of companies that use the customer as the starting point and focus in their comprehensive approach to quality. One of these companies, Motorola, provides significant insight into the connection of quality to corporate strategy. Motorola achieves customer satisfaction, at least in part, through a process referred to as "The Six Steps to Six Sigma," which consist of the following general actions: 1) identify the product you create or the service you provide, 2) identify the customer(s) for your product/service and determine what they consider important, 3) identify your needs to produce the product/service so that it satisfies the customer, 4) define the process for doing the work, 5) mistake-proof the process and eliminate wasted effort, and 6) ensure continuous
improvement by measuring, analyzing and controlling the improved process. At the core of Motorola's quality initiative, there is vigorous attention to customer needs and satisfaction followed by painstakingly producing a product/service that fulfills the customer's requests; and a fundamental characteristic to its TQM process is that it is a continuous improvement process, which becomes the basis for total quality (Belohlav, 1993).

Instead of being customer focused and customer driven, however, many companies' priorities are based on management's "perception" of key customer problems (perceptions that are often wrong) or on poor interpretation of data on customers' problems. Goodman, Bargatze, and Grimm (1994) explain that not setting priorities based on what is important to customers is the result of two situations: problems with conflicting, multiple sources of data and not having a factual understanding about which problems really cause market damage, resulting in the loss of customer loyalty. They remind the reader that most customers don't complain or request assistance; and those who do speak out but are not assisted in their first contact never contact the company again. The key problem of TQM efforts, they maintain, is that companies do not have an accurate understanding of their customers' needs and expectations and what does and does not work in the marketplace. To help companies set customer-driven priorities and measure results effectively, Goodman,
Bargatze, and Grimm (1994) suggest the following: 1) determine what is important to customers by using base-line market-damage surveys to identify the full range of problems that customers encounter, where and how often they complain, and the impact of problems, 2) decriminalize and solicit complaints as a source of data, not as a quality measure, 3) integrate and reconcile survey and complaint data, 4) track the results of quality initiatives, and 5) educate staff on the link between customer problems and customer loyalty, extra costs, and employee frustration. Accurate and timely customer data analyses provide the target for quality improvement initiatives. A final note on customer-driven quality initiatives is that although there is recognition that there are general customer needs in the marketplace, each individual customer also has unique needs. Thus while quality organizations pursue and sometimes even create markets, satisfying individual needs allows an organization to reach its fullest potential for creating value (Belohlav, 1993).

Historically, the primary mode for instituting a TQM change has been teaching problem-solving and process-improvement tools and techniques throughout the organization. Teaching people these tools, although important, is the easy part. It is more difficult to get people to use the tools and techniques and their underlying philosophy. In many organizations internal politics, personal conflicts, and people's counterproductive attitudes
are strong barriers to implementing a TQM effort. These features of organizational life are the hardest to change because they are deeply rooted. Changing the culture of an organization, therefore, is a huge and difficult task. However, those managers who are trying to implement TQM with an understanding of the dynamics of managing organizational culture change are succeeding, and the TQM tools and techniques are having their intended impact (Merron, 1994). Charles Weaver (1993) states that "it is almost impossible to secure significant, lasting gains in organizational effectiveness without supporting changes in culture" (p. 65). TQM requires a change of attitudes and working methods. All employees in the organization need to understand and live the message if TQM is to make an impact.

The leaders of TQM efforts must focus their attention on creating clarity and commitment to the organization's new direction by creating a vision of organizational greatness and then inspiring the employees to achieve it. This is not only the secret ingredient in leadership, it is the key to managing change (Merron, 1994). However, culture change is not only about changing the behavior of employees. It also requires a change in the way in which organizations are managed and led. The latter is characterized by an understanding that people produce quality. Two things are required for employees to produce quality. First, they need a suitable environment in which to work, which includes systems and procedures which are simple and which aid them
in doing their jobs. Second, they need leaders who appreciate their achievements and coach them to greater success. The motivation to do a good job comes from a leadership style and an atmosphere which heightens self-esteem and empowers the individual (Sallis, 1993) and this is achieved through managers getting employees more involved through participative management by training them in the mechanics of problem solving, group dynamics, and teamwork. However, if employees are asked to think differently, act differently, and be motivated differently, they must not be allowed to do so in an environment that is diametrically opposed to new thinking because there will be a great deal of frustration and little success. It is up to management to replace these hostile systems with ones that will support the desired culture (Liberatore, 1993).

Although an organization may effectively be changing its culture to support the TQM effort, employees may still have doubts and resistance to the effort. Price and Chen (1993) suggest the following positive impacts of TQM that will provide motivation for employees: 1) the reduction of fire fighting by focusing on process and root causes rather than symptoms, 2) the ability to solve long-standing problems that have not received the attention of management, 3) the future avoidance of problems already encountered through the use of standardization, 4) the improvement of personal skills and capabilities, 5) the improvement of team skills and capabilities, resulting in much more effective
meetings and project management, 6) the introduction of the notion of the internal customer - to help break down departmental barriers, and 7) the empowerment of the individual, which puts decision making into the hands of those closest to the work (p. 107).

In summary, Rahul Jacob (1993) offers five keys to making total quality work: 1) the CEO/top management has to be involved, 2) customer focus is critical, 3) link TQM to a few clear strategic goals, 4) demand a financial payback - and don't wait forever, and 5) give an outsider's TQM program your own wrinkles. Bill Ginnodo, executive director of Quality & Productivity Management Association, concludes the following about implementation: "TQM is at least 80% concept and probably only 20% tools and techniques. . . . It's far more important to deal with leadership, training, and empowerment - the conceptual issues that will get people in sync with the effort" (Benson, 1993, p. 18). And finally, the International Quality Study, a three-year inquiry conducted jointly by Ernst and Young and the American Quality Foundation, offers the following advice to those new to the quality game: "concentrate on the basics, promote teamwork, benchmark immediate competitors only, and become more responsive to the customer" (Brigham, 1993, p. 45).
CHAPTER IV
TOTAL QUALITY MANAGEMENT IN HIGHER EDUCATION

Implementation of TQM in Higher Education

In *On Q: Causing Quality in Higher Education*, Daniel Seymour (1993b), states that the challenges that face higher education today and in the near future require a new set of philosophies and methods. He further proposes three solid connections that make strategic quality management (TQM) a viable model for a college or university: one is definitional, another is organizational, and the third is operational. The definitional connection is that quality extends beyond the interaction between the professor and the student or the meeting of accreditation standards; TQM is a set of multi-dimensional principles that embrace this broadened definition and higher education no longer has the luxury of using narrow definitions of quality. The organizational connection is that a college or university seeks to advance learning and TQM is a structural system that creates a learning organization. He argues, however, that higher education does not run "learning" organizations that seek to systematically gain knowledge or skills concerning how they operate; a TQM approach, on the other hand, would suggest that the function of the administration would be not merely to describe what has happened, or to control what will happen, but to foster improvement by encouraging people to really understand the processes in
which they participate (i.e., "What is your job?"). The operational connection is that a college or university operates as a collection of isolated individual parts, whereas TQM is a unifying force that advances an integrated purposeful whole. By giving people the tools and techniques, the training, and the responsibility for causing quality, would create a feeling that the institution is "investing" in its own people. Also, encouraging a perception of quality that extends beyond conformance to accrediting standards would help break down the barriers between departments and disciplines and the strong orientation toward teamwork that is inherent in TQM philosophy would enable individuals to work at common purposes instead of at cross purposes. Total quality management, Seymour concludes, "enables an individual institution to respond to the challenges of a changing environment in some other way than by spouting tiresome, territorial rhetoric. It enables an organization to regain the high ground by assuming responsibility for causing quality in a systematic and comprehensive manner" (p. 25-34).

Steven Brigham (1993), director of the Continuous Quality Improvement Project at the American Association for Higher Education, writes in an article about TQM lessons that higher education can learn from industry, "the service industries generally have met with less success (in TQM) than manufacturing thus far. Higher education has good
reasons to be wary." However, he warns, "higher education, though a late arrival on the quality scene, still must pioneer into very new territory. Nevertheless, we cannot afford to go slowly; the demands for quality escalate by the month" (p. 48). And Peter Ewell (1993), senior associate at the National Center for Higher Education Management Systems states:

Much of the academy's initial reaction to Total Quality has been gut-level and negative. . . Yet, there is undoubtedly something to the movement. Beneath the hype, TQ does seem to contain new insights about how we can and should operate higher education. Just as importantly, these insights seem tailored to the times. Hard as they may be to digest, TQ's root concepts intrigue growing numbers of professionals in higher education, if only for their raw transformational power. . . The Total Quality movement counts in its front ranks a large proportion of universities standing high on the reputational pecking order (p. 49-50).

A few campus pioneers began their TQM effort in the eighties; the big wave of interest began during the 1991-92 academic year and by now it's hard to find a campus without at least a few people talking about it. Ted Marchese (1993), however, cautions that "contrary to the tool-driven, seven-step workshops that consultants are busily selling, we're years away from knowing what academic versions of TQM will appropriately look like" (p. 10).
Many of the core principles of TQM do have compelling academic counterparts, but some may not appear quite as similar when viewed in the context of traditional academic culture. One of the key elements of TQM is decentralized management and employee empowerment. One of the appeals of TQM to higher education is that it appears on the surface to be quite close to what is already done. Participatory management is obligatory in academic settings, and faculty constitute what is arguably the most "empowered" work force on earth. However, the "empowerment" of TQM is not about individuals but about work teams who for the most part are directly engaged in production - the people who cooperatively make a particular product or who own a specific process. Decentralized decision making in this context is not driven by any notions of right or entitlement but by the practical insight that team members are the people who know best what's wrong and who should have the ability to fix it. Academic departments do often function as work teams with respect to "production" of disciplinary majors or graduate degrees, but with respect to such cross-cutting functions as undergraduate general education, they function politically, or not at all. If "cross-functioning work teams" are formed in higher education, they usually are rotating, generalist committees that preside over collegiate functions, whereas TQM teams are built around collaborative responsibility-taking among the doers of a function. In short, TQM organization follows processes and exists to
serve them. Empowerment, though a basic value, is a means, not an end (Ewell, 1993). Marchese (1993), however, feels that the academic world is ready for TQM's principles of decentralized management and empowerment; he contends that where TQM has been initiated on campuses, the idea of working in teams with real authority has "struck a positive chord, to the frequent happy improvement of work processes and morale" (p. 13).

Another key element of TQM is the focus on core processes to manage and continually improve quality through these processes rather than "inspecting in" quality. This is an apparent reversal of higher education's focus on assessment outcomes and reliance on occasional, externally-derived devices - such as accreditation and program review - to convey the appearance of quality. Daniel Seymour (1993b) suggests that colleges and universities do great "describing" - of courses, qualifications of the faculty, etc. - but spend much less time analyzing the way they work or attempting to become better at what they do. He explains that efforts to cause quality in higher education by improving processes are constrained in a number of ways: unwillingness to change, compartmentalization, competition, and conformance to minimum (accreditation) requirements; change does not come easily to academe. Marchese (1993) is even more critical in assessing continuous improvement in higher education when he states, "somehow, despite all the good will, talent, and effort of individual faculty, there's
seldom a collective sense of obligation toward or avidness about the improvement of student learning. So it is that an organization full of learners doesn't add up to a learning organization" (p. 12). Brigham (1993), however, notes that higher education's most salient industry model in TQM is health care and based on two reports by the Health Care Advisory Board, hospitals that have been most successful in implementing TQM and improving their critical and core processes have involved their doctors early and extensively. Brigham further notes that the role of doctors in TQM medical centers is analogous to that of professors in universities; if the core processes of classroom and curriculum issues are to be addressed by TQM higher education institutions, then by example from the health care industry, the professors must be involved early in the implementation process. The "Pareto Rule" of TQM contends that 80% of problems arise from 20% of the processes, and if the 80% problem areas can be identified, they should be tackled first in any quality improvement process (formulated by Joseph Juran, the Pareto Rule is based on the 1800's economist Vilfredo Pareto's findings that typically 80 percent of the wealth was concentrated in less than 20 percent of the population) (Hunt, 1992 and Sallis, 1993). Unfortunately, if core processes are difficult to analyze and improve (for whatever reason) in higher education, then continuous improvement processes will experience difficulties on campuses.
Seymour (1993b) further explains that at the heart of any improvement process is information and although colleges and universities are slowly improving their management information systems, they still need a better "sensory system" that empowers them to continuously improve the way they work. H.J. Harrington in *The Improvement Process* makes the connection by stating, "If you can't measure something, you can't understand it; if you can't understand it, you can't control it; if you can't control it, you can't improve it" (Seymour, 1993b, p. 83). Higher education encounters two problems in trying to manage by fact: 1) being a service industry, it has difficulty measuring (or sensoring) its success in delivering what it promises and 2) it is extremely decentralized, causing difficulty in getting data for feedback purposes. In order for TQM to be successfully implemented in higher education, colleges and universities must be willing to identify and improve their core processes and also expand their management information systems.

One of the first steps of implementing TQM is to create or revisit the organization's *vision* statement in order to answer the questions of what business it is in, what principles guide the organization, and what it is that the organization wants to become. The vision statement communicates key values, as well as a view of the future, and in communicating this unifying focus, is the basis for the Total Quality Management effort. Successful TQM efforts require vision statements that are distinctive and
challenging. Again, many colleges and universities fall short in that their vision statements are generalized and generic. "By attempting to couch vision statements in terms suitable for public consumption, they (colleges and universities) often end up with apple pie generalities; that is, statements that, in effect, mechanically enumerate what the institution has in common with other institutions, rather than seeking to explain and describe its 'specialness'" (Seymour, 1993b, p. 62). Instead, the purpose of the vision statement in higher education should be to articulate, clearly and concisely, the institutional intent; it should focus on values, guiding principles, and distinctive competencies to the exclusion of almost everything else. Vision statements should be the end product of a tremendous amount of self-reflection, listening, consumer research, competitive analysis, and informed discussion. The end result is a distinctive vision that allows a college or university to establish a unique position in the higher education environment and that serves as an organizational rallying force, thus placing it into a position to support the implementation of a TQM effort.

Another important step in the implementation of Total Quality Management is the assessment of education and training needs, followed by the actual training. In a recent speech about the quality of higher education, Larry Sherr of the University of Kansas stated that "I know of no institution in our society that does a poorer job of
educating its own employees than higher education." (Seymour, 1993b, p. 104.) Seymour (1993b) himself supports this statement by commenting, "beyond having our professors educated in the intricacies of their discipline, what education do we provide" (p. 104)? Marchese (1993) reports that in companies like Motorola, Corning, or GM's Saturn Division, a remarkable five percent of the company's expenditures are devoted to employee education, training, and development; he asks the question, "why is it that in almost any university or college - organizations devoted to learning - the comparable expenditure will be a fraction of one percent" (p. 13)? It is ironic that colleges and universities, whose primary function is human resource development, generally place minimal emphasis on staff development for their own employees. This not only undermines the expertise and effectiveness of employees, but also impacts their attitudes. In order to effectively implement TQM in higher education, faculty, staff and administrators need to be properly trained. Seymour (1993b) suggests that the institution's distinctive vision statement can be reinforced through orientation sessions; people can be encouraged to improve job performance by analyzing and understanding work processes through on-the-job training; and the philosophy and principles of quality improvement can be taught through formal development programs. Staff development must receive a higher priority as a critical component in developing programs that affect an
institution's attitude and processes, and the focus of managerial training must shift from supervision to leadership and team building (Winter, 1991).

The basic tenets of TQM are the identification of customers and customer focus. Ewell (1993) comments, at few points in the Total Quality conversation (in higher education) does discussion become so heated as around the word "customer." Partly, of course, this is because the term itself vividly signals TQ's commercial origins. More subtly, it is because acknowledgement of "in service" to anyone - whatever their label - directly threatens the academy's core myth of independent inquiry, conducted on its own terms and for its own sake. Particularly when applied to instruction, the term also suggests a surrender of expertise and authority by those assumed to have both, to parties who by definition are unaware of what they do not know (p. 54).

John White, dean of engineering at Georgia Institute of Technology, related the resistance he received from faculty when he was trying to get across the notion that students are important:

I finally realized it (the resistance) was because of that crazy slogan "The customers are always right." But the customers aren't always right. If I said to Hewlett Packard, "I want your product, I want to pay 10 cents for it, and I want it right now," it wouldn't
happen. I think the faculty thought that the notion that the customers are always right meant that, if a student said "I deserve an A," you should give it to him or her. The customers are not always right, but the customers always deserve to be listened to. . . .

(Academic institutions are) not the Ernest & Julio Gallo University, which will give no degree before its time. Students aren't grapes that you stomp all over to make something of value, and you don't insert quality by aging them. You need to understand the basic business you are in and get back to the basics. Furthermore, you need to walk your talk. Academia better not try to teach quality to students and not demonstrate and manifest quality (Bemowski, 1993, p. 46).

Marchese (1993) reminds his readers that a customer focus impels organizations to be specific about the parties they serve. The external customers of a college, for example, would likely include funders and donors, employers and graduate schools; internally, customers would include students, but also any employee of the college. He also observes that organizations, over time, tend more and more to be run for the people who work in them, and especially for the convenience and reward of their managers and professionals; this is notably so in larger, older organizations dominated by professionals, such as universities. However, the customer orientation of TQM
challenges that orientation: it asks, Who pays the bills here? What public is this profession supposed to serve? "To whatever extent a university may be inward-looking, its departments and disciplines peer-focused and self-referential," Marchese (1993) comments, "the 'customer' questions posed by the quality movement have a healthy air to them" (p. 11). Ewell (1993), continuing about the concern of using the word "customer" in the higher education context, notes, "internally, at the operational level, our customers are one another... Indeed, it is often surprising when talking with faculty how quickly brick-wall resistance to the term 'customer' evaporates when the term is applied not to students, to potential employers, or to society in general, but to themselves and one another in a network of customer-supplier relationships across a curriculum" (p. 55).

Although developing a lot of happy, satisfied customers - whether they are students, parents of students, alumni, professors, or industry employers - should be a primary goal of causing quality in higher education, Seymour (1993b) states that the notion of "King Customer" is alien to the college campus for a number of reasons. The most obvious is that some people on campus reject the notion that college students are individuals who purchase services; i.e., that they are customers. Another reason is that faculty feel that they do a good job in the classroom and their approach to educational quality is very much an "I know it when I see
it in my classroom" perspective. He notes that this "I've-got-all-the-answers" syndrome is part of the culture of higher education that is practiced and passed on to others. In discussing barriers to TQM in higher education, Winter (1991) also expresses the belief that colleges and universities have no clear understanding of who the customers, either internal or external, are. He explains that rather than serve the customers of the institution, administrators' priority concerns are mired in external bureaucracies and maximizing resource acquisition, improving institutional image, and minimizing criticism. He also contends that because faculty experience diverse and sometimes conflicting demands on their time through teaching, research, and serving the community, they are often drawn away from their primary consumers, the students. If TQM philosophy and principles are to be effectively and successfully implemented in higher education, total acceptance and wholehearted belief in customer focus and service must be moved to the forefront of the movement. John Lombardi, president of the University of Florida, explains this needed change in attitude by saying, "we have to recognize students as significant people whose needs, comfort, and success take high priority within the institution. If we choose faculty comfort, administrative convenience, and management ease over student satisfaction and success, we deserve to lose" (Shaw, 1993, p. 22).

Decentralized management and employee empowerment,
continuous improvement of processes, a distinctive forward-looking vision statement, employee education and training, accurate determination of customers, and the importance of customer focus and service are all essential concepts to Total Quality Management. However, because colleges and universities may be unaware of or even resistant to these same concepts, they could become real or perceived barriers to effective implementation of TQM to higher education. Daniel Seymour (1993b) offers the following charges to higher education:

My gut-feeling is that many of the problems our institutions are dealing with would be greatly reduced by a change of attitude. We need to shift gears from denying that we are in a service industry to becoming service fanatics. We need to go from doing the minimum for our customers - internal and external - to exceeding their expectations. We need to become less accepting of things as they are and more willing to improve them, continuously. We need a change from doing things wrong and then doing them over to doing them right - the first time. We need to discard our mantle of arrogance and get busy at nurturing a competitive attitude - on the basis of a distinctive vision and service to our customers - in an environment in which scarce resources, calls for accountability, and demands for quality are not an occasional inconvenience but an implacable condition (pp.141-142).
Implementation of TQM in Higher Education Institutions

TQM on campus is in its infancy but in spite of this, there have been tentative, first steps made by a number of colleges of universities. There are no definitive conclusions yet, but the remainder of this chapter will attempt to offer examples of institutions that are applying the Total Quality Management philosophy and techniques to the way they operate their organizations.

Pennsylvania's Delaware County Community College (DCCC) is one of the first colleges in the United States whose management and philosophy is based on the concepts embodied in the principles of TQM. In 1985, Richard DeCosmo, president of DCCC, set the college on its present course by enrolling himself and his executive staff in a year-long seminar about TQM. After a year of planning, study, and introspection, DCCC established three goals: 1) to transform its philosophy of administrative management to TQM, 2) to develop a training curriculum in TQM for local business, and 3) to incorporate the concepts and philosophy of TQM into its credit curriculum and into classroom management. Over the ensuing three years, the college made significant strides in accomplishing these goals. For example, all administrators received awareness training in TQM and meetings were held to identify and prioritize college systems and processes in need of improvement, resulting in 80% of these administrators and their staffs having been actively involved in improvement projects. The
college supports contracts with local industries, state agencies, and federal government offices and representatives from more than fifty companies attend open introductory TQM seminars each year. Faculty members are beginning to experiment with the use of the TQM philosophy and a support group for this purpose has been established by them. For instance, the college's nursing faculty is using TQM tools to revise instructional procedures for teaching the administration of medications in a clinical setting. And in 1991, a certificate program in Total Quality Technology was established (Seymour, 1993b).

The College Research Office gathers data on students before, during, and after their enrollment to measure DCCC's ability to meet customer requirements and expectations: the educational and career plans of prospective students are studied through an annual survey of seniors in the county's 20 high schools; currently enrolled students are surveyed to assess their satisfaction with the college's programs and services; surveys and studies of students who have left assess the quality of their college experiences; graduates are annually surveyed; and non-returning students are profiled twice a year. These data are used by TQM teams to improve course offerings and schedules, to streamline and improve services, and to help students prepare for life after college (Entner, 1993).

DCCC, however, is the first to admit that there were problems and pitfalls while implementing TQM. Because the
college staff is lean, using the TQM methodology in the beginning consumed considerable time, as learning and doing occurred simultaneously. As a result, staff were reluctant to become involved and had to be convinced that using TQM requires time, constancy of purpose, and consistency of effort. Some of the initial projects were too complex and teams had to learn how to select projects that would achieve improvements in a reasonable amount of time. Also, the teams underestimated the resistance of people to fundamental change; early progress could have been greater if the agents of this change had known what to expect. Finally, DCCC suffered some initial setbacks because, as resistant critics watched, some actions occurred that were at odds with TQM values and practices. For example, some unilateral personnel actions were taken that were at odds with the participatory values of TQM. None of this helped the cause and the administration learned to be more consistent in its adherence to TQM (DeCosmo, Parker, & Heverly, 1991). DCCC found that translating and integrating TQM into an academic environment are ongoing processes and offers the following insights learned from this experience: "Verbal commitment to TQM is easier than implementation. Top personnel must show constancy of purpose to convince others that TQM can and will happen and that it is not just the latest management fad. Implementation requires patience, because it seems to take an interminable length of time for anything significant to happen..."
great patience, the transformation eventually begins to happen, sometimes in pleasantly surprising ways" (DeCosmo, Parker, & Heverly, 1991, p. 24). President DeCosmo concludes by cautioning that TQM requires an intensive commitment: "Causing a cultural change, especially in a traditional institution, is a slow process, and not one for faint-hearted leadership" (Entner, 1993, p. 34).

Oregon State University (OSU) implemented TQM in nine phases, beginning in 1989, as it was facing such major challenges as unhappy customers, a lack of resources, and low employee morale. The purpose of the first phase was to create a critical mass of top management people who would understand TQM and its use to the university and to determine who would be willing to test the concept at OSU. Activities included visits to companies with TQM programs, inviting W. Edwards Deming to visit the university to explain TQM, OSU's president and three other top managers attending a class on TQM, and review of criteria for the Malcolm Baldrige National Quality Award. In phase two, a pilot study team was formed at OSU's physical plant to address a specific, high priority issue. At the same time, phase three consisted of initiation of surveys, focus groups, complaints/feedback, etc. to identify and prioritize customer needs. In phase four, breakthrough planning sessions were conducted to integrate a distinctive vision with a customer focus and an understanding of critical processes. The same approach to planning was conducted in
the divisions and colleges, which was phase five. In phase six, study teams were formed with people who normally worked together on a process to be reviewed; these study teams included a team leader and a facilitator who were given instructions on problem solving techniques and TQM tools. A cross-functional pilot project was initiated in phase seven, with the intention of converting many university committees (phase eight) to TQM. Finally, in phase nine, OSU developed a system of reporting and an awards program to recognize both outstanding individuals and teams (Seymour, 1993b). L. Edwin Coate, vice-president for finance and administration at OSU comments,

At the conclusion of phase one, the president and cabinet were enthusiastic about the potential of TQM. However, as word of these activities began to circulate, skepticism surfaced on the academic side of the university. Faculty saw TQM as the latest fad in management style. They strenuously objected to such TQM terminology as "total quality" and "management" and felt that if TQM were implemented, they might lose control of important academic processes. At this point, some people attempted to change the TQM title to something more palatable - and proposed the name "System Improvement Process." But this simply generated suspicion and reinforced the idea that, by any name, the new approach was another management fad. Generally, faculty members see themselves as
emphasizing diversity. To them, the idea of quality control suggests uniformity – an attempt to bring everything to the same level. In addition, many faculty members are accustomed to working alone, to competing, in fact, for limited resources such as grant money. Gaining acceptance on the academic side for the idea of working in teams may be a challenge at any university. Gradually, however, some members of the academic community began to give qualified approval to TQM. One said that "the great value I see in this concept is it will change our orientation to seeing students as customers. This will require a turnaround in our culture."... For many reasons, we decided to proceed slowly on the academic side. We targeted service units as the place to begin, since these units have many parallels with industry" (Coate, 1991, p 28).

One of the early TQM successes at OSU resulted from its (phase two) physical plant pilot study team: completion of remodeling projects was reduced by between 5 and 35 percent (Seymour, 1993d). Lessons learned from OSU's first year of experience with TQM include: 1) a firm commitment to TQM from the president is essential, 2) a person of considerable authority must champion TQM from inception to implementation, 3) the essence of TQM is team study devoted to process improvement, and 4) the administrative services side is easier to start with than the academic side (Coate, 1991).
Motivation for implementing TQM at Syracuse University took the form of a major restructuring program enacted in February, 1992, to bring the university's budget in line with its enrollment; while some areas received deep budget cuts, other designated areas of strength received budget add-ons. At the same time, it seized this opportunity to announce 33 new initiatives, one of which was TQM. Establishing the means to bring quality improvement to Syracuse started at the top when President Shaw and his cabinet decided to introduce TQM through a "gradual" approach, which would require the training of existing top management and the targeting of specific areas for improvement through pilot projects. The president and his cabinet received an intensive two-day session in TQM and then selected the initial four pilot teams that would have a direct impact on services to students: financial aid, bursar's operations, health services, and classroom environment. Tackling the definitions of the university's mission and vision, the following statements were arrived at: 1) Mission: to promote learning through teaching, research, scholarship, creative accomplishment, and service, and 2) Vision: to be a leading student-centered research university with faculty, students, and staff sharing responsibility and working together for academic, professional, and personal growth. Team leaders and members, as well as a facilitator for each team, received four days of intensive training.
At the time of his spring 1993 article, Syracuse University's President Shaw reported that the four initial pilot teams were still hard at work applying the seven-step process to their areas, and the next five pilot teams were about to be trained. Successes were already beginning to surface and the teams themselves sustained a high level of enthusiasm, even after putting in many hundreds of hours of time, sometimes outside of regular work hours. A substantial amount of time has already been invested: thousands of hours have been devoted largely to training cabinet officers, deans, directors, senior administrative staff, facilitators, and pilot team members and a TQM introduction has been offered to the entire university staff (more than 700 people have participated in 24 formal sessions). In addition, the four original pilot teams have logged more than 1000 hours in formal meetings alone, not counting work done on the project after hours.

Responsibility for overseeing the quality improvement initiative has been assigned to a cabinet officer and two staff members from the chancellor's office and the Office of Human Resources, after receiving special training.

Following Syracuse's initial experience in TQM, Shaw (1993) offers the following observations: 1) using consultants enabled them to start from a central reference point and to learn first-hand about TQM as adapted for an educational setting, 2) communicating effectively about the slow but sure gains being made can be challenging in an environment
as diverse as a university, 3) addressing areas of quick and visible impact first is important in registering rapid victories that maintain the momentum and enthusiasm, as is choosing areas where students will see gains first, 4) pointing out that TQM is a system that enables service providers to make better choices, not one that gives control to those who are served, will assuage those who balk at the term "customer," 5) emphasizing that the team's work is supervised by the person in charge will assuage those who are concerned about losing authority, 6) renaming TQM to "Syracuse Quality Improvement Program" more accurately reflected ownership to the program and also removed concern that it was too managerial and "non-academic," and 7) applying TQM to service areas first and learning from these experiences will help them apply it better to academic areas.

Thirty-five institutions of higher education now have formal partnerships with eighteen businesses. These partnerships were proposed by Robert Galvin, chairman of the executive committee of the board of directors of Motorola, during the third annual Total Quality Forum meeting in Cincinnati in 1991. The numbers have grown from the original eight universities that teamed with five businesses in spring, 1992, forming the Total Quality Business and Education Partnerships (Courter et al., 1994). In September, 1992, IBM Corporation announced cash and equipment awards to nine U.S. colleges and universities who
will work with IBM in an effort to accelerate the teaching, research, and use of quality management principles. These five-year awards are $1 million in cash, or $3 million in IBM equipment. From more than 200 applicants in IBM's TQM University Competition, the following schools were selected: Clark Atlanta University/Southern College of Technology, Georgia Institute of Technology, Oregon State University, Pennsylvania State University, Rochester Institute of Technology, University of Houston - Clear Lake, University of Maryland - College Park, and University of Wisconsin - Madison (Seymour, 1993a). The objective of these two partnerships is to encourage colleges and universities to integrate Total Quality into their curricula and to research and practice Total Quality. The partnerships are intended to foster long-term relationships and collaboration between the university and the corporate partner and may consist of loaned corporate executives and speakers, faculty and student internships, training opportunities, cooperation on research, and participation in a network to share information, research, and "best practices." Another industry effort, the TQM University Challenge, is a consortium of leading-edge companies that is providing training and technical expertise to a select group of universities. The American Association for Higher Education (AAHE) is playing a role, too; its new Academic Quality Consortium pulls together TQM's academic "idea champions" to glean critical learnings about Total Quality's applicability
and implementation (Seymour, 1993c). Only three universities are involved in both the Business/Education Total Quality and the IBM Partnerships: Georgia Institute of Technology, University of Wisconsin - Madison, and the Rochester Institute of Technology (Courter et al., 1994).

Today, as a result of a comprehensive strategic planning process, Georgia Institute of Technology's vision is to become "the premier technological university of the 21st century." But in 1987, President Crecine had concerns about the undergraduate program. Although it had a strong research program and a good, solid regional reputation, President Crecine felt that Georgia Tech had neglected its undergraduate student population. The ensuing strategic planning process revealed some stark realities: they had a 20 percent attrition rate after the freshman year - with more talent lost further up the line - and a 65 percent graduation rate which, given the quality of their student body, President Crecine felt should have been 85 percent. According to Tim Gilmour, the vice president for planning, "this place operated as if it were boot camp - survival of the fittest. People got out of Georgia Tech; they didn't graduate. And mostly they got out with a lot of anger" (Seymour, 1993c, p. 18). The impetus for a "cultural shift" emphasizing Continuous Quality Improvement (TQM) principles developed with a single focus: rather than trying to filter them out, how do we help students be successful here? The strategy for implementing CQI as an operating philosophy,
However, has since taken on a much broader look. According to Georgia Tech's IBM proposal, a vision to become the premier technological university implies the development of processes that continually improve its ability to meet customers' needs. To that end, Tech developed a strategic plan and organizational framework that are designed to bring about and maintain a commitment to TQM and to focus and coordinate TQM efforts throughout the institution's units. Tech has now set up a Quality Council chaired by President Crecine and an Office for Continuous Improvement and Assessment, which provides staff to the president and Quality Council, but also has responsibility for coordinating and assessment and accreditation reports. A new Continuous Improvement Curriculum Committee was formed, chaired by John White, the dean of engineering; its charge is to develop a "seamless" TQM curriculum that "touches every student" at Georgia Tech. There is also a complementing array of initiatives in curriculum development, continuing education, training, and a "customer-driven research program aimed at developing a 'scientific' understanding of 'what works in TQM, why it works, and what might work even better" (Seymour, 1993 a & c).

Building on what they learned during the first year, Georgia Tech revised their implementation strategy for 1993-94 to "focus and leverage their quality efforts better." Instead of the three areas of leadership, curriculum, and
research and propagation outlined in the original IBM proposal, the revised strategy has four areas: Operations Strategy, International Center for Continuous Quality Improvement, Curriculum Strategy, and Research Strategy. The Operations Strategy includes two components: 1) the Quality Council and Overall Strategy and 2) Assessment. The first component includes identifying and giving priority assistance to "Quality Champions" teams that are willing to implement CQI comprehensively in their organizations; support for on-going CQI efforts in terms of learning materials and consultation, especially on their cross-functional quality initiatives; strategic planning guidelines so that each planning unit identifies its customers, their needs, measurements of satisfying those needs, and plans to improve serving its customers; and a refocused role for the Quality Council. The Assessment component will use the framework developed for the Baldrige Award and incorporate assessment requirements of the Board of Regents and its accrediting agency to develop assessment measures for all of its processes. The Curriculum Strategy focuses on the College of Engineering and the Ivan Allen College and is building on current activities on curriculum development. And the Research Strategy will use the IBM monies to "seed" additional funding for research in targeted areas such as creation of processes for developing "customer driven" research and project review and support, and development of measures of extent to which customer
expectations are met (Courter et al., 1994).

An interesting success story that already comes from Georgia Tech is its Office of Minority Education Development (OMED). In 1991, in an attempt to increase the number of minority of graduates in science and engineering, OMED left the debates about TQM language and strategy to others and enrolled in a quality-management course taught by Jane Ammons, an engineering professor who had worked with W. Edwards Deming. What that did was give OMED a means to communicate. According to Cedric Stallworth, a team member, "You have to understand the principles, but applying them to the organization is the magic of the individual. It's the translation that counts, taking the tools and applying them to what you do" (Courter et al, 1994, p.68). OMED produced a mission statement that identified an "optimal choice set of 3.0 GPA" for all of its students. It then restructured, managed by fact, and outlined strategies that have proved highly successful; students' first-quarter GPA jumped to 2.6 from 2.2 in 1991 and in 1992, after a redesign and enlisting the help of parents, students surged to a 3.3 average, with 13 freshmen getting a perfect 4.0 (Courter et al., 1994).

In October 1990 the University of Wisconsin-Madison introduced a draft plan to implement the "principles and methods of Total Quality" into its operations and philosophy. The plan defined Total Quality Leadership (TQL) as "a comprehensive management approach which uses the scientific method and the contributions of everyone in the
organization to continuously improve everything the organization does in order to consistently meet or exceed customer expectations," (Seymour, 1993b, p. 34) and offered a framework and an action plan. The framework described the resources and interrelationships deemed to be instrumental in the transition process and included eight groups: 1) the Leadership Team, 2) the Office of Quality, 3) the Implementation Team, 4) the Transition Departments (those targeted for early TQM efforts), 5) the Internal Network (for monthly meetings with speakers on quality topics and other efforts of communication), 6) the Advisory Team (of experts from public and private organizations), 7) Corporate Sponsors, and 8) the External Network (to contact other colleges and universities implementing quality, private consultants, and state agencies). The action plan that the university developed for initiating their TQL program included an initial effort to build a data collection system to define its internal and external customer needs and to define a set of appropriate benchmarks. Additionally, the Leadership Team began generating a vision statement as well as a five-year plan (Seymour, 1993b).

UW-Madison continues to promote its support of the TQM process. At the IBM-sponsored TQM Sharing Conference, its administrators spoke at great length about the need to improve such critical processes as teaching and learning; advising; recruiting faculty, staff, and students; developing curriculum; and scheduling classes (Seymour,
To avoid the anxiety and confusion that the TQL program might cause faculty and administrators, UW-Madison collaborated with Proctor & Gamble to advance the university's understanding of quality management principles. In conjunction with training for faculty and administrators at Proctor & Gamble's headquarters, the use of the Baldrige-type quality audit was also explored. A professor of industrial engineering was selected to chair the assessment committee, as he had experience with using the Baldrige in industry. He and a graduate student produced a document that translated the Baldrige criteria and scoring guidelines into a more university-friendly format and this audit is now being piloted by the department chairs in the College of Engineering and the School of Business with broader use a possibility in 1994-95 (Seymour, 1994). UW-Madison recognizes the value of interacting with industrial partners, as it feels that together they can better understand what industry needs its students to learn concerning continuous improvement principles and techniques, and together they can share visioning and planning strategies and discuss merits of a Baldrige Award-type assessment for application in academic institutions (Courter et al., 1994).

Implementation of TQM in an Academic Unit

Responses from 515 business and engineering schools to a 1992 survey conducted by the Total Quality Forum, an
annual conference of corporations and business schools that looks at issues of curriculum, research and total quality, indicated that about 40 percent had integrated total quality principles into as many as six to 10 courses, 45 percent had begun to practice total quality in administrative areas; and 21 percent were actually practicing total quality in the classroom and in research (Froiland, 1993). In a national short survey of ABET accredited engineering colleges, sponsored by the National Society of Professional Engineers, Professional Engineers in Education Division, a 51 percent response rate indicated that 76 percent of the colleges were interested in starting TQM, with 51 percent replying that they (or their institution) have already formed at least one TQM team. In addition, results show that 72 percent of the colleges have started TQM efforts in both curriculum development and teaching (Houshmand & Papadakis, 1994). And in the Summary of the NSF Workshop on Quality in Engineering Education (Agogino & Ritchie, 1993), participants recommended that the National Science Foundation continue to take a proactive role in promoting quality concepts in engineering education by focusing on: recognition of the problem, formal studies of stakeholder (customer) expectation and needs, the development of success measures, blueprints of model programs, improved methods of learning, faculty and student empowerment, and forums for networking and communicating.

Although numerous colleges and universities have begun
implementing Total Quality Management at their institutions, most of the initiatives have been in their administrative and service units. And although selected institutions have begun introducing TQM within their academic units, very little literature can be found in this specific area, as these programs are still in their very early stages of development. Entin (1993), in investigating the initial use of TQM at ten Boston-area colleges and universities, reports that although most of the institutions cited examples of TQM on the academic side, practically all of them involved just two academic fields: business administration/management and engineering (with no examples of liberal arts faculty being involved in implementation). However, he voices concern that "the degree of skepticism and opposition from the core academic units is a primary reason to question the future of TQM in higher education. The pronounced reluctance of academic divisions (except business schools) to adopt TQM is alarming and may represent a serious disjunction between market forces and the academic enterprise and indicate that faculty are not currently interested in satisfying their students and other customers." He then concludes that if TQM is to move beyond the fad stage and take firm hold, "two conditions are necessary: college presidents must perceive TQM as a means to solve major problems facing their institutions; and senior academic affairs administrators and faculty must believe TQM is related to their concerns and interests" (p. 31).
Matthews (1993) states that TQM and academia interface in four basic areas: overall direction of the institution, the functional areas of teaching and research, incorporation of TQM in traditional course offerings (curriculum development), and handling of operational problems. In the latter two, he reports, TQM has enjoyed some successes, but that "academia hits the wall" in the overall direction of the institution and in teaching and research, as it appears that far less progress has been made. He concludes that "there is a very real danger of academia teaching one set of values and adopting a different set for itself" (p. 102).

Matthews (1993) suggests that there are four barriers to applying TQM at the institutional and functional levels: 1) the highly generic and inappropriate nature of the average institution's mission, 2) a lack of agreement - within the academic environment - as to the meaning of "quality and excellence" and lack of absolute and comparative standards and meaningful internal criteria, 3) the independence of key individuals within the academic environment (i.e., academic freedom and tenure, resulting in the administration having limited control), and 4) the reluctance of college leaders to play an aggressive and creative role. In addition to citing identification of the institution's stakeholders; development of a specific mission statement; establishment of quality standards and measures; formation of quality teams; and establishment of reporting, rewards, and recognition as steps to implementing TQM, he discusses two
additional suggestions that address the uniqueness of academia. First, although TQM requires participation of all members of an organization, Matthews (1993) suggests that an "escape clause" may be inevitable to address those tenured faculty who decline to participate initially or perhaps even permanently. He argues that without this escape clause, there is a strong possibility that no standards will be adopted and rather than make no progress at all, it makes sense to achieve whatever is possible. Therefore, the strategy may then include a policy that all new appointments be made on the basis of an acceptance of the standards and the evaluation process which accompanies them and an understanding that it will take a period of years before the entire academic community is fully committed to TQM.

Second, he suggests that the institution implement a set of policies and procedures which clearly differentiate the benefits of participation in TQM and the penalties associated with non-participation. Matthews (1993) concludes, however, that "it is far easier to add courses to a curriculum or solve specific operational problems than it is to influence the direction of the institution as a whole or the behaviors of individuals" (p. 108).

In the Summary of the NSF Workshop on Quality in Engineering Education (Agogino & Ritchie, 1993), participants cautioned NSF not to use some of the jargon associated with "industrial" TQM with the academic community, as it may be offensive and even
counterproductive. They suggest, for example, that the notion of "customer" is better stated in terms of stakeholder or constituency. The participants also emphasized that it is important to recognize that academe consists of a broad range of institutions and associated missions and stakeholders; the fact that there is a general problem of quality does not imply that there is a general solution, but that the general quality process will be valuable in developing specific solutions tailored to meet the needs of individual institutions.

Administration, research, and curriculum are the three components of the TQM program at the University of Wisconsin-Madison. Administratively, the leadership is with the Director of the Office of Quality and the Deans of the College of Engineering and School of Business. The College of Engineering mission is threefold: 1) provide undergraduate, graduate and continuing education of the highest quality, 2) conduct and transfer leading edge research, and 3) exceed customer expectations of educational programs. Leadership teams in engineering have completed training in key process improvement and teamwork; they have developed strategic plans and are working on key process improvements. The college has developed and administered surveys of alumni, employees, area businesses, faculty, and undergraduates to assess the current situation and identify gaps. Regarding research in the College of Engineering, the focus has been on a design process for continuous
improvement of teaching. Using a participatory management system, twelve faculty have been involved in a research study with both qualitative and quantitative measures to determine whether team discussions of teaching and learning would impact attitudes about and actions in the classroom. This "grassroots" effort of faculty now involves thirty faculty and plans include proposals for funding to expand the process to more engineering faculty. The original study team is focusing on teaching and learning as processes that can improve; the three new teams have completed cause and effect diagrams and one team will focus on the evaluation process. This complements another quality improvement team whose mission is to improve the performance review process for teaching assistants in order to improve undergraduate education; with six TA Fellows representing five departments working on this project, they are using the seven-step improvement process and a facilitator.

Current TQM projects in UW-Madison's College of Engineering include: 1) faculty instructional improvement teams, 2) teaching assistant improvement workshops that are now a requirement of employment, 3) improvements in the materials laboratory courses, 4) curriculum improvement process for the year 2000, 5) support for instructional class technology, 6) a new Technical Communication Laboratory, and 7) the design and implementation of three communication modules to include written, oral and graphic presentation skills. The curriculum improvement process in
the College of Engineering already has a success story. Designating mathematics as the first area for investigation and improvement, faculty from Engineering and Math are already working together to streamline the math curriculum to better meet the needs of engineering students and faculty. This cross-functional team complements the work of the traditional curriculum committees within each department but leaves behind the preconceptions that generally accompany the activities of other groups. Also, complementing the focus on math improvement is the study within the math department that relates to the teaching methodology used in math classrooms. With an NSF grant, cooperative learning strategies and their impact on teaching and learning are the focus of a research study.

Current TQM projects in UW-Madison's School of Business include the strategic management and vertical alignment of the organization, the development of a new master's level course in TQM, and the development of TQM modules in several undergraduate courses. In addition, UW-Madison's Department of Engineering Professional Development (continuing education) has developed and is financing its own plan for continuous improvement. All employees — faculty, program assistants, and students — had the opportunity to attend professional development workshops; a leadership team identified a vision, mission, beliefs, and values, and designated three improvement projects. About twenty people are currently working on the three projects with a
facilitator: 1) curriculum planning process, 2) cycle time from program or course confirmation to publication, and 3) assessment of clients' needs (Courter et al., 1994).

At the Rochester Institute of Technology, the College of Engineering, as part of its TQM process, has developed long range planning which includes six basic components: 1) listen to faculty and staff, 2) develop a participative approach, 3) form faculty-led focus teams, 4) develop a plan, 5) implement the plan, and 6) improve the plan (forever after). The faculty-led focus teams target admissions, cooperative education and placement, curriculum, policies and procedures, research/engineering development, total quality, student needs, teaching techniques, diversity, industry needs, and faculty and staff needs. The College Executive Committee is the "enabler" and will help implement the recommendations of the focus teams. Regarding curriculum development, engineering design teams are shifting from the traditional to a TQM approach, from emphasis on design projects (not products) that are confined to single disciplines to an emphasis on interdisciplinary, cross-functional design teams and on product design; original plans were to have all team members receive the same grade.

RIT's College of Business echoes similar goals in curriculum, teaching, and service. Curriculum goals specify a focus on the student, listening to employers, and restructuring the college. Teaching goals focus on
cooperative learning, student teams, continuous feedback and tenure and promotion norms. In what may become known as a breakthrough in tenure review criteria, the College of Business has tied the total quality issue to their tenure review requirements. Their faculty unanimously approved this innovative tenure design to recognize the importance of tying the reward system to the new initiatives in order to get the intended results. Finally, service goals call for process analysis, focus groups and surveys, suggestion boxes, and shared governance.

RIT, as an institution, has specified goals for TQM that incorporate both the colleges of engineering and business: 1) a focus on cross functional activities both between the two colleges and within each college as interdisciplinary teams, 2) an exploration embedded course in both colleges (i.e., a business management course in engineering's core curriculum and a general engineering course in business' core curriculum), 3) a balance between integrating TQM into existing courses and developing stand-alone courses, and 4) a focus on interpersonal skills development to include team building, empowerment, and effective meetings. Finally, a challenging research idea is to determine how to better integrate developing teamwork with methods of evaluating individual employee achievement (Courter et al., 1994).

The J.L. Kellogg Graduate School of Management at Northwestern University has initiated the TQM process in
curriculum development and through intensified faculty recruitment. However, they have taken other important TQM inspired initiatives, including: 1) requiring new faculty to attend an orientation session, 2) developing a faculty mentor program, 3) exempting new faculty from teaching in their first quarter at Kellogg; instead, they sit in on classes of the most successful, experienced teachers, 4) assuring that new students never see inexperienced faculty, 5) rewarding outstanding teaching by the school and by the students, 6) stressing working in groups, and 7) building diversity by establishing a standing committee to advise the deans toward fostering a more humane and diverse community. Additional TQM initiatives in the planning and design stage include, curriculum review to replace required courses with intensive counseling and customized study programs for each student; redesigning the grading system to motivate and reward without threat; and providing professional pedagogical support capability by adding a professional to counsel and critique faculty regarding teaching performance - this person would conduct teaching seminars, edit a newsletter, videotape classes, advise on the design of teaching materials, conduct faculty orientation, administer the mentor program, and counsel faculty on personal problems as they relate to teaching (Greenbaum, 1993).

Implementation of TQM in the Curriculum

In "An Open Letter: TQM on the Campus" (Robinson et
al., 1991), the chairmen of American Express, Ford, IBM, Motorola, Proctor & Gamble, and Xerox wrote,

We believe business and academia have a shared responsibility to learn, to teach, and to practice total quality management. If the United States expects to improve its global competitive performance, business and academic leaders must close ranks behind an agenda that stresses the importance and value of TQM.

Despite some successful collaboration between business and higher education in advancing total quality management, widespread adoption of TQM is moving too slowly to meet the challenge. For a variety of reasons, businesses are often hesitant to open their quality systems to academic scrutiny, thus hindering the study and understanding of TQM by the academic community. And because of the limited amount of scholarly research, many academic institutions have been slow to incorporate TQM into their core curriculum and their own administrative practices.

This situation is bad for us all. Business bears the burden of educating and, in some cases, reeducating new hires. This not only represents an additional cost but also perpetuates a competitive disadvantage. And academic institutions that are slow to embrace TQM, at best, miss the opportunity to lead change and, at worst, run the risk of becoming less relevant to the business world (pp. 94-95).
In their letter, they supported these statements by quoting two surveys conducted by Robert Kaplan, professor of business administration at the Harvard Business School: 1) in his survey of 20 leading business schools in the United States, only 20% of the introductory operations management courses spend more than three sessions on quality, and 2) in his survey of four operations management journals, of the 278 articles published in the last few years, there was virtually no direct coverage of TQM. The letter then urged business and academic leaders to act to generate greater cooperation and understanding in the advancement of TQM. For businesses, the chairmen suggested that they open a dialogue with the academic community by inviting academics and students to their facilities to study their TQM practices and by setting up formal relationships with local colleges and universities to encourage research of these TQM practices. They also suggested that business identify TQM leaders within their organizations to conduct seminars and lectures on the campuses. Finally, they suggested that business communicate their TQM needs to the administrators and faculty where they recruit and establish formal guidelines for hiring that include a minimum curriculum of TQM training, making TQM an integral part of on-campus interviews. For universities and colleges, the corporate chairmen suggested that they learn what leading TQM organizations here and abroad are teaching their employees by encouraging company visits by faculty and developing
closer relationships with local TQM companies. They also suggested a research agenda in total quality management and taking an inventory of their curricula, measuring the proportion of quality-related course content in core courses as well as electives.

In a 1989 Accreditation Board for Engineering and Technology (ABET) conference on Statistics and Probability in Engineering Education, various representatives from industry stated that industry is not happy with the preparation of college graduates for work in industry. Many companies, particularly the automotive industry, have resorted to remedial programs to educate their new and experienced engineers about statistical tools (Litwhiler and Kiemele, 1994).

This concern is not only relegated to the education of engineers, but also to that of business graduates. According to Paul Froiland (1993), the initial spur to introduce the principles of total quality to academia came from business. In many cases, companies prodded schools into action with a combination of exhortations and threats. The Boeing Commercial Airplane Company in Wichita, Kansas, asked area colleges and universities to develop a degree program in TQM, resulting in Wichita State rapidly developing six courses for M.S. degree candidates in business that allowed them to earn a specialization in quality. Kansas Newman College, a liberal-arts college in Wichita, did Wichita State one better by developing a TQM
major in its business department and offering some of its classes at Boeing facilities; it now offers eight required courses in TQM in its B.S. program. At the same time, Procter & Gamble was suggesting at various quality forums around the country that business schools had better start teaching TQM or P&G wouldn't hire their graduates. IBM offered a positive incentive by establishing $1 million grants that it would give to selected schools for teaching TQM; one of the recipients of these grants, Oregon State, is adding to its one course in TQM by designing another that will be offered jointly through the business and engineering schools. As a result of meetings with P&G, Xerox, and Texas Instruments, University of Tennessee's business school, which instituted its first quality-oriented course in 1981, has transformed its MBA program by now offering 11 TQM courses. At the University of Wyoming, all business administration majors soon will be required to take a previously elective TQM course, in which they will be participant observers in an existing quality team on the university's administrative side or at a local hospital; the course requires students to give regular reports to the class on the status of the group with whom they're working. The University of Wisconsin's School of Business offers a variation of Wyoming's plan. Not only do the students go out and join teams in existing organizations, but the school requires these organizations' teams to come in and take the course along with the students. Another undergraduate
school, Marian College in Fond du Lac, Wisconsin, offers 14 courses in what it calls its quality and productivity-management program (Froiland, 1993).

In the winning proposals of the IBM-TQM grant competition, two approaches were evident in the area of curriculum development: 1) introducing TQM principles across the curriculum by embedding the material in existing coursework or 2) offering separate courses in TQM. The University of Wisconsin proposed creating a series of modules by identifying the key sequences of core courses taken by undergraduate engineering and business majors and building a knowledge base of quality concepts and methods over their four-year university experience. Wisconsin's reasoning for implementing course modules is that their programs already require too many courses: "Business and engineering students' university programs are already completely filled with required courses on engineering design, engineering science, marketing, finance, accounting, and management, which rightly are the mainstay of the curriculum. . . . Adding new required courses would be exceedingly difficult and would be ineffective in integrating these vertical functions under TQM; yet new knowledge needs to be learned" (Seymour, 1993a, p. 10-11). These course modules will consist of teaching materials ranging from one lecture to several lectures of coverage and include lecture notes, readings, examples, visual aids, and assignments. In Wisconsin's School of Business, modules are
being developed for several accounting courses at the undergraduate and graduate levels; in the management curriculum including a) introduction to total quality, b) organization as a system, and c) benchmarking: linking total quality and organizational learning; and in an introductory organizational behavior course. Also, since their proposal was submitted, Wisconsin has now decided to offer some experimental courses that specialize in TQM. One special topics course in Industrial Engineering has two different sections: one covers quality assurance and includes ISO9000 standards and related documentation; another covers continuous improvement principles, team building, and communication skills including listening (Courter et al., 1994). The School of Business also plans to develop individual courses in TQM, such as "Strategic Quality Management," "Planning for Total Quality," "Leadership and Facilitation in TQM," and "Quality Function Deployment" (Seymour, 1993a). In a similar proposal, Pennsylvania State University's business program plans to integrate TQM materials into four college-wide courses that are taken by all business students during their junior year. Oregon State University and Georgia Tech, on the other hand, proposed a more expansive methodology for teaching TQM across the curriculum, by using the Malcolm Baldrige National Quality Award examination's seven categories: strategic quality planning, human resource development and management, leadership, the quality assurance system,
information and analysis, and customer focus and satisfaction. Both universities plan to integrate these TQM categories (criteria) into various required courses throughout the four-year curriculum (i.e. integrate "leadership" into the initial freshman course through team assignments and group projects, integrate "information and analysis" into physics and chemistry laboratory courses through statistical methodology and application, etc).

Most of the IBM competition-winning institutions also had some stand-alone TQM coursework in their proposals, from which two approaches emerged: 1) sequencing and 2) introduction and capstone. The sequencing approach consists of a series of individual courses that are both linked and required. The University of Maryland, for example, is developing an undergraduate concentration of four courses on various aspects of TQM (overview, global competitiveness, measurement, and practicum). Students, working in engineering and business teams, will take one course in each of four years, supplemented during the off-semesters with executive seminars, internships, and co-op. In the introduction and capstone approach, the institution concentrates resources on the development of a comprehensive "introduction" course, which is often accompanied by a senior-level capstone course. A TQM introduction course offered by Oregon State University's College of Business, for example, teaches students TQM concepts that can be applied to organizational processes. The students also
complete a Hoshin planning exercise and make a case presentation of an organization using TQM. At Pennsylvania State University, the College of Engineering offers an introductory undergraduate course, "Engineering Statistics and Quality methods," designed to teach engineering analysis methods, together with the Total Quality framework in which they are practiced in companies; eventually this course will become a part of the core curriculum. Also at Pennsylvania State University, a new one-credit interdisciplinary seminar has been proposed to expose business and engineering students to world-class quality organizations; representatives of industry, service, government, and educational institutions will be invited to talk about the role of TQM within their organizations (Seymour, 1993a).

Implementation of TQM in the Classroom

In The Quality Professor: Implementing TQM in the Classroom, Robert Cornesky (1993) defines a student as a customer, a worker, and a product. As a "customer," the student pays for a service - an education - and the instructor provides that education (or at least the opportunity for one) as a "vendor." As a "worker," the student must put forth the effort and perform certain functions in order to learn, and the instructor must organize, motivate, control, and evaluate the student, functioning as a "manager." As a "product," the student is what the system of higher education produces, and the
instructor is one of many artisans responsible for ensuring the quality of that product. The next point he makes is that the drive to learn is supremely human; people learn in different ways, to varying degrees. The discrepancy comes when some students don't want to learn material in the way the instructor planned, whether it be lecture, discussion, or experimentation. Cornesky feels that TQM offers an answer to this dilemma. While the instructor may know how to best teach the material, he/she can improve student motivation through teamwork and his/her own suggestions. He suggests that students who actively participate in the decision-making process will probably be more successful, develop better critical thinking skills, and become lifelong learners. TQM measures the quality of work and also allows the customer (the student) to communicate with the decision-maker (the instructor) to continuously improve the educational process. The resulting group effort focuses on processes and systems rather than on one person's performance evaluation (examples of classroom systems are teaching methods, grading procedures, and assignments). Cornesky warns, however, that although the TQM approach requires little monetary investment, it does require a great deal of effort on the instructor's part to maintain the group process.

Robert Cornesky (1993) suggests that an instructor can begin TQM in the classroom by systematically collecting data from his/her customers—students, as TQM tools permit one to
measure what has occurred within the classroom. The instructor can start surveying student expectations and assessing his/her ability to adapt to those expectations on the first day of class; this first step becomes a continuous process throughout the course. Also, at the beginning of a course, a "constancy of purpose" must be achieved by producing an action plan that concentrates on focused objectives. Cornesky offers the example of Bill Cerbin, from the University of Wisconsin - LaCrosse, who uses a course portfolio to create constancy of purpose. The course portfolio begins with a "Teaching Statement" that conveys the instructor's assumptions and beliefs about teaching and learning; it also explains the intended learning outcomes of the course, the teaching practices used to address the learning outcomes, and a rationale that connects the course goals to the instructor's methods. This teaching statement then provides a coherent framework for analyzing and evaluating teaching in the class.

Another essential element to successful implementation of TQM in the classroom is to educate the students in quality philosophies and processes and train them in the TQM tools and techniques they'll use. Initially, however, students may consider the process of gathering data and identifying problems as a threat, so the instructor must first establish trust by explaining the need for comprehensive measurements: to demonstrate trends in student satisfaction, to determine whether the instructor is
fulfilling his/her mission and achieving quality goals, and to let students know how well they and their classmates are performing. Once the instructor and students feel comfortable with implementing TQM, they can chart a plan of action with the Deming Plan-Do-Check-Act (PDCA) cycle. The first step, "plan," requires the instructor and students to carefully review the goals of the class; with these goals as a focal point, a quality team can then be formed to uncover problems (based on data) and seek possible solutions. It is important to establish a consensus on the best plan, as otherwise, there is a risk of having less than total commitment from the students. The TQM tools necessary to accomplish this objective include Nominal Group Process, the Affinity Diagram, the Cause-and-Effect Diagram, the Force Field Analysis, the Pareto Diagram, the House of Quality technique, the Run Chart, the Systematic Diagram, the Scenario Builder, the Histogram, Flow Charts, and Control Charts. The next step in the action plan is "do." Simply stated, this means that everyone must be dedicated to carrying out the plan. A flow chart is drawn showing where changes will be made; this should be posted alongside a flow chart of the original classroom system to show changes in the process. Once the action plan has been followed through long enough to allow it to work, there is an assessment, or "check" phase. At this point, the students and instructor study whether or not the implemented changes have produced the desired results; "checking" does not simply mean
evaluation by the instructor, but includes empowering the students to assess their work and the work of their classmates. Finally, "act" by using the evaluative data to improve the process and make changes when the data provide evidence of problems (Coronesky, 1993).

Coronesky (1993) explains that the TQM model is predicated on continuous improvement - that is, change for the instructor and the students. The TQM approach gives the class an opportunity to become a team to resolve problems. It thus become everyone's responsibility to resolve problems; no longer is it just the obligation of the instructor. None of this improvement comes, however, unless the instructor takes time to educate the students. One way for the instructor to educate and empower students is by being a role model. This involves attention and motivation, being a model of self-discipline, and being interested in learning. Empowering students also means showing respect by leading students and allowing them to work together or individually, knowing that if they are given the proper tools to do the job, they'll want to do it well. Quality instructors remain open and responsive to students. For them, actions speak louder than words, and as they implement TQM, they are cognizant of their modeling role. They are eager to provide assistance, learn more, and learn from the students, thus becoming the students' coach and cheerleader. In the "coaching" role, the quality instructor uses goal-setting, self-evaluation, self-reinforcement, self-
motivation, and critical thinking to help students learn complex concepts. He/she assumes responsibility for adequately teaching TQM principles and statistical tools, to empower all students to begin continuous improvement. As a cheerleader, the quality instructor provides encouragement and rewards for the students' efforts toward quality work. The quality instructor also encourages team work and interaction with other students. Students work collaboratively, solving problems of increasing difficulty and develop the ability to work in teams. They also respect others, realizing that the success of the class depends on the success of each individual. Finally, students assume a primary role in evaluating each other's work, as they are trained in evaluative techniques as well as identification of quality work (Cornesky, 1993).

Few documented examples can be found of implementation of TQM in a classroom setting. However, Potocki, Brocato and Popick (1994) presented a report of how an educational team used TQM methods to teach total quality management principles to graduate students as part of a masters degree program in technical management at Johns Hopkins University. In designing and delivering the course, they used the following TQM principles and methods: 1) "customer focus," by treating the students and the organizations in which they work as customers, 2) "empowerment," by giving each student choices from ten different TQM texts and a personal class project related to the student's work, profession, or
interest, 3) "teamwork," by involving the students and the educational team, through problem-solving exercises and meetings, to continuously evaluate and adjust the course relative to class objectives and student feedback, 4) "data-driven decision making," by employing one-minute feedback during each session, two classroom focus groups, and an end-of-course evaluation conducted independently from the university, and 5) "leadership," by utilizing the TQM tools during instructional segments, soliciting and responding to student feedback, and teaming with the class in continuous improvement efforts.

Delaware County Community College (DCCC) reports that now that TQM has been integrated into the college's administrative operations, the next primary goal is to integrate TQM into the teaching and learning process. Key faculty members are introducing TQM into the classroom by requiring their students to write short answers to the following questions at the end of each class: 1) what was the most important point you learned today? 2) why was it important to you? and 3) what still puzzles you? Six DCCC faculty in architecture technology are using a "customer-window" approach to determine both the importance and the effectiveness of many teaching components: text, class pace, videos, exercises, homework, etc. Questionnaires are filled out regularly and are discussed, and students and teachers make changes based on the responses. Furthermore, data are compiled across sections of the same class and over
time to establish patterns of effectiveness (Entner, 1993).

Rochester Institute of Technology also reports that over half of its engineering faculty are now using the "one-minute" essay effectively to help measure the level of understanding that their students have of the course material. Using this technique many times throughout the course allows the faculty to adjust the material so more students understand the concepts and can apply them effectively to new situations (Courter et al., 1994).

At the University of Maryland's College Park campus, Maryam Alavi, associate professor of business, teaches her Management Information Systems class through the use of computer terminals. One of the benefits of using this technology is instant classroom measurement and feedback. When Professor Alavi activates her feedback meter software, there is a new display in the upper corner of students' monitors. The small green block is labeled "got it;" the red block is labeled "don't get it." Anonymity allows all students to respond, providing Professor Alavi with real-time feedback that shows up on her monitor in the form of a red-green bar chart. The result is real empowerment and the involvement of the student and allows the professor to immediately try another approach in teaching the specific material being covered (Seymour, 1993c).

TQM in the classroom often means that students work on team projects and many schools grade students as a team as well. A true commitment to the TQM philosophy would mean
giving no grades at all. However, Columbia Business School, which practices TQM in the classroom, still grades on a curve. Students form groups of their own choosing, having three to five members, and they are graded mostly as a group - although they do receive grades on individual projects as well. Kansas Newman College, also practicing classroom TQM techniques, gives group grades, but in the face of opposition from some students who want to use a high grade-point average to get into graduate school. At the same time, other students endorse the position of Deming, wanting to eliminate grades altogether, citing the incongruity of setting up a philosophy of teamwork, but giving grades. Other schools take a variety of approaches in the implementation of TQM in the classroom. In the University of Tennessee's business school, students are in the same team for the first year and earn team grades. The Simon Graduate School of Business Administration at the University of Rochester assigns students to teams, but gives them individual grades. And at the University of Wyoming, their single TQM course gives team grades on team assignments and individual grades on individual assignments (Froiland, 1993).
CHAPTER V
DISCUSSION AND SUMMARY

Higher education in the United States, for the most part, is in a state of crisis - the same type of crisis that American business and industry has faced and is continuing to face. Higher education costs are spiralling, resources are dwindling, competition for students is increasing, and students are demanding a quality education and better service for their tuition dollars. Educational institutions are now operating in an age of consumerism - a buyer's market - where customer (student) satisfaction is a key element in enrollment management, thereby determining fiscal soundness. Short-term efforts, such as reduced budgets and course offerings, downsizing, and hiring freezes attempt to address current difficulties at hand, resulting in what many call crisis management. But these short-term management efforts do not address the future. What long-term management plan should a higher education institution follow to ensure competitiveness and retain or regain fiscal stability? Because status quo management of higher education is no longer effective in today's competitive environment, an increasing number of colleges and universities are looking at management techniques being implemented by business and industry and one of the more prevalent philosophies being explored, discussed and implemented by these organizations is Total Quality
Management. Because successful implementation of this management philosophy is a long term process, TQM is still considered to be in its "infancy" in corporate America. However, those organizations who have faithfully followed its philosophy, processes, and procedures have reported successes in increased quality of products, improved customer satisfaction, and greater profits. Therefore, many colleges and universities are now following corporate America's lead and are also discussing and exploring the feasibility of effectively using the Total Quality Management philosophy in their own institutions. A number of them have even gone beyond the discussion stage to the actual process of implementing TQM at their institutions. However, few of these colleges and universities have begun implementing TQM beyond the administrative, service, and non-academic units of their institutions. And those higher education institutions who have ventured with TQM into their academic units are primarily still in the planning stages. Therefore, the question still remains: can TQM be successfully implemented in an academic unit of higher education?

Although there are some documented "success stories" on implementation of TQM in an institution's academic unit, they are currently scattered and sporadic. A primary reason for this, of course, is because these institutions, though dedicated to the TQM philosophy, are still in the planning stages or the initial stages of implementation - they have
nothing yet to report. Marchese (1993) stated that we're years away from knowing what academic versions of TQM will appropriately look like. Therefore, it will be a number of years before substantive and substantial research can be conducted on the implementation of TQM in academic units. However, because of the Total Quality Business and Education Partnerships, the IBM-TQM Partnership with Colleges and Universities, the TQM University Challenge, and the American Association for Higher Education's Academic Quality Consortium, pertinent research on this subject will eventually be conducted and shared; and this research is greatly needed and awaited for.

Steven Brigham (1993), director of the Continuous Quality Improvement Project at the American Association for Higher Education, suggests that because service industries generally have met with less success in TQM than manufacturing thus far, higher education has good reasons to be wary. However, he warns that higher education, though a late arrival on the quality scene, still must pioneer into very new territory as it cannot afford to go slowly; the demands for quality escalate by the month. Peter Ewell (1993), senior associate at the National Center for Higher Education Management Systems, states that although much of the academy's initial reaction to TQM has been negative, there is undoubtedly something to the movement, as TQM's concepts intrigue growing numbers of professionals in higher education and counts in its ranks a large proportion of
universities standing high on the reputational pecking order. L. Edwin Coate (1991), vice-president for finance and administration at Oregon State University, warns that gaining acceptance on the academic side for the idea of working in (TQM) teams may be a challenge at any university. However, he also shares OSU's experience that gradually, some members of the academic community began to give qualified approval to TQM, quoting one faculty member who suggested that the great value of this concept was that it would change their orientation to seeing students as customers. In statements such as these, it appears that although academia may view TQM as an effective way to improve its performance, there is also much wariness of proceeding into the unknown. It almost suggests that although academia wants to try TQM, it is afraid to start the process.

Although there is currently a lack of empirical research available on this subject, it is my conclusion, after conducting this historical overview of implementation of Total Quality Management in business, industry, and higher education, that TQM can also be successfully implemented in an academic unit of higher education -- if the TQM philosophy is presented to that unit's faculty, staff, and administrators in a realistic and planned manner and if the top managers and its employees have the patience and perseverance to initiate and continue this long-term, time-intensive, but effective process. Implementation of
TQM in an academic unit will present some unique and challenging obstacles that may not have been experienced in other sectors, but that does not mean that it cannot succeed. TQM is well-grounded in a scientific approach to problem solving and it has been tested, scrutinized and revised in thousands of organizations (Seymour, 1993b); it has effectively been implemented in business, industry, service organizations, government and educational institutions and there is no logical argument as to why it cannot be implemented in an academic unit. A logical argument for the implementation of TQM in an academic unit - particularly in engineering and business units - is that there is a very real danger that academia is teaching one set of values and adopting a different set for itself (Matthews, 1993). Business and industry are prodding academia to not only incorporate TQM in its core curricula, but to also practice it. In "An Open Letter: TQM on the Campus," chairmen of major corporations stated, "We believe business and academia have a shared responsibility to learn, to teach, and to practice total quality management. ... Academic institutions that are slow to embrace TQM, at best, miss the opportunity to lead change and, at worst, run the risk of becoming less relevant to the business world" (Robinson, et al., 1993, p. 94). John White, dean of engineering at Georgia Institute of Technology, warned, "Academia better not try to teach quality to students and not demonstrate and manifest quality" (Bemowski, 1993, p.46).
Some of the core principles of TQM have similar academic counterparts, and these need to be carefully pointed out and explained so that the academic unit's employees understand that TQM is not a totally new concept, but they may already be implementing some of its tenets without realizing it. Academic units and/or its curriculum departments already have faculty committees that address such issues as curriculum development, the graduate program, research, and teaching effectiveness; some may even have college-wide committees with faculty representatives from each department. Since these committees already embody some of the TQM philosophies of decentralized management and employee empowerment, TQM is at least partially being practiced in that academic unit. Marchese (1993), feels that the academic world is ready for TQM's principles of decentralized management and empowerment; he contends that where TQM has been initiated on campuses, the idea of working in teams with real authority has "struck a positive chord, to the frequent happy improvement of work processes and morale" (p. 13). Another core element to TQM is to create or revisit the organization's vision statement in order to answer the questions of what business it is in, what principles guide the organization, and what it is that the organization wants to become. In order to plan for the future in the changing environment in which they are operating, many colleges and universities are now implementing strategic planning processes, in which the
institution and its academic units are developing or have completed new vision and mission statements (strategic plans). Also, in many cases, these vision and mission statements have been developed with input, or at least consensus, from the faculty, staff, and administrators. If an academic unit is in the process of or has created a new strategic plan, this also can be pointed out as a core element of TQM that is already being practiced by that unit.

Although the best scenario for successful TQM implementation in an academic unit would be for the entire university to embrace the TQM philosophy, reality does not always allow this to happen. Therefore, an academic unit may decide on its own to implement TQM just within its area. If this is the case, then the top manager of that academic unit (the Dean or Chairperson) must commit fully to the philosophy of this quality initiative in order for it to be effectively and successfully implemented; and even if it is not being initiated university-wide, full support for this TQM initiative must also be received from the university president and executive management. Deming (1986) insists that management, not labor, bears the primary responsibility for making quality happen. This commitment by the academic unit's top manager must include an educational effort to change the unit's culture (i.e. how it recruits, trains and manages employees; how it deals with its sources for students; and how it relates to its students), and a long-term education to increase the unit's effectiveness (i.e.
planning, problem solving, consensus building, communicating, and using process improvement teams) (Weaver, 1993). In addition, the unit's manager must create a climate for change by providing facilitative leadership. This will require him/her to identify key stakeholders and include them in decision making; be trained in TQM principles, tools and process; create a culture that encourages and rewards continuous improvement; demonstrate constancy of purpose; and manage several levels of change, intervening when and where necessary to make sure strategies work in unison (Showalter & Mulholland, 1992). This means that the top manager must continually "walk the talk" of TQM by leading and guiding (rather than managing), collaborating, focusing on the processes, using informal networks, viewing people as assets, and promoting diversity, flexibility, openness, sharing, risk taking and involvement (Wason & Bhalla, 1994).

Doubts and resistance to the TQM effort will undoubtedly be experienced from at least some of the academic unit's employees and this skepticism must initially and continually be addressed. First of all, the word "management" in Total Quality Management may be objectionable especially to the faculty, as they may feel the word is too "commercial," "managerial" or "non-academic," or that they might lose control of important academic processes. In implementing TQM in an academic unit, a decision must first be made as to what to call it;
if it is thought that "Total Quality Management" may meet resistance, then another name should be selected, such as "Continuous Quality Improvement." Others may resist implementation of TQM because they may think of it as just another "management fad." To provide motivation to the employees, positive impacts of TQM should be suggested and explained: the reduction of fire fighting by focusing on process and root causes rather than symptoms; the ability of TQM to solve long-standing problems that have not received the attention of management; the improvement of personal skills and capabilities; the improvement of team skills and capabilities, resulting in more effective meetings and management; the introduction of the internal customer - to help break down departmental barriers or to build a customer-supplier network across the curriculum; and the empowerment of the individual, which puts decision making into the hands of those closest to the work (Ewell, 1993; Price & Chen, 1993).

Probably the greatest resistance to TQM that will be experienced in an academic unit is the use of the word "customer." This again may be attributed to the faculty's resistance to TQM's commercial origins, but more importantly, it is because acknowledgement of being "in service" to anyone may directly threaten their value of independent inquiry, conducted on its own terms and for its own sake. Particularly when applied to instruction, the term also suggests a surrender of expertise and authority,
especially if the faculty relate it to the slogan "the customer is always right" (Bemowski, 1993; Ewell, 1993). However, if TQM philosophy and principles are to be effectively and successfully implemented in an academic unit, total acceptance and wholehearted belief in customer focus and service must be instituted. To counteract this resistance, it must be explained to the faculty that the customers (students) are not always right, but the customers do deserve to be listened to. Also, it should be pointed out to the faculty that TQM is a system that enables service providers to make better choices, not one that gives control to those who are served (Shaw, 1993).

Finally, faculty must be involved early in the improvement of core processes, if TQM is to succeed. Brigham (1993) noted that higher education's most salient industry model is health care and the hospitals who have been most successful in implementing TQM and improving their core processes have involved their doctors early and extensively. Therefore, if the core processes of classroom and curriculum issues are to be addressed in an academic unit, then the faculty must be involved early in the implementation process; it is important that all faculty ranks be involved, especially the tenured, full professors. Also important to remember is that the implementation of TQM should start with just a few selected teams; designating too many process teams in the beginning may overwhelm the entire TQM process. Projects should initially be chosen that will
show visible results in a short period of time and also show improved service to the students. Before any process can be improved, however, reliable measurements must also be made available in order to measure its success in delivering what it promises (Seymour, 1993b). Therefore, the academic unit must improve its management information systems to make this data readily available. A final barrier to TQM that must be addressed is the problem of faculty who decline to participate in the process initially or even permanently. Since it is important in TQM to establish rewards and recognition, participation and successes should be recognized in the academic unit's promotion and tenure process and through merit salary increases.

Daniel Seymour (1993b), a noted author on TQM in higher education, states, "Quality can be actively and aggressively managed into our colleges and universities" (p.x). However, he warns that the driving force behind quality management should be the performance-related question, "What do I want to achieve?" Seymour explains that this requires that individuals think hard about measurable objectives and then redesign processes and reallocate resources to meet those goals. Instead, some organizations tend to stress activity-centered quality programs. They spend too much time debating grand, abstract visions, staffing a "Quality Office," developing comprehensive training programs, and producing newsletters, and they spend too little time focusing on achieving measurable operational improvements.
(Seymour, 1993d). Brigham (1993) also offers advice to those new to the TQM game: concentrate on the basics, promote teamwork, benchmark immediate competitors only, and become more responsive to the customer. And finally, although TQM is now being effectively implemented in academic units of selected colleges and universities, Richard DeCosmo, president of Delaware County Community College and a "veteran" of TQM, cautions that TQM requires an intensive commitment: "Causing a cultural change, especially in a traditional institution, is a slow process, and not one for faint-hearted leadership" (Entner, 1993, p. 34).

Total Quality Management can be successfully implemented in an academic unit. However, there has to be a total, long-term commitment to the TQM philosophy - a complete "buy in" to the concept - resulting in full support from top management, true empowerment of the employee work teams, a change in the unit's culture, and unwavering dedication to customer focus and satisfaction. Because the TQM concept undoubtedly will have to be "tailored" for higher education, it is imperative that research be initiated to further investigate this very important and timely issue.

Based on the findings of this study, a suggested model for implementation of TQM in an academic unit is outlined in Appendix A.
APPENDIX A

Suggested Implementation Steps of TQM in an Academic Unit

1. Top management must commit to Total Quality Management
   - Recognize importance of management commitment through study and planning
   - Commit to at least a five-year plan to implement TQM
   - Review TQM philosophy and principles
   - Review your competitive position

2. Create a Mission and Vision (strategic plan) for the academic unit, incorporating the commitment to TQM
   - Issue a policy statement on the principles of quality

3. Establish a Quality Council
   - Include the top manager of the academic unit as an active member
   - Include other managers within the academic unit
   - Quality Council should act as an "enabler" to help implement recommendations of TQM project teams
4. Develop a TQM strategy for the academic unit
   - Determine approach to enhance quality in the academic unit
   - Solicit a corporate sponsor to assist in TQM training and expertise
   - Encourage early participation by having a consultant (familiar with implementation of TQM in higher education) conduct "orientation" training about TQM philosophy for all employees
   - Use existing management systems, wherever appropriate, in implementing TQM

5. Identify customer needs
   - Identify your internal and external customers
   - Determine and prioritize customer needs through surveys of students, alumni, faculty, employees, and business/industry employers; focus groups; and from complaints/feedback
   - Develop measurements of satisfying your customers' needs
6. Target one to two specific areas as pilot projects
   - Projects should show results in a short period of time
   - Projects should result in visible improvement of service to students and/or other internal customers
   - Select interested staff and faculty (from all ranks) to be project team members, team leaders, and facilitators

7. Conduct training needs analysis of management and pilot project team members
   - Determine what types of courses need to be developed for each group (awareness, problem-solving, group dynamics, statistics, etc.)

8. Determine resources for training implementation
   - Determine time frames and costs for developing and conducting training
   - Identify sources of funding for training

9. Conduct training
   - Identify consultants who specialize in TQM for an educational setting
   - Identify universities practicing TQM to learn "best practices"
   - Partner with corporate sponsor and other companies practicing TQM for training and technical expertise
10. Identify and establish performance measures of customer expectations and requirements
   - Adjust existing measurement and management systems to measure whether customer requirements are being met

11. Implement the continuous improvement process in the pilot project teams

12. Monitor and evaluate results
   - Monitor the progress of the pilot project teams
   - Track quality improvements against goals

13. Recognize success
   - Publicize successes
   - Reward and recognize quality improvement (incorporate in promotion and tenure process and merit salary increases)
   - Promote TQM throughout the academic unit

14. Adjust your TQM process
   - Use feedback to modify and improve the process
   - Expand to other areas of the academic unit by selecting additional project teams and training team members in TQM
15. Continue to improve
   - Select new processes to improve
   - Continue to improve all processes to remove defects
   - Don't stop
BIBLIOGRAPHY


