

Administrators, Faculty, and Staff/Support Staff's Perceptions of MBNQA
Educational Criteria Implementation at the University of Wisconsin Stout

by

Paul E. Dettmann

Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University in

partial fulfillment of the requirements for the degree of

Doctor of Philosophy

in

Career and Technical Education

Approved by:

Kurt Eschenmann (Chair)

Curtis Finch

William T. Price, Jr.

Roberta Minish

Barbara B. Locke

July 2, 2004

Blacksburg, Virginia

Key Words: Malcolm Baldrige National Quality Award, Career and Technical Education, UW

Stout, Mixed Methodology

Copyright 2004

Administrators, Faculty, and Staff/Support Staff's Perception's of the MBNQA Educational
Criteria Implementation at the University of Wisconsin Stout

By

Paul Dettmann

Committee Chairperson: Dr. Kurt Eschenmann

Career and Technical Education

(ABSTRACT)

The objective of this study were to examine the perceptions of administrators, faculty, and staff/support staff of the University of Wisconsin Stout (UW Stout) to determine how well they felt the university implemented the Malcolm Baldrige Award (MBNQA) Criteria for Educational Performance Excellence and to identify the perceptions of what positive and negative changes were observed with the implementation of the criteria.

The design of the study was a mixed method approach and used both qualitative and quantitative research methodologies. Three survey groups consisting of administrators, faculty, and staff/support staff from UW Stout were randomly selected to participate in the study. Both quantitative and qualitative research methodologies were used in the instrument, which was disseminated in the fall of 2003.

An ANOVA analyses was conducted on the quantitative data at an alpha level of .05 which revealed significant differences in participants perceptions for categories one, two, four, and seven of the MBNQA categories. The analysis of the qualitative data found five positive themes: (1)

Recognition as a Center of Excellence, (2) Pride in Affiliation, (3) Positive Exposure/Marketing Opportunities, (4) Conduit for Continuous Improvement, and (5) Increased Communication. Further analysis revealed nine common negative themes: (1) Perceived Opportunity Costs, (2) Education/Training Needs. (3) A Lack of Continuous Improvement, (4) Increased Workload, (5) Disconnect Between the Award and the University Mission, (6) Campus Climate, (7) Increased Quality Expectations, (8) Decisions Being Made Without Following the Baldrige Model, and (9) Insufficient Employee Recognition.

Table of Contents

List of Tables	ix
Chapter I	1
Studies of Total Quality Management	4
Malcolm Baldrige National Quality Award	8
The University of Wisconsin Stout	9
Purpose of the Study	9
Research Questions	10
Research Framework	10
Research Methodology	11
Significance of the Study	11
Limitations	12
Delimitations	12
Definitions	12
Summary	13
Chapter II	15
Literature Review	15
Perceptions of Quality in Education	15
Quality in Education	16
Quality Principles	19
The Shaping of Higher Education	23
Pressures for Accountability	26
Continuous Improvement	27

Traditional Assessment Approaches to Quality in Higher Education	28
Accreditation & Detractors to Accreditation	30
Ranking and Ratings	31
Licensure	31
Partnerships with State Governments	32
A New Quality Paradigm for Higher Education	33
Total Quality Management (TQM) and Organizational Change	34
The Foundations of TQM	36
Continuous Improvement	36
Processes and Systems	37
Customer Focus	37
Management by Fact	38
Respect for People	38
Origins of TQM and Taylor's Influence	39
Deming's Contribution and His 14 Point Management Approach	40
Feigenbaum's Total Quality Control	49
Juran and Quality Improvement	50
Crosby's Fourteen Points	51
TQM Models Resulting from Theory	52
Differences Between Business and Higher Education	56
TQM Applications in Higher Education	57
Conditions Necessary for TQM Implementation	60
Higher Education Models	65

Problems and Issues of Applying TQM in Higher Education	66
The Malcolm Baldrige National Quality Award	67
Award Process	70
MBNQA Criticisms	72
Benefits of the MBNQA	73
Research Methodology	75
The University of Wisconsin Stout	75
Summary	77
Chapter III	78
Research Methodology	78
Research Design	78
Population and Sample	81
Reliability and Validity	83
Development and Description of the Instrument	84
Variables	85
Pilot Test	86
Data Collection	87
Tabulation and Organization of Data	88
Summary	90
CHAPTER IV	92
Results	92
Research Question One	93
Quantitative Data	93

Qualitative Data	100
Positive Outcomes	100
Negative Outcomes	104
Research Question Two	108
Research Question Three	111
Summary	112
Chapter V	114
Summary of The Study	114
Purpose and Research Questions	115
Research Procedures	116
Findings	118
Research Question One	118
Research Question Two	120
Research Question Three	120
Conclusions & Discussion	121
Conclusions	121
Discussion	122
Recommendations for Further Research	125
Recommendations for Practice	125
References	128
Appendix A	145
Appendix B	150
Appendix C	156

Appendix D	158
Appendix E	164

List of Tables

Table 4-1. Group Means for Each of the Seven MBNQA Quality Categories	94
Table 4-2. Group Perceptions for Category One: Leadership	95
Table 4-3. Tukey Multiple Comparison for Category One: Leadership	95
Table 4-4. Group Perceptions for Category Two: Strategic Planning & Development	96
Table 4-5. Tukey Multiple Comparison for Category Two: Strategic Planning & Development	96
Table 4-6. Group Perceptions for Category Three: Student, Stakeholder & Market Focus	97
Table 4-7. Group Perceptions for Category Four: Information & Analysis	97
Table 4-8. Tukey Multiple Comparison for Category Four: Information & Analysis	98
Table 4-9. Group Perceptions for Category Five: Faculty & Staff Focus	98
Table 4-10. Group Perceptions for Category Six: Process Management	99
Table 4-11. Group Perceptions for Category Seven: Organizational Performance	99
Table 4-12. Tukey Multiple Comparison for Category Seven: Organizational Performance	100
Table 4-13. Frequencies & Percentages of Participants Work Experience in Business or Industry	110
Table 4-14. Multivariate Analysis of Variance for Length of Service in Business Or Industry & Position at UW Stout	110
Table 4-15. Frequencies & Percentages of Participants Length of Service to UW Stout	111
Table 4-16. Multivariate Analysis of Variance for Length of Service & Position at UW Stout	112

CHAPTER I

“America is without doubt, in the midst of a quality revolution—a period of change affecting every type of business, enterprise, organization and person” (Oakland, 1989, p. X). This alarming trend has been documented by other leading authors as well over the past 15 years, such as Hendrick Smith (1995) and Tom Peters (1992, 2003). Today’s corporate leaders must recognize the value of an organizational push toward increased quality if they wish to remain competitive in the increasingly global world of business. Consequently, “improving the quality of products and services has become a national priority as never before in the ever increasingly competitive world market” (Glover, 1989, p. 22). Not unlike the industrial sector, institutions of higher education have also come under increased societal and governmental pressures to demonstrate their quality and economic and societal value (Lucier, 1992; Pounder, 1999b; Aly & Akpovi, 2001). In keeping with industrial trends, therefore, colleges and universities across the nation have chosen to apply industrial concepts, formulas, and management techniques in addressing their own needs for improvements in value, quality and competitiveness.

Quality theorists such as Juran, Deming, and Crosby, voiced some of the most profound and revolutionary ideas about quality in today’s business world. These internationally recognized experts achieved preeminence shortly after World War II, during the rebuilding of world markets largely destroyed during the war.

The messages of these world renowned quality experts is similar:

Commit to quality improvement throughout your organization; attack the process, not the employees; strip down the process to find and eliminate problems that diminish quality; identify your customers and satisfy their requirements; instill teamwork and create an atmosphere for innovation and permanent quality improvement (Coats, 1990a, p. 2).

Joseph Juran began his industrial career in 1924 as an electrical engineer with Western Electric in the inspection department at the famous Hawthorn plant. In 1928 he authored his first work on the subject of quality, a training pamphlet called “Statistical Methods Applied to Manufacturing Problems,” which explored the use of sampling in analyzing and controlling manufacturing quality. In 1937, Juran was promoted to the head of Industrial Engineering at Western Electric’s corporate headquarters in New York. During his tenure in this position he became an in-house authority on quality by visiting and exchanging ideas about industrial engineering with many different U.S. companies. In 1941, he took a new position with the U.S. Government as an assistant administrator with the Lend-Lease Administration, which managed the shipment of goods and materials that the Allied nations deemed crucial to the war effort.

After the war, Juran struck out on his own to devote the rest of his professional life to the subject of quality management. In 1951 he published his *Quality Control Handbook*, which firmly established Juran's reputation as an authority on quality and became the standard reference guide for quality managers throughout the world. As a result of this seminal book, Juran found himself in great demand as a world wide lecturer and consultant. In 1954, the Union of Japanese Scientists and Engineers invited Juran to Japan to deliver a series of lectures about managing for quality. Juran presented these talks soon after another American, W. Edwards Deming, delivered lectures on statistical quality methods. Taken together, the visits of Juran and Deming undeniably helped to launch Japan's remarkable ascent from its immediate post-war position as a producer of poor quality goods for export to its current reputation as a world paragon of manufacturing quality. Although Juran downplayed the significance of his lectures, the Japanese nonetheless considered the lessons they learned from him as significantly contributing to their impact on the world marketplace.

Even before Juran made his momentous visit to Japan, W. Edwards Deming was instructing the Japanese on principles of quality control and management that made up his 14-point theory of quality principles and managing quality. Although the Japanese had achieved a degree of competitive quality in certain areas prior to WWII, they had never tried to attain comprehensive quality goals in large-scale manufacturing of consumer products. This lack of across-the-board quality was the largest postwar hurdle faced by the Japanese in their attempt to rebuild their country and to sell goods on the world market. At about the same time Deming was hard at work in Japan, a young entrepreneur by the name of Philip Crosby was implementing and teaching the values of quality assurance to American companies.

Philip Crosby's career modestly began on an assembly line at the Crosley Corporation in 1952, when he decided that his goal would be to convince management that preventing problems was more profitable than just being good at fixing them. He then went to work as the quality manager for Martin-Marietta from 1957–1965, where he created the “Zero Defects” concept. This innovative idea stressed the formation of a “preventive culture” that encouraged employees to get things done right the first time. His next stop was corporate vice president of the ITT Corporation. During his 14 years at ITT, he worked with many world wide industrial and service companies, implementing the zero defect philosophy. To both Crosby’s and his clients’ delight, he found that the philosophy worked everywhere it was implemented.

In 1979 Crosby decided to leave the industrial sector and form his own consulting company where he taught his management principles to GM, Chrysler, Motorola, and Xerox. Since that time he has joined the ranks of W. Edward Deming and Joseph Juran as leading philosophers and authors in the field of quality and quality assurance.

Studies of Total Quality Management

One of the major motivators for the quality movement in industry has been the issue of survival. The loss of sales to foreign competition and an ever-decreasing profit margin has forced companies to rethink how they do business (Finch, 1999), including the use of Total Quality Management (TQM), to survive. The National Alliance of Business (1990, p. 5) noted, “Rapidly changing technology, the globalization of markets, and other changes sweeping through the U.S. economy means that our long held assumptions about the economy and business are changing.” This same message has become increasingly important to educational organizations as well. For many higher educational institutions, the selling point for implementing a quality program was a leaner budget, as well as the promise of higher efficiency and productivity inherent in certain quality systems (Cyert, 1993).

The idea of quality and transformation is not a new concept to the world of higher education. The application of this industrial model is also evident in higher education, as these institutions have historically strived for excellence and quality in academics. Achieving these goals has been easier in times of abundant resources and favorable demographics as difficult operational choices did not have to be made to the degree that they do today. Institutions of higher education, however, are increasingly challenged by diminishing budgets and changing stakeholder perceptions by the about the definition of what constitutes a quality institution. While the notion of quality was traditionally based on how selective a college or university could be in its admissions practices, institutions of higher education are now also being judged by many other factors, such as the employment rate of graduates and accreditation standards.

America’s economic status has generally had a profound impact on the financial conditions of public and private institutions of higher education. As economic prosperity grows,

the amount of money available to higher education swells; during times of economic downturn, their budgets shrink. Consequences of the latter are evident in the tightening of federal, state, and local government budgets and dwindling individual grants and gifts. Because of drops in tax revenues and the shifting of services from the federal government to state and local levels, combined with a reduction in individual grants and gifts, institutions of higher education have been forced to become more vigilant and tenacious in their pursuit of providing quality education at a lower cost (Michael, Sower, & Motwani, 1997). The implication of this shift in resource allocation is that colleges and universities must continue to provide the same services, but with less money. States, cities, and even universities are all receiving the same message: “Do more with less.”

A prime example of this message is reflected in recent cuts to Virginia Tech’s operating budget by the Commonwealth of Virginia. In less than one year, through two rounds of reductions, the university lost \$42.2 million of its \$186 million appropriation for academic programs. Moreover, the funding for building maintenance and repair was reduced by \$5.9 million to 80% of its 2001 level. The Virginia Cooperative Extension Service and the Virginia Agricultural Experiment Station lost approximately \$10.9 million from their respective budgets. All totaled (including reductions in equipment funding), the university’s base budget was reduced by a sizable 23 percent to \$61.5 million. If those 2001-02 reductions had not been sufficiently detrimental, Virginia Tech was slated to lose an additional \$11 million from the 2003 budget. In sum, these multi-year losses totaled more than \$72.4 million.

Regrettably, the economic downturn at Virginia Tech is being replicated at nearly every college and university in the nation. The magnitude of these fiscal problems, therefore, has forced educational institutions to rethink the way they do business—again, by doing more with

less. Miller (1990) referred to the expectation of maintaining or even increasing productivity in the face of profound budgetary and staffing cuts as “creative frugality.” In order to cope with hits to both staffing and funding, the higher education environment is being transformed by terms usually associated with big business such as globalization, technology, competition, diversity, and concerns about quality (Eckel, Green, & Hill, 2001). Thus, it is not surprising that educators—many at the urging of experts from industry—have looked to TQM as a possible remedy for change.

Two important studies have explored the degree to which higher education has applied TQM to its operational practices. The American Council on Education conducted a survey of changes taking place in the academic and administrative practices of American colleges and universities. According to Khawas (1993, p. 17), “survey results show that many campuses are considering how TQM, or other quality improvement techniques, might apply to their programs.” Khawas also reported that seven in ten universities used TQM practices and anticipated that two-year colleges would similarly report that their TQM activities were extensive.

Brubacker and Rudy (1976) who traced the history of higher education in America from 1636-1976 documented the evolution of changes that have occurred as a response to growth. This evolution can be seen in increased enrollments, new programs and curricula, the elimination of outdated programs and curricula, as well as administrative reorganization to accommodate new organizational structures that have emerged as a result of growth. Since the late 1970s, numerous private and public organizations have conducted national studies of needed reforms for higher education (Finch & Crunkilton, 1993). Despite the general agreement that higher education must change to meet the needs of an ever-changing society, some of these changes have been controversial—especially those involved the implementation of Total Quality

Management practices. As Powell (1995, p. 13) stated, for example, “The researchers know of no other management concept or practice that has received so much practitioner attention, with so little academic study as TQM”. In spite of this lack of academic study, the principles used to support quality organizations, and particularly how those principles support the historic values of higher education, must first be better understood in order to comprehend how TQM can be best used in education (Freed, Klugman, & Fife, 1994).

With the reduction of Federal funding in the 1970s and 1980s, several researchers have questioned the inherent value of a college degree. As Mayhue, Ford, and Hubbard (1990, p. xv) remarked, “since 1970, there has been a serious decline in academic and intellectual quality throughout American higher education ... We see a deterioration in the meaning of academic credit granted towards degrees...inflation of academic grades has become so widespread that grades no longer define different levels of academic performance.” In the same vein, Miller (1990, p. 16) maintained, “There is a very strong... unprecedented... concern for quality coming from business and industry sectors. The push is serving as a valuable basis of support for higher education activities, and it also has facilitated strong state legislative fiscal support for reform movement.” In addition, Aly and Akpovi (2001, p. 127) state that “following the path of Corporate America, many US Academic institutions have embarked on a mission to improve their quality in order to remain competitive”.

Based on these findings, the educational establishment must collectively and effectively agree to pursue the cultivation and nurturing of quality within all segments of the educational system (Parnell, 1985; Spanbauer 1989; Oblinger & Rush, 1997, Pounder, 1999a; Avdjieva & Wilson, 2002)). And as suggested earlier, perhaps the need and desire to pursue quality in our institutions of higher education can be accomplished by exhibiting the same type of

administrative and procedural actions that have proven successful in business practices (Deming, 1986; Owen 1989; Spanbauer, 1989).

Malcolm Baldrige National Quality Award

One such TQM management and planning tool that has gained widespread recognition in the business world is the Malcolm Baldrige National Quality Award (MBNQA). The MBNQA was developed by the U.S. Department of Commerce in 1988 to honor Malcolm Baldrige, who was Secretary of Commerce from 1981-87. Three yearly awards in three possible categories (manufacturing, service, small business) are given to U.S. companies for accomplishments related to quality and business performance. The award is intended to raise awareness about the importance of quality and performance excellence as a competitive edge. The Baldrige Award has given thousands of U.S. organizations a significant tool that can be used to assess and improve their performance on those critical factors that drive success.

In 1999, non-profit and for-profit educational organizations or private organizations that provide educational services in the United States or its territories were considered eligible to apply for an award in the education category. Since 1999, a total of 37 applications have been submitted in the education category (National Institute of Standards and Technology [NIST], 2001). Thus, lessons learned from the business community could be leveraged to provide a steady and proven course for higher education institutions to pursue performance excellence (Hertz, 2000).

The nineteen criteria used by the National Institute of Standards and Technology (NIST), which were selected by Congress to design and manage the award programs comprised the framework of TQM. These criteria, which have become national standards by which primary, secondary and higher educational institutions can evaluate themselves, are organized into

categories representing seven dimensions of quality management. These categories are (1) Leadership, (2) Strategic Planning, (3) Student and Stakeholder Focus, (4) Information Analysis, (5) Faculty and Staff Focus, (6) Educational and Support Process Management, and (7) Organizational Performance Results (NIST, 2001). To be seriously considered for the award, applicants must show achievements and improvements in the seven dimensions of quality management. Teams of examiners, primarily from the private sector, visit the final-stage applicants to clarify questions and verify information. Each applicant receives a report citing strengths and opportunities for improvement.

The University of Wisconsin Stout

The first awards were given out in the education category in 2001. The University of Wisconsin Stout (UW Stout), one of 13 publicly supported universities in the University of Wisconsin System, was the first recipient in the area of higher education. UW-Stout, founded in 1891 and located in Menomonie, has about 1,200 faculty and staff members, approximately 8,000 students, and has an annual operating budget of over \$95 million. UW Stout offers 27 undergraduate and 16 graduate degrees through three academic colleges: the College of Technology, Engineering, and Management; the College of Human Development; and the College of Arts and Sciences.

Purpose of the Study

The first purpose of this study was to examine the perceptions of administrators, faculty, and staff/support staff of the University of Wisconsin Stout (UW Stout) to determine how well they felt the university implemented the Malcolm Baldrige Criteria for Educational Performance Excellence. A survey instrument, developed to measure their perceptions of the effectiveness of the award, was given to members of each of the three UW Stout employee

groups. The second purpose of the study was to identify the perceptions of each of the three surveyed groups on what positive and negative changes were observed with the implementation of MBNQA criteria at the university.

Research Questions

The following three research questions that guided this study primarily used Quantitative methodology and focused on implementing the MBNQA Educational criteria at UW Stout:

1. What differences exist in the perceptions of administrators, faculty, and staff/support staff concerning how well the university implemented the MBNQA criteria?
2. What differences exist in the perceptions of administrators, faculty, and staff/support staff based on their work experience in business and industry concerning how well the university implemented the MBNQA criteria?
3. What differences exist in the perceptions of administrators, faculty, and staff/support staff based on their years of service to the university concerning how well the university implemented the MBNQA criteria?

Research Framework

The framework for this study is based on the theory of *change management*, or the continuous process of aligning an organization with its marketplace to become more responsive and effective than its competitors. The concept of change management is grounded in the principle of sustained measurement of and feedback from the people, processes, and systems within an organization, in which people behave as they are measured (Berger, Sikora, & Berger, 1994). These basic concepts associated with the theory of change management form the basis of both TQM and the Malcolm Baldrige Award and as such are important factors for this study.

Research Methodology

Both qualitative and quantitative research methodologies were used for this study. They were chosen because the process of integrating these diverse paradigms can better clarify and illustrate the findings (Creswell, 1994). To paraphrase Miles and Huberman (1994), the purpose for employing a mixed design is to add depth to survey information, to uncover a weakness in quantitative data, or to compliment the objective data. Another rationale for using a mixed-method study was to address both quantitative and qualitative research questions in one instrument. Moreover, the use of both open-ended and forced-choice questions on a single survey instrument has been shown to deepen the understanding of the research topic (Bragg & Reger, 2000; Brewer, 2001).

Significance of the Study

As has been suggested, institutions of higher education have established a trend of applying business and industrial management models to their own institutions. In particular, principles associated with Total Quality Management and the Malcolm Baldrige National Quality Award have become increasingly important to higher education administrators, as have the concepts associated with continuous quality management. As higher education leaders explore quality-related programming changes, they will need to learn the viewpoints of the administrators, faculty, and staff/support staff if those initiatives are to be successfully implemented. Findings from this study could provide valuable insight into these perceptions. From a practical standpoint, information gained from this study may be useful to quality consultants, as well as to other higher education administrators who are interested in implementing the MBNQA criteria in their own institutions.

Limitations

As noted by Hamel (1993, p. 23) a limitation of qualitative case studies, is “ the case study has basically been flaunted for its lack of representatives.... and it lack of rigor in the collection, construction, and analysis of the empirical materials that give rise to this study. This lack of rigor is linked to the problem of bias... introduced by the subjectivity of the researcher.” These concerns were addressed in two ways during development of the research instruments. The first method of minimizing the limitation of a qualitative case study concerns the research questions used in the instrument. Specifically, the instrument questions were created from the queries asked in the MBNQA application, thus making the instrument highly relevant. The second method was use of two independent MBNQA examiner experts to rate the relevance of each question on the instrument.

Delimitations

This study was delimited by two factors. The first is that the study was delimited to the administrators, faculty, and staff/support staff at the University of Wisconsin Stout. A second delimitation of this study is that the quantitative portion of the instrument was comprised of content criteria specified by the MBNQA.

Definitions

The following definitions are used in this study:

- Adoption:* A decision to make full use of a particular innovation as the best course (Berger, et al., 1994).
- Change Agent:* An individual who influences the innovation-decisions in a direction deemed desirable (Berger, et al., 1994).
- Evaluation:* A process of gathering data.

Mixed Methods: An approach that applies both qualitative and quantitative methods to an investigation (Farmer & Rojewski, 2001).

Total Quality Management (TQM): A continuous improvement process consisting of a scientific, systematic approach to meeting the needs of external and internal customers by continuously improving systems. Phrases that are synonymous with TQM include Continuous Quality Improvement (CQI), Total Quality Control (TQC), Continuous Improvement (C), and Total Quality Systems (TQS) (Berger, Sikora, & Berger, 1994).

Triangulation: The convergence of multiple sets of data to interpret a single problem (Farmer & Rojewski, 2001).

Summary

Quality and transformation are not new concepts. However, today's institutions of higher education are faced with rapidly changing operating environments as well as dramatically changing perceptions among stakeholders about the definition of a quality institution. Moreover, turbulent changes, declining revenues, and concerns about viability within the business community have spilled over into academia. Ever since TQM has gained widespread acceptance as a quality management tool in business and industry, its use has begun to be recognized as a major innovation in higher education administration. One such TQM tool that has gained extensive recognition in the business world is the Malcolm Baldrige National Quality Award, sponsored by U.S. Department of Commerce. In spite of the success of this tool in business and industry, little research exists to support what factors, if any, may prevent colleges and universities from productively adopting and applying this tool to their own management practices. The following chapter examines available literature on quality in higher education, as

well as the Malcolm Baldrige National Quality Award, to provide appropriate context for the current investigation.

CHAPTER II

Literature Review

In this chapter, the following topics are addressed: (a) Perceptions of Quality in Education, (b) The Shaping of Higher Education, (c) Total Quality Management (TQM) and Organizational Change, (d) The Malcolm Baldrige National Quality Award and, and (e) the University of Wisconsin Stout.

Perceptions of Quality in Education

Quality of education is a difficult concept to define. Sight, hearing, touch, smell, and taste—the five senses through which we generally perceive the world around us—only account for a fraction of what we, as humans interpret and understand our environment and its many complex systems. Masin (1993) maintained that perceived things like pain and emotion are non-concrete. Gestalt psychologists divided observation areas into two distinct modes: *judgmental* observations, such as pain and emotion, and *perceptual* observations, such as shadows, light, empty spaces, and so forth. According to Prinz and Bridgeman (1995), there is an important distinction between the two. Consistencies correspond to immediate perceptions (visual world), while the lack of consistencies (visual field) is reported when cognitive or judgmental processes intrude. In the visual field, appearances change as one's senses vary (i.e., no consistency); however, in the visual world there is no variation in one's senses (i.e., consistency). A person is able to experience one or the other or both alternatives at any point in time. Gestalt psychologists believe that the visual world is the direct product of perception, but the visual field represents the intrusion of judgmental operations.

The judgmental operation to which they referred is the point at which a construction of reality begins in an individual. Numerous influences can influence perception: culture, history,

individual, and group experiences of socialization, knowledge or accumulated know how (formal and informal), emotions and feelings. Because perception can be deceiving as multiple influences originate in social and personal life, judgmental operations mediate these influences to create reality.

Reality, then, is a social construct and therefore partially shared by the majority of the individuals comprising a particular social group at a given moment. Reality, according to Montero (2002), is also a product of the dynamic relationships among individuals and their interactions, constructions and interpretations. Thus, with relationships being inherently dynamic in nature, reality continues to evolve over time. There may be multiple realities simultaneously, depending on the level of truth invested on the constructions and relationships produced. The level of truth is the social accord bestowed to any statement accepted at a certain moment by a social group (Montero, 2002). It is also an attribution that may disappear under new circumstances or upon the basis of new knowledge. As a result, words (written or spoken) and actions become a transformative event, leading to the ever-changing perspective of reality. These transforming events play a pivotal role in the definition of quality in higher education. Higher education administrators have a multitude of philosophical and technical considerations to weigh when determining what pedagogical quality actually is and how to measure it.

Quality in Education

Higher education specialists are too often bogged down in deliberating the philosophical and technical complexities inherent in defining and measuring quality. These arguments have had a negative effect on the pursuit of quality, as they have tended to paralyze any quality assurance efforts in higher education. Even though considerable disagreement about quality continues to exist, some elements are accepted. Bogue and Saunders (1992, p. 7), for example,

summarized some widely held assumptions of academic and laypersons concerning collegiate quality:

Only high-cost colleges have quality;

Only large and comprehensive colleges have quality;

Only highly selective colleges have quality;

Only nationally recognized colleges have quality;

Only a few colleges have quality; and

Only colleges with impressive resources have quality.

According to Astin (1982, p. 10), “quality is often regarded as an elusive or ethereal concept in higher education.” No single, formal definition has been postulated that systematically and unequivocally describes what quality in higher education actually is. In fact, Crosby (1979) believed many specialists assumed they knew quality, yet their assumptions were often shown to be incorrect. The notion of quality in higher education could be said to have much in common with sex. Every one is for it. Every one feels they understand it. Every one thinks execution is only a matter of following natural inclinations. And, of course, most individuals feel that any problems in this area are caused by the other person! In a world where half the marriages end in divorce or separation, such assumptions are open to question. And the same is true about assumptions concerning quality in higher education.

If one subscribes to the assumption that quality in academia is based solely on size, cost, and selectivity, one must also believe that didactic quality is in limited supply. Moreover, one could also assume quality is limited to supply. To help clarify this concept, Garvin (1998) illustrated four different approaches to defining quality in the corporate sector, which have been adopted by others and used in education.

1. *Product-based*: Amounts to differences in the quality of some desired ingredient or attribute. In academia, the relative quality of an institution may be judged based on student performance on a nationally standardized exam.
2. *User-based*: Equates with consumer preference; quality becomes a measurement of *fitness for use* (Juran, 1980). Education quality is judged by how much it helped obtain or advance in a job. Users are not limited to students alone, as higher education has many consumers, internal and external. Each has its own *fit for use* view of quality.
3. *Manufacturing-based*: Is closely related to Cosby's *conformance to requirements*, which is concerned with how well the product matches the design requirements. Quality is limited to compliance rather than with the premise, or rationale, for the design or specification. In academia, this could be compared to the accreditation process.
4. *Value-based*: Corresponds to "the degree of excellence at an acceptable price and the control of variability at an acceptable cost" (Mayhew, Ford, & Hubbard, 1990, p. 26).

Astin (1985, pp. 60-61) also defined quality in a way that favored a *talent-development* approach quality in higher education. "Its basic premise is that true excellence lies in the institution's ability to affect its students and faculty favorably to enhance their intellectual and scholarly development, and to make a positive difference in their lives."

Banta (1988) and Miller (1990) adopted a more comprehensive, system-wide view of quality. Banta believed quality should be based on: (1) student performance on specified measures of development, (2) program strengths and weaknesses, and (3) institutional effectiveness. By looking at what the students and graduates know and are able to do with their

knowledge, as well as their perceptions of quality of institutional programs and services, researchers can obtain important information about a program's ability to meet stated objectives for student development. In short, the collective quality of its programs establishes the effectiveness of an institution. As Miller (1990, p. 6) asserted, "institutional quality is a composite of interdependent elements," which includes (1) goals and objectives, (2) students' learning, (3) faculty performance, (4) academic programs, (5) institutional support services, (6) administrative leadership, (7) financial management, (8) governing board, (9) external relations, and (10) institutional self-improvement.

In reviewing the literature, two facts about academic quality seem to have emerged. First, it is not an easy commodity to identify. Second, specialists must make a real commitment to the TQM process in creating a quality culture by defining quality and implementing all the quality principles as an aggregate system that ensures continuous improvement (Sashkin & Kiser, 1993), thereby creating an atmosphere that meets the needs of the stakeholders.

Quality Principles

It is important to have a personal interest in an organization's success to define its mission. In higher educational institutions, interested parties are comprised of faculty, students, administrators, staff and parents—also known as stakeholders. In addition, trustees or regents, alumni, employers, and private and public sector funding agencies augment the list of stakeholders. Because any definition of pedagogical quality is based on their perceptions, stakeholders must be systematically monitored and evaluated when defending an institution's mission and outcomes.

Authorities most often mention nine principles associated with effective quality (Chaffee & Sherr, 1992; Cornesky et al., 1992; Crosby, 1979; Deming, 1986; Juran, 1989; Seymour, 1995).

1. *Are driven by vision, mission and outcome driven:* All organizations, especially social organizations like education, exist for a purpose. Their vision, mission and outcomes are defined by the expectations of all the stakeholders. Without a clearly defined mission an organization lacks a clear sense of direction and focus.
2. *Are system dependent:* Institutional performance is defined as how well procedures and members interact as part of an interdependent system or process. Because changes in one part of an institution affect the other segments, most problems in an organization are the result of the work processes or systems, not the people. For example, a system problem is created when faculty are rewarded for presenting papers at conferences, but cannot to do because travel funds are limited.
3. *Have leaders who create a quality culture:* A different type of leadership is needed to create a quality culture. The leaders of an organization are responsible for systematically bringing the institution's culture into harmony through top-down leadership combined with bottom-up input regarding improvement processes. Leaders are responsible for helping members understand that new ways of thinking and behaving may be necessary to achieve the declared vision, mission and outcomes.
4. *Exhibit systematic individual development:* Because an organization is constantly changing, it is necessary to continually update all its members' knowledge and skills to meet the demands of existing changes and to systematically prepare for future changes. Organizational leaders who do not provide training opportunities to their

- employees may end up with a poorly performing workforce. A lack of training should be perceived as a problem with the system.
5. *Make decisions based on fact:* The basic cause of a problem cannot be clearly understood unless all relevant data are systematically gathered. Three types of data are required before a problem can be understood rationally: (a) data measuring the desired outcomes, (b) data measuring the process, and (c) data intended to develop a contextual understanding. Available data is meaningless unless it is put into some context and has a proven relationship (provides meaning).
 6. *Delegate decision-making:* If individuals are to be held responsible for achieving a stated mission, they must be made aware of how their position and actions relate to the mission, as well as be given the flexibility to make necessary changes to their job tasks. The more individuals sense they can influence a process the more they take ownership.
 7. *Collaborate:* Collaboration and teamwork produce results when individuals who have a stake in the outcome are involved in the decision-making process. Teams divide labor, based on individual strengths, to achieve a common goal. Collaboration results when employees who have a vested interest in an objective work together to achieve mutually satisfying results.
 8. *Plan for change:* A fundamental assumption of the quality principle is that an institution's mission is based on stakeholders' expectations. Because it is assumed that these expectations change constantly, it is therefore reasonable to assume that an organization's mission also constantly changes. Institutions need to embrace change as a cultural value; they need to perceive change as a potentially positive force and

anticipate it. Planning for change is a fundamental component of continuous improvement.

9. *Have leaders who support a quality culture:* Senior management need to support the implementation of the quality principles by ensuring that the necessary systems and resources are available, which will create and nourish a culture of change. Moreover, senior leaders must constantly support those who are making the changes. They must be ready to reinforce, through rewards based on quality principles, the changes necessary to make the voluntary adoption of quality principles both a personal philosophy and an integral part of the organizational values.

These quality principles are interrelated. New systems and processes have the potential to improve quality; better quality is likely to increase pride and confidence, resulting in enhanced attitudes and behaviors. Thus, behavioral changes can positively influence an institutional culture that embraces change as a tool to increase quality.

A general consensus that the quality of the education in the U.S. is deteriorating is evidenced by a number of alarming trends, including grade inflation, irrationality of curriculum, lower standards, reduced faculty-student contact, graduates with inadequate basic skills, widening gaps between industry needs and student capabilities (Fisher, 1993; Schragel, 1993), and “a generally recognized decline in college graduates’ verbal and quantitative literacy” (Mayhew et al., 1990, pp. xx-xvi). Society, as a result, has responded to this decline by demanding higher test scores and greater financial accountability, and by implementing its own educational programs (Shalala, 1993). Mayhew et al. (1990, p. 4) contended that “... the current interest in improving the quality of undergraduate education comes after a 20 year period of general neglect for the integrity of the enterprise.”

Cornesky et al., (1992, p. 7) in *Implementing Total Quality Management in Higher Education*, cite quality-related problems in higher education ranging from “outmoded instructional techniques to teacher education.” These problems, they assert, can be directly attributed to the lack of vision, the lack of insight, and the lack of skill of many administrators who do not have any formal, or even informal, management training:

The trouble with higher education is, by far and large, not with the preparation, ability, and commitment of the professors. Rather, the trouble is more directly attributable to the lack of administrative leadership from school presidents, vice presidents, deans, and to some extent, the chairpersons and governing boards. Major responsibility must be placed first on these administrators, since many have yielded to the pressure of the present rather than making a commitment to quality, while looking toward and preparing for the future. (Cornesky et al., 1992, pp. 7-8)

The Shaping of Higher Education

The evolution of higher education in America can be characterized as responding to a long series of events. The long-range planning that was popular in the 1970s shifted to a model of strategic planning in the mid 1980s. Additionally, the challenges rooted in demographics, economics, changing societal values, and priorities significantly influenced American colleges and universities. More recently, American colleges and universities—as they compete for the best and the brightest students—have begun to investigate and embrace the quality principles that had previously only been associated with business and industry. Thus, the Total Quality Management (TQM) movement in U.S. industry has sparked interest among higher education administrators and faculty (Durlabhi & Fusilier, 1999). Mayhew et al. (1990) identified three challenges associated with the 1960s, 1970s, and 1980s that had a significant impact on higher education.

The first challenge resulted from the soaring birthrate in post-World War II America, resulting in a significant increase in the number students applying for admission to colleges in the early 1960s. In response, state and regional universities emerged, campuses expanded, and residence halls were constructed. Although rapid growth occurred in a period of serious campus unrest, higher education was able to make changes without seriously reducing traditional standards of academic quality.

The second challenge that institutions found themselves facing in the 1970s was serious financial difficulties, as well as the inability to offer programs judged essential to the institutional mission. Some institutions experienced destabilized or declining enrollments and were forced to close or merge with other campuses. Bowen (1980) feared this pattern was an indication of a significant slippage in educational quality. Mayhew et al. (1990, p. 33) agreed: "In general, institutional worry over enrollments and finances was a powerful force causing quality to deteriorate." Leslie and Fretwell (1996, p. 74) concurred:

The financial health of virtually every American College or university depends directly on tuition-paying, appropriation-generating undergraduate students. Giving undergraduates a good value for what they, their parents, and the public invest in higher education is the single most important thing the institutions could have done to get out of "the mess."

The third challenge pertained to the fact that educators felt increasingly threatened as they entered the 1980s. Some pessimists projected enrollment declines, sustained financial difficulties resulting from inflation, and the redirecting of public monies to other social purposes. Optimists, however, expected enrollment increases, with older and foreign students taking the place of traditional students (Mayhew et al., 1990). The sum of these changes created a growing

recognition among higher education specialists that they would have to examine the overall effectiveness of their institutions. Many of these leaders turned to TQM, as it had proven successful in business practices.

At the end of the 1980s and the beginning of the 1990s, the quality movement in higher education was at best a fringe movement. In most institutions there was only a general awareness of quality principles, and that awareness came from outside sources such as books and articles on quality. However, interest in the quality movement exploded in 1991 and 1992, as evidenced by the results of a national survey of TQM on campuses (Freed et al., 1994). In their survey of over 100 institutions, 25 percent of the responding institutions reported that they had already begun implementing TQM principles on or before 1990. Fifty percent reported that they began in 1991 or 1992, and 25 percent reported they began in 1993 and early 1994.

During the mid 1990s, other institutions questioned whether the quality movement was appropriate for education. But just a few years later, administrators were not asking whether the quality movement was appropriate, but rather how to make quality principles relevant and worthwhile to their campuses (American Association for Higher Education [AAHE], 1994). As the movement continued to grow, institutions with persuasive success stories were able to stimulate interest in other institutions (AAHE, 1994).

Research indicates that organizations using quality practices are more successful than those that follow traditional higher education management models. Greater revenue, increased satisfaction among stakeholders, lower costs, higher productivity, and superior services are often outcomes of institutions using quality principles (Melissaratos & Ardet, 1992). Moreover, institutions of higher education have become much more accountable for their use of resources.

As will be shown, a number of colleges specifically employed the Malcolm Baldrige National Quality Award as a framework to improving higher education (Seymour, 1995).

Pressures for Accountability

As a result of both internal and external forces, colleges and universities are under increasing pressure to be accountable for their actions and decisions. Faced with a rapidly changing environment and culture, the management structure in higher education, found that existing outmoded management systems no longer ensures success in an increasingly competitive world (Tuttle, 1994).

The most acute pressure for accountability facing universities and colleges today concerns the reduction in public funding. This reduction, in turn, leads to fewer available dollars for faculty, staff, and adjunct positions, which can ultimately lead to a reduction in staff or an increase in teaching loads for faculty. Fewer dollars also means difficulty in recruiting outstanding new faculty, especially at public institutions, as well as retaining existing faculty when more lucrative employment opportunities beckon elsewhere. In essence, universities and colleges are being forced to do more for less.

Competition for students is another form of pressure that higher education institutions are facing, and this competition can result in both short-term and long-term economic effects. The short-term effects include an immediate loss of tuition and associated revenue. Tuttle (1994) reported, for example, that one major state university was under-enrolled by approximately 1,500 students in 1993 and suffered a resulting loss of approximately \$5 million in revenue. The long-term economic effect of having to compete for students is that if institutions do not attract the best individuals who will succeed as graduates, they will lose good student referrals and ultimately face lower alumni financial support.

Public funding and student recruitment are only two of the pressures with which colleges and universities must grapple. An increasing need for statistical measures of success has also impacted higher education. Reflecting this need-to-know trend, the National Governors' Association Task Force on College Quality maintained that "The public has a right to know what it is getting for its expenditure of tax resources; the public has a right to know and understand the quality of undergraduate education that young people receive from publicly funded colleges and universities..." (Ashcroft, 1986, p. 154). A publication from The National Alliance of Business (1990, p. 20), *Business Strategies That Work: A Planning Guild for Education Restructuring*, echoed this same sentiment. "Just as partnerships seek to improve accountability in the education system, reform initiatives themselves must operate with appropriate means of accountability. Ongoing monitoring of progress against plan, periodic assessment of progress toward goals, and documentation of overall accomplishments are essential ingredients." Bogue and Saunders (1992, p. 5) summarized that "in recent years...higher education—parts of the service industry—has faced an increasingly vocal 'show me' attitude from their overseers and constituents," which has driven the leaders of higher education into planning for continuous improvement.

Continuous Improvement

Although American higher education has generally been responsive to changing demographics and shifting social agendas, a new challenge has emerged: How can institutions of higher education become *leaner and meaner* as painlessly as possible? One source of relief can be Total Quality Management (TQM) programs (Michael, Sower, & Motwani, 1997). In *Ten Years After a Nation at Risk*, Lund and Wild (1993, p. 18) quoted Adam Urbanski, president of the Rochester New York Teachers Association, as he summarized a decade of achievements

associated with the application of sound management principles as the “sharing of learning experiences about effective management, TQM, shared decision making, and employee involvement.” It would appear, then, that TQM is a viable tool for continuous quality improvement and assessment in the higher education arena.

Traditional Assessment Approaches to Quality in Higher Education

Assessment is closely allied with quality in higher education. The beginning of the assessment movement in higher education can be traced to the publication of two national reports: *Involvement in Learning* (National Institute of Education, 1984) and *Integrity in the College Curriculum* (Association of American Colleges, 1985). While calling for major changes in the content and coherence of American college curricula (Freed et al., 1994), these reports also called for a new look at the breadth of knowledge, skills, and attitudes that all graduates should possess (Ewell, 1991).

External pressure for assessment resulted from the general dissatisfaction voiced by business and industry about the declining quality of college graduates. In 1986, the government began promoting assessment as a means to make institutions accountable to the public. In addition, published reports by the Education Commission of States, the National Governors Association, and other blue ribbon panels also voiced the belief that institutions of higher education should be held accountable for their practices.

When measuring and rewarding quality, some institutions have taken traditional approaches, while others have embraced more comprehensive and innovative approaches. Astin (1982) mentions four traditional approaches to measuring quality:

1. The use of resource measures that “typically equate quality with an institution’s educational resources: highly trained and prestigious faculty members, affluence, and bright students” (p. 10)
2. Reputational studies that draw upon the opinions of faculty at peer institutions. An example of this type of measurement is the *U.S. and World News Report’s* yearly evaluation of “America’s Best Colleges.”
3. Outcome assessment tools that measure (a) the proportions of students going on for doctorates and (b) lifetime earnings of alumni. Proponents argue that the ultimate test of an institution’s quality is in the quality of its *products*.
4. Value added measure, a variation of outcome assessment, which argues that true quality resides in an institution’s ability to positively influence students in their intellectual and personal development.

Other conventional approaches for assessing quality include accreditation reviews, competitive awards and grants received, number of students, amount of space, faculty credentials, and externally validated reputation of programs and colleges. Bogue and Saunders (1992) include licensure, ratings and rankings, and follow-up studies. Federal and state organizations, as well as six regional accrediting bodies that blanket the nation, also monitor quality as an evaluative tool. According to Boyer (1987), more than 154 professional accrediting bodies examine specialized programs on campuses, ranging from agricultural to nursing education. Due to the sheer number and variety of accreditation service available, several of the more common forms deserve further explanation.

Accreditation and Detractors to Accreditation

The need for some type of accreditation process first arose because of problems associated with institutional definitions, vast differences in institutional quality with no widely accepted basis for ascertaining quality, and difficulties encountered by students and institutions in the transfer of credits (Young, Chambers, Kells, & Associates, 1983). Miller, in his 1985 publication, *The Assessment of College Performance*, states that accrediting associations have been urged to serve as reliable authorities on the quality of education and/or training, as well as of institutions and programs.

Accreditation was initiated as a way to achieve reasonable standardization in higher education, thus serving the public by helping to define institutional missions, promote articulation among them, and assist the general public in recognizing and appreciating quality (Seymor, 1992). As Chernay (1990, p. 1) believed, accreditation is “ a system for recognizing educational institutions and professional programs affiliated with those institutions for a level of performance, integrity, and quality which entitles them to the confidence of the educational community and the public they serve.” However, with the public’s attention focused on quality, concerns have been raised about what these accrediting boards are measuring.

Accreditation and assessment in universities mainly focuses on the *inputs* and *outputs* of the system (Lewis, & Smith, 1994). Seymour (1992) listed four primary criticisms of the accreditation process that, if ignored, could erode its value as a quality assurance tool. His criticisms can be summarized as follows:

1. Accreditation is little more than professional back scratching;
2. Accreditation standards continue to stress numbers, procedures, and processes at the neglect of student achievement and goal attainment;

3. Too much emphasis is placed on salaries, teaching loads, support services, and employee benefits, and too little on indicators and determinants of quality;
4. It is questionable whether a review every five or ten years constitutes sufficient pressure for a college or university to maintain or enhance its quality.

In an attempt to further refine the concepts of accreditation and assessment, Green (1993) expressed the need to explore alternative ways of integrating more of a customer focus into the accrediting process.

Ranking and Ratings

College rankings and ratings have been published since 1911, but the *U.S. News and World Report* evaluations of collegiate excellence have become the nation's most widely known quality reports. Stevens and McGuire (1998, p. 365) concludes " given a universe of unsatisfactory output concepts, reputation, with all its flaws, is probably as good or better because it is broader and more representative of the range of important output components that are produced."

Licensure

Young et al. (1983, pp. 457-458) defined licensure as "a process by which an agency of government grants permission (1) to persons meeting predetermined qualifications to engage in a given occupation and or use a particular title; and (2) to institutions to perform a specified function" Institutions of higher education use licensure as a quality assurance testament. The public interest is served by assuring that a licensee has met all the necessary requirements, which are believed to be essential for effective performance in a particular field. The public rightfully expects institutions to ensure that graduates can perform with some level of expertise, which is a goal better regulated through licensure.

Partnerships with State Governments

Ewell (1991, p. 1) offered the following perspective on state-level initiatives in assessment and performance accountability. “Today, the majority of assessment activities occurring at American colleges and universities is due to the state initiatives.” Effective campus-state partnerships can be built with a shared vision of quality for the state’s system of higher education. Bogue and Saunders (1992) noted two emerging trends while examining state-level involvement in areas of quality assurance and enhancements. The first trend is the continuing tension of identifying appropriate minimal performance standards while promoting diversity to the institutional mission. The second trend is concerned with the divergent goals of quality assurance and enhancement efforts. Some state policies focus heavily on the improvement or enhancement of goals, while others focus on accountability or assurance of goals. Both of assessment tools, however, rely on the involvement of peer review teams, such as accreditation panels, to review programs or departments. Thus, peer involvement continues to be the principal instrument of quality assurance, as expressed in accreditation, reputation studies, and academic program review. More state governments are taking an active role in collaborating with colleges and universities to develop quality assurance and enhancement programs.

There is indeed a tendency for states to intrude and, in fact, for the universities to cause or invite that intrusion. What becomes clear is that the real need is... for a relationship between the university and the state that is constructive for both. (Newman, 1987, p. xiii)

Quality has become a universal criterion in a competitive environment. This invokes questions of purpose and principle, as well as meaning and value to which colleges and universities must respond. If the definitive measuring stick by which higher education evaluates

itself is no longer adequate, a new paradigm for assessing quality in higher education may be needed.

A New Quality Paradigm for Higher Education

Most higher education specialists would be reluctant to admit that they are content with the status quo, as it is far more acceptable to be striving for excellence. As educators constantly seek ways to improve their institutions, new and better approaches to problem solving are needed. Miller (1990) and DeCosmo, Parker, and Heverly (1991) contended that higher education is in need of an improved problem-solving paradigm because of the challenges it faced in the 1990s. Conserving resources, improving institutional effectiveness, implementing quality measures, and dealing with changing demographics represent just a few of these challenges. Some leaders in higher education have become crisis management experts through repeatedly having to respond to the most pressing problem at hand. However, simple short-term solutions cannot be used remedy problems that require long-term solutions to truly resolve.

The challenges noted above have also become important to many constituencies outside of academic, such as governing boards, business groups, political leaders, and the public (Mingle, 2000; Miller, 1990). This unprecedented spotlight on the effectiveness of our institutions of higher education has facilitated strong state legislative fiscal support for the reform movement.

The folklore of “this is how we do things around here” cannot begin to handle the demands placed on institutions of higher education in a new global economy. We are kidding ourselves if we believe that educating people for the year 2000 is essentially the same as educating them for the year 1975. Everything has changed, technology, lifestyles, and culture. Our educational institutions must change as well. Not by cosmetic

retouching, one shot consultants, or slick marketing, but by challenging the basic assumptions of higher education administration. (Seymour, 1992, p. viii)

As previously noted, quality has become a universal criterion in a competitive environment for higher education. Freigenbaum (1994) believed that “quality of education” is a key factor in “invisible” competition between countries since the quality of products and services is determined by the way that “managers, teachers, workers, engineers, and economists think, act and make decisions about quality.” Education, and in particular higher education, is being driven towards commercial competition imposed by economic forces (Seymour, 1992). As such, many institutions of higher education have turned to Total Quality Management to help make the most of their available resources.

Total Quality Management (TQM) and Organizational Change

What is Total Quality Management? An extensive review of the relevant literature provides several definitions. To Sashkin and Kiser (1993, p.25), “TQM means that the organization is defined by and supports the constant attainment of customer satisfaction through an integrated system of tools, techniques, and training... it involves the continuous improvement of organizational processes, resulting in high quality products and services.” As Milkovich (1991, p. 196) asserted, “TQM is a organizational transformation strategy and a method of process improvement that achieves quality and productivity without additional resources.” To sum up, TQM is designed to provide a single, understandable and workable methodology to apprise organizational leaders of their greatest opportunities. Cound (1992) predicted that TQM would be the catalyst for ushering in the next paradigm of management, while Deming (1986) referred to TQM as “The Third Industrial Revolution.” As Hart and Bogan (1992, p. 272) stressed, “TQM represents the latest phase in evolution of the quality discipline.” They believe

that TQM offered distinctive features that are strong and pervasive, such as customer orientation and a view toward managing quality for competitive advantage.

The power of TQM lies in its continuous improvement principles, which lead to competitive advantages. According to Covey (1989), principles of TQM are guidelines for human conduct that are proven to have enduring, permanent values. The process of implementing quality principles in any organization involves continuously measuring and improving these principles with a constant eye on the need for change.

Total Quality Management provides a connection between outcomes and the process by which outcomes are achieved. If, as many people hypothesize, failure in education results from problems in design, quality management may be regarded as an ideal systemic process for managing change in public education (Frazier, 1997).

There has been some reluctance to apply quality practices to education. However, Deming's methods and management philosophy stresses that anything can be made or done better. Americans have steadfastly believed that education can help an individual to avoid poverty and to some degree social unrest. However, a subtle pessimistic attitude persists that people are doing the best they can with what they have. The message appears to be that education can only be successful with certain students. Deming (1992, p. 134) wrote that with its "under-use, misuse, and abuse of skill and knowledge...the United States may be the most underdeveloped nation in the world." Improvement with all levels of students must be viewed as not only possible, but also essential.

Cartin (1993) asserted that "total" is an appropriate term because the management process involves everyone in the organization, as well as every function and activity. With total involvement, every activity is recognized as either contributing to or detracting from quality and

productivity. Moreover, the people who are involved in those activities (processes) are in the best situation to know what needs improvement. Quality is the dimension by which the value of the method is measured, and it focuses on improving all the functions, systems, and processes. Tuttle (1994, p. 22) asserted that the TQM process includes not only the elimination of undesirable output, but also the improvement of acceptable products and services, thus resulting in customer satisfaction or delight. Management in this context is not administrative personnel directing or controlling the work of others. Rather, it is the actions involved in applying TQM principles and techniques to all activities. It can be said that TQM's sum is greater than its individual parts, and can be seen as a scientific management method that relies on older, proven management principles and methods as well as new ones. As an example, one established method states that employees want to do high quality work. Statistical process control (SPC) is an important tool in aiding in the achievement of quality. The new principles associated with this method are related to continuous process improvement and internal/external customer satisfaction.

The Foundations of TQM

Several major elements provide the foundation for TQM. These major elements are: (1) continuous improvement, (2) processes and systems, (3) customer focus, (4) management by fact, and (5) respect for people.

Continuous Improvement

Continuous improvement is both a commitment and a process. The Japanese word for this concept is "Kaizen," and Japan's success in the world market is often attributed to this model. Continuous improvement depends on two elements: learning the appropriate process, tools and skills, and practicing these skills on achievable projects. The process for continuous

improvement as first advanced by Shewart and implemented by Deming, is *Plan, Do, Check, and Act* (PDCA), a never-ending process of improvement that occurs at all phases of the organization. While no rigid rules are required to carry out this process, the general framework of each step can be described as follows. The first step, *Plan*, asks such key questions as what changes are needed, what are the needed results, what obstacles need to be overcome, what data are available, and what new information is needed? *Do* implements a small-scale change or pilot test to provide the data needed to obtain answers. *Check* assesses and measures the effects of change or test. *Act*, the final step, analyzes these results, and makes a determination whether or not to implement the change. This process continues, expanding knowledge and improvements.

Processes and Systems

Processes and systems includes the combination of tasks and steps necessary to accomplish a given result and refer to the arrangement of persons, places, things, and/or circumstances that make, facilitate, or permit things to happen. It should be noted that one of Deming's key observations maintains that the organized activities in the work place be at least 85 percent controlled by management and 15 percent controlled by workers.

Customer Focus

Customer focus involves two basic questions: *What is our mission?* and *Who are our customers?* With TQM, quality is defined by what the customer says it is. Therefore, the objective is to provide goods and/or services that meet or exceed customer expectations. According to Marchese (1993), customer focus forces organizations to be specific about the parties they serve. Who are the customers? Customers are the users of the goods and or services produced by an organization. Those users are both external and internal to the organization.

Management by Fact

Management by fact is based on intuition, influence, hunches, or organizational politics and requires two specific actions. The first involves the collection of applicable data so that information is valid. Second, management plans should be developed according to this valid information, not according to instinct, preconceptions, or other factors. There is a variety of ways, or tools, designed to gather and analyze data and make decisions based on facts. Seven basic, highly effective tools are commonly used in the total quality control movement: (1) fishbone or cause and effect diagram, (2) control chart or run chart, (3) Pareto diagram, (4) flow-charting, (5) brainstorming, (6) nominal group technique, and (7) affinity-diagram.

Respect for People

Respect for people is an important area for Deming. In fact, it becomes the basis for his 14- point system, which will be described shortly. In sum, he maintained that every employee must be fully developed and involved for an organization to be successful. The result will be an empowered individual—a value added resource—with loyalty to the program, the team, and the entire organization. Respect for people also boils down to such simple concepts as (a) creating a sense of purpose in the workplace so that people are motivated to do their best, (b) keeping people informed and involved, (c) showing employees how they are a part of the bigger picture, (d) educating and developing people so that each individual is the best that he or she can be at what he or she does, (e) helping people communicate well so that they can perform their jobs with peak effectiveness, and (f) delegating responsibility and authority so that people are not just doing what they are told, but rather are taking the initiative to work more innovatively.

Marchese (1993) suggested that an organization seeking improvement sees people as its greatest resource. It does everything possible to give every employee the preparation, tools, and

initiative to contribute to company goals. In this employee-driven system, training, teamwork, responsibility, and mutual accountability are critical for success; for senior personnel, it is vital that they provide vision and strategy, and be able to coach, mentor, and be a team player. To gain a better understanding of TQM and its potential for use in higher education, one must look at the origins of this system of quality practice.

Origins of TQM and Taylor's Influence

Fredrick Taylor is widely credited with being the father of "Scientific Management" (Bradley, 1993), or more simply, finding the best way to do the job. Taylor was deeply interested in productivity and believed that when productivity was maximized, a company's costs could be minimized, and thus the worker could be rewarded more generously. Consequently, his work has often been interpreted as comparing people to instruments or machines to be manipulated by their leaders (Hersy & Blanchard, 1982). He believed that the major responsibility of management was to find the best possible way to do a job and then train the workers to perform the tasks.

The Taylor philosophy of management places people at the end of the pipeline, where they are subject to an operating system over which they have no control. This model then holds them accountable for the end product of a system over which they have had no input with regard to its optimum functioning. This system is generally regarded as bureaucratic, authoritarian, centrally planned, rigid, and inflexible. The influence of Taylor's theory on other researchers such as Charles Deming, Joseph Juran, and David Crosby has given rise to new management rules that have their roots in Taylor's Scientific Theory.

Deming's Contribution and His 14 Point Management Approach

W. Edward Deming is widely credited with initiating the quality movement in Japan's industrial sector in the aftermath of World War II (Carr & Littman, 1991; Gabor, 1990; Pines, 1990). In fact, his teaching and consultation with Japanese business and industry are generally regarded as the primary reason for Japan's post-war economic resurgence. Following the war, Deming transformed his theories into a 14- point management approach (Deming, 1986, 1989), which has been expanded upon by other quality theorists, most notably Crosby (1979, 1984), Juran (1980, 1988, 1989), and Feigenbaum (1983). In his management approach, Deming provided supportive direction for the transformation of American management practices. Although the points are distinct and could be selectively implemented, Deming strongly believed that his recommendations needed to be applied synergistically to bring about genuine organizational transformation. Deming's 14 points or "rules" for management were created for industrial use and thus do not translate seamlessly into the education setting. Successful academic practitioners have taken the best from the industrial experience and combine it with the best learning methods to create explanations of how these points can be applied to higher education:

1. Create a Consistency of Purpose for the Improvement of Products and Services

Deming's first is relevant to post-secondary education in terms of its emphasis on innovation, product improvement, need for administrative leadership, commitment of energy and resources, and hiring and/or training of faculty who that are convinced that change can be a positive force.

According to Dye (1991), concerns about college curricula are very likely to increase as efforts to cope with the financial constraints and uncertain enrollment result in a reexamination

of mission statements and accountability of programs and courses. The challenge to post-secondary education is to develop curricula that will carry the institution effectively and efficiently into the future.

2. Adopt the New Philosophy

The philosophy advocated by Deming in his second point is rooted in issues of quality. To incorporate quality into higher education, leaders of all levels should not only be willing to make a long-term commitment to the philosophy, but more concretely to educate and train the workforce, develop accurate and responsive quality information systems, and establish goals for quality improvement at all levels (Fain, 1991). Demonstrating interest and commitment at the very highest levels of management, however, is the number one requisite for this point.

3. Cease Dependence on Mass Inspection

Deming's third point consists of two components: the elimination of mass inspection and achievement of high quality. This third point is applicable to higher education in the terms of its emphasis on systematic changes, the common problems associated with mass inspection, and assessment procedures utilized within system improvements methods. The limitations of this point concern the nature of higher education and the relationship between post-secondary institutions and legislative and governing bodies.

According to Heady (1991), higher education leaders could consider applying one or both of the following initiatives that directly relate to Deming's third point:

- (a) Apply evaluation assessment practices to determine if the practices are comprehensive in scope. These practices should be geared toward institutional improvements and should be of sufficient validity and reliability to gather information that will be useful in improvement initiatives.

(b) Given the reality of increasing outside evaluations in higher education, it is necessary to coordinate these assessment practices with the institution's overall assessment program, so that whole can be greater than the sum of the parts.

4. End the Practice of Awarding Business on the Basis of Price Tag Alone

Deming's fourth point can also be significant to higher education, despite some obvious limitations such as varying degrees of management control, external government regulation, as well as the decentralized nature of the overall system. In considering the subject of an educational price tag, Hogan (1991) suggested that higher education should act and plan based on true long-term costs rather than according to perceived short-term costs. He also advised that higher education develop an "arm around" relationship with secondary schools in response to Deming's suggestion "to make a partner of every vendor, and to work together with them on a long term relationship of loyalty and trust" (Deming, 1986, p. 43). Implementing this point could improve the quality of students if higher education if direct and meaningful contact with secondary school systems is pursued.

5. Improve Constantly the System of Production and Service

Deming has shown how continuous improvement can benefit industry, and this can also be applied to higher education with similar benefits to students, faculty, and administrators. For example, a careful examination of existing programs might lead to the discovery of factors that in the past have hindered acceptance of qualified students. If a student does not have sufficient funds to pay for tuition and related expenses, the university or college could develop a collaborative arrangement with potential employers, such as local manufacturers, in which students could gain experience in exchange for tuition credit.

Because of the considerable autonomy that faculty have in higher education and the difficulties involved in defining and measuring their *products*, Hughes (1991) suggested ways that Deming's fifth point could be adapted to higher education. Hughes recommended that faculty be included in all aspects of the contemplated change, and similar to the industrial model, the expected results from the proposed change need to be well defined so that they can be measured in valid ways. Hughes (1991) also stressed that when measuring the planned change, it is important to determine whether the combination of the methods leads to changes or whether the changes are related to some extraneous factors.

6. Institute Training

Deming's sixth point emphasizes the importance of on-the-job training rather than expecting employees to learn their jobs from their co-workers or from printed instructions, which may be difficult to read and understand. This point is highly applicable to higher education as a method that will enhance the quality and productivity of faculty, administrators, and support staff. In some ways higher education is ahead of Deming on this point in that some excellent programs, such as the Faculty Development Institute at Virginia Tech, are in place. However, Hunt (1991) suggested that these programs are not great in quantity and that many such programs are afterthoughts rather than carefully planned experiences.

7. Institute Leadership

Green (1988) maintained that each educational institution is different in that it is constantly changing. As a result, higher education administrators need to modify their leadership styles to fit their environment, as well as concern themselves with enabling all academic and non-academic personnel to succeed. These leaders should also meaningfully involve co-workers in both institutional planning and decision-making (shared governance). Hollander (1987) wrote

that a democratic society generally regards leadership as a participatory process. As such, workers expect to be more involved in the institutional decision-making process. In order for effective campus leadership to evolve and flourish, a clear vision of what the institution is and what it should be needs to be in place. As Hewburgh (1988, p. 6) contended, “It is not enough to have a vision of sorts, somewhat muddled. The leader must know clearly what he or she wants to achieve and... have the ability to articulate the vision in equally clear words and images.” The value of Point Seven to higher education is not a formula as much as it is a philosophy that can guide leaders in establishing priorities.

8. Drive Fear Out

Deming’s eighth point addresses the need for management to try to eliminate supervisory methods and/or situations that threaten the security and comfort of the employees in the workplace. The existence of unhealthy fear in the work setting—whether it is in academia or industry—can result in poor morale, low productivity, stifled creativity, reluctant risks taking, ineffective communication, and a disinclination to work for the best interest of the organization. In a higher education setting, unhealthy fear may deprive students of quality education opportunities. For example, faculty who feel pressure to conduct research and establish a record of publications for promotion and tenure could cause them to overlook needs of the students (Smith, 1991). A fine balance between research and teaching must be obtained (Boyer, 1987). Administrators should also focus on creating an environment where employees are free from blame for any problems in the system, thus creating a more positive and productive environment.

9. Break Down Barriers Between Departments

Breaking down departmental barriers has a direct impact on higher education. Unfortunately, the tradition of academic freedom, competitiveness of individual departments for

funds and students, as well as the fundamental individualism of the faculty can all be obstacles to breaking down barriers. With departments focusing their attention and energies on their own problems and issues, promoting increased interaction and shared goals is not easy. Brinbaum (1988) described one problem in his discussion of *cosmopolitan* versus *local* faculty members. The cosmopolitan type faculty member chooses involvement in the broader dimensions of the discipline through commitment to national/international activities and association, whereas the local type focuses on the issues directly related to his or her immediate campus. However, May (1991) believed that to overcome these obstacles and to cultivate an environment of cooperation and teamwork in higher education, strong support and sponsorship would be needed from institutional leadership.

Educational teamwork can be promoted in a number of ways: First, management should make teamwork a stated goal of the institution. This could be as simple as cross-departmental team teaching of classes with similar curriculum content and objectives. A second avenue of teamwork within academia could be job rotation (where applicable), along with the development of liaison programs with different units on campus and satellite campuses. The outcome of these teamwork and communication efforts should be directed at providing students with better educational experiences.

10. Eliminate Slogans, Exhortations and Targets for the Workforce

The raw materials in higher education are the students and their didactic backgrounds. Not unlike industry, colleges and universities also compete for their profession's raw materials through the use of slogan-like advertising that establish an image of the institution. According to Meiners (1991), slogans can help create a positive image. Moreover, they can positively affect

marketing efforts and help create a cohesive environment within the organization that promotes team building, a sense of belonging, and an awareness of purpose and direction.

11. Eliminate Numerical Quotas

One of Deming's most important recommendations concerns the elimination of numerical quotas and, in their place, the creation of an improved system that promotes a more positive working environment. The quota system, because it relies on numerical indicators of success, is an easy one to implement. Enrollment management is one area in which quotas exist in higher education. In the interest of increasing student enrollment and therefore positive outcome measurements, admissions officers are often required to meet a set number of contact hours per day. Deming's approach opposes this requirement because it requires that workers concentrate more on reaching their quotas than on recruiting the best qualified students or giving the quality of assistance needed to each prospective enrollee (Midkiff, 1991). To evaluate performance of admissions officers solely on the basis of the number of students enrolled would not consider efforts they expended, not to mention any mitigating circumstances that are beyond the control of the recruiters.

Instead, admissions officers should be evaluated on adherence to a carefully constructed admissions process (Harris, Hillenbayer, and Foran, 1989). One such example is the Drake Business School, which previously sought to fill numerical quotas rather than recruit students who were most likely to successfully matriculate. This practice had disastrous results by enrolling under-qualified students, some of who dropped out before classes even began! To increase the productivity of their admissions representatives, Drake decided to evaluate how well they performed the process rather than whether they reached a number. This method resulted in increased productivity by selecting students who were likely to succeed. By eliminating the

emphasis on quotas and improving the system of recruiting students, the school also created a more positive admissions atmosphere. Thus, Deming's major premises of eliminating quotas appears to be justified in both the higher education and corporate settings since quotas have been shown to deleterious to morale and productivity in both work environments (Bradley, 1993).

12. Remove Barriers that Rob People of Pride of Workmanship

Experts have suggested several ways that this point could be implemented in the higher education setting, one of which is the elimination of annual performance appraisals or the merit system for promoting faculty and staff. Modic (1988, p. 89) quoted Deming as saying that "the appraisal of people is a destroyer of people and that ratings place the focus on the individual, where 85% of the problem is attributable to the system rather than to individual." However, Shonebarger (1991) argued that eliminating the evaluation process in higher education could be considered a step backwards. Most post-secondary institutions have worked diligently to develop policies and procedures for evaluating faculty and staff performance. Shonebarger, however, continued to maintain that there is inadequate evidence that Deming's suggestion of eliminating annual employee performance ratings would be effective in a higher education setting, or result in improved performance. However, according to Harris et al. (1989), there are other methods for incorporating Deming's methods into the management of higher education.

One way to incorporate this point is by developing *quality circles* within higher education, which can remove the barriers to pride of workmanship. The problems perceived by faculty, staff and students could be reviewed and analyzed by using the quality circle system. Deming (1986), however, does not advocate the use of quality circles for removing barriers because this method (along with the use of employee participation groups) is sometimes used as a smoke screen to mask true problems. For quality circles to be successful, a number of

components need to be in place: (a) members should not feel pressured to participate, (b) labor should be under no compulsion to reach any particular conclusion, (c) all members should believe that their results will be openly received by the administration.

13. Institute Vigorous Programs of Education and Training

“What an organization needs is not just good people; it needs people that are improving with education” (Deming, 1986, p. 86). Simply put, everyone in an organization has the responsibility to improve the system, they need to be lifelong learners (with an average of five position changes), and they need to routinely upgrade their job skills. Remaining employed and employable in this age of dynamic scientific and technological advancements has only enhanced the importance of this point.

The need for upgrading one’s knowledge and position skills is extremely important in higher education, where the professional development of administrators, faculty, and staff/support staff are generally considered vital. Colleges and universities are labor-intensive organizations that need to provide optimal education opportunities to attract, retain, train and educate their administrative, faculty, and staff/support staff employees. A strong faculty and staff development program can enhance this process by having clearly elucidated entry-level competencies, as well as ongoing faculty and staff development opportunities to help enhance those competencies.

Faculty members need to become more involved in their own development efforts. Ryder and Perabo (1985) wrote that the individual faculty members should initiate their own developmental processes; that is, the desire for change, growth, and development must come naturally from within. They can acknowledge the need for renewal, learn about the needs of their institution, and then help to design and support development efforts.

Management development is a major focus for industry and business, government, and nonprofit sectors. Goddard (1989) wrote that human resources are achieving parity with other forms of corporate planning, and that *people* are becoming the fundamental factor in corporate vitality and competitiveness. This rational is no less true for higher education administrators who need to be significantly and visibly committed to, and involved in, learning and renewal efforts.

14. Take Action to Accomplish the Transformation

Deming sees his 14th point as the culmination of the other 13 points: “Management will have to organize itself as a team to advance the thirteen other points” (Walton, 1986, p. 86). Deming focuses on the role of top management for achieving this point. Without their initiative and continued support, the transformation cannot occur. It is the system—not the workers—that is in error, and only senior executives can change the system.

At first glance, Point 14 might appear to be a recommendation that is only applicable to the business world, as it might seem difficult to apply Deming’s Management Method into higher education. This hesitancy, however, is unjustified. The University of Wisconsin Stout is using quality models, Stake Holder (customer) satisfaction reports, and process flow charts to determine the best ways to accomplish its mission. The commitment to top management involvement and the use of statistical methods for continuous improvement is proof that Deming’s model can successfully be applied to higher education (Zemsky & Stine, 1989). Feigenbaum (1951) took Deming’s philosophy on quality and expanded on it.

Feigenbaum’s Total Quality Control

Feigenbaum asserted that central to this way of doing things is the recognition that, without quality, customers (whether industrial or consumer based) are simply not going to buy from the company. The term “total quality control” and “total quality management” can be

attributed to Feigenbaum (1983, p. 823), who defined total quality control as “an effective system for integrating quality development, quality maintenance, and quality improvement efforts of various groups in an organization so as to enable marketing, engineering, production, and service at the economical levels...allowing for fuller customer satisfaction.” He also explains each of the words in his definition, as follows.

Total refers to the systematic approach for achieving excellence. Total involvement recognizes that every activity contributes or detracts from quality and productivity. *Quality* refers to the best, based on customer requirements. These requirements are the “(a) actual use and (b) selling price of the product” (Feugenbaum, 1983, p. 823). *Control* is defined as a management tool with four steps (a) setting the quality standards, (b) inspecting for conformance to these standards, (c) acting when the standards are exceeded, and (d) planning for improvements in the standards. Feugenbaum’s definitions about quality and quality improvement resemble those of Juran.

Juran and Quality Improvement

According to Rosander (1989) and Rinehart (1993), Juran was the first to address the broader management issues of quality, and this emphasis distinguished him from those who advocated the use of specific techniques. Juran (1988) believed that the job of upper management was to guide a company through three major breaks with tradition, sometimes referred to as the quality trilogy: quality improvement, quality control, and quality planning. Their emphasis included (a) annual improvement in quality; (b) “hands - on” leadership by upper management to establish new policies, goals, plans, organizational measures, and controls throughout the company; and (c) massive training in quality for the entire management team, not just the quality department (Bryce, 1991).

Juran's assertions about quality improvements are similar to those of Deming, but Juran placed greater emphasis on customer focus and the use of data collection and analysis. Juran felt that quality improvements were better approached on a project basis rather than an overall organizational basis (Schwartz, 1990).

Crosby's Fourteen Points

As Crosby (1984, p. 97) maintained, "Nothing happens unless somebody actively does something...quality improvement requires that action be taken to actually change the culture and management style of the company." He identified fourteen action items that have become linked with his philosophy, and also provided administrators with an approach for implementing them.

1. *Management Commitment*: Senior leaders need to be personally committed to TQM and be able to clearly articulate the organization's quality-related policies.
2. *Quality Improvement Team*: This team includes representatives from each department. Its purpose is to provide overall guidance to the TQM effort.
3. *Measurement*: It determines where current and potential quality problems lie as well as appropriate measurement for the quality of each job.
4. *Cost of Quality*: Doing things right the first time--followed by explaining its use as a management tool.
5. *Quality Awareness*: Everyone throughout the organization needs to understand the nature of quality, management's commitment to quality, and his or her own role in quality assurance.
6. *Corrective Action*: This involves taking three steps: identifying the problem, analyzing the root causes, and taking systematic corrective action.

7. *Zero Defects Planning*: An ad hoc committee should be formed to establish a zero defect program.
8. *Employee Education*: All employees need a planned educational program that describes the role of quality improvement within their organization.
9. *Zero Defects Day*: Zero Defects Day is held relatively soon after the initiation of TQM; the celebration usually features a speech by someone who can communicate the importance of quality.
10. *Goal Setting*: All employees are encouraged to establish improvement goals for themselves and other groups.
11. *Error-Cause Removal*: Through total employee involvement, obstacles to obtaining quality goals are communicated to management.
12. *Recognition*: Recognition programs are held to show appreciation to employees participating in quality improvement efforts.
13. *Quality Council*: Council members meet in teams to learn from each other and communicate regularly regarding quality initiatives
14. *Do It Over Again*: This ongoing action plan for quality improvement is driven by quality improvement teams whose membership changes continually.

Crosby's comprehensive list sparked many researchers to expand on one or more of his key philosophical contributions.

TQM Models Resulting from Theory

Dozens of acronyms, including the widely used TQM, have been employed to describe the principles that have evolved from the works of these prominent quality theorists. Cornesky et

al. (1992) suggested an additional seven quality elements that expand on the work of Deming, Crosby, Juran and Feugenbaum.

1. *Process and Systems*: Most quality leaders stress the importance of improving the processes and systems in which employees work in order to continually improve the quality of their goods and services. The combined tasks or steps required to accomplish a given result are defined as a *process*. A series of related processes is referred to as a *system*. Thus, if management is considered to be in control of processes and systems, poor quality lies in poor management and failure to emphasize improvement of process.
2. *Teaming*: Although a certain level of hierarchy is needed in an organization, the complexity of quality improvement efforts requires more of a team or cross-functioning approach that extends beyond organizational boundaries or departments.
3. *Customers and Suppliers*: Organizations are typically composed of a complex web of relationships, wherein any given person or unit is both a supplier and a customer. The customer/supplier philosophy focuses on each unit of the organization in its role as a user of processes and systems to supply service to other units within the organization. An understanding of the customer/supplier relationship is crucial to the development of teamwork and quality improvement.
4. *Quality By Fact, Process, and Perception*: Quality leaders examine quality from the perspective “(a) of fact—does the product or service meet the specifications?; (b) of process—does the process and/or system produce the product or service as intended?; and (c) by perception—are customer expectations met?” Cornesky et al., (1992, p.71).

5. *Management By Fact*: Responsible decision-making should be based on complete and comprehensive data, not on intuition or hunches. The free flow of information creates an atmosphere of trust and is more conducive to effective planning and high morale.
6. *Complexity*: The complexity of processes and systems that produce products and services needs to be understood. Typically there are four common types of system problems: mistakes/defects, breakdowns/delays, inefficiencies, and variations.
7. *Variation*: Every process has variations. The two types of variation are *special cause*, i.e., the kind that causes large, sporadic variations that are unusual, and *common cause*, or the result of many small variations in any system.

Schmit and Finnigan (1992) listed eight common principles, based on the work of Deming, Crosby, Juran and Feigenbaum, which they believed would be applicable to both public and private organizations, as well as to service and manufacturing industries.

1. *Customer Satisfaction*: An important part of TQM is that every component of the organization has a customer—whether internal or external to the institution—whose needs must be understood and met. “The marketing division is the customer of the manufacturing department, which in turn is a customer of the engineering department... the net result of course, is a kind of teamwork that is lacking in many organizations” (p. 37).
2. *Challenge*: TQM is based on the belief that people want to take the initiative to do a good job. This is particularly true if there exists a challenging goal that is pervasive throughout the organization and there is a supporting recognition and reward system.
3. *Process*: Managers must keep their eye on the process, which is defined as the ordered sequence designed to produce a given result. “If there is an error, its analysis

- becomes a learning event with the goal of spotting the flaw in the process that caused it. Improving the dependability of the process is the major focus of attention” (p. 39).
4. *Continuous Improvement*: Americans are learning the Japanese concept of “Kaizen—the process of continuous improvement—the day–by–day, week–by–week discovery of small steps that make the process increasingly more efficient, more economical, and more dependable” (p.40).
 5. *Collaboration*: Interdependence is the new cornerstone of the customer-driven organization. This parallels Deming’s Point 14, “Break down the barriers between departments.”
 6. *Change*: Organizations wishing to change their cultures find it relatively easy to make changes in various activities, events, behaviors, but “fail to challenge their deeply held beliefs about customers, missions, the means of achieving performance goals, people, motivation, and what level of quality is achievable.” (p. 42).
 7. *Measurements*: “The principle of measurement is perhaps one of Deming’s most important contributions and is at the heart of managing by fact and kaizen” (p. 42). Measurable goals serve to keep people accurate in their assessment of success and serve to energize people through feelings of accomplishment and challenge.
 8. *Persistence*: TQM constantly reminds an organization that it should be planning for the long-term achievement of almost perfect customer service. “It’s far from being a ‘program’, ‘project’, or ‘experiment’ ... like any change of organizational culture, the effort must be undertaken seriously with enough faith in the outcomes that people will persist through the unexpected frustrations and the rough spots” (p. 43).

With these eight common principles already at work in both private and public business organizations, as well as the service and manufacturing industries, a closer look at the differences between their application in business and higher education is in order.

Differences Between Business and Higher Education

Several sources (Lewis & Smith, 1994; Sherr & Tector, 1991; Yudof & Busch-Vishniac, 1996) suggested important differences between business and higher education when implementing TQM-type models. These differences include some of the following considerations.

1. Some key words or phrases associated with total quality management, such as TQM, do not always translate effectively in a higher education setting, as it is difficult for academics to embrace anything with the word “management” in its title. Another troubling area involves referring to students as *customers*.
2. A dual organizational structure generally exists between administrative and academic functions. This can often lead to a structural division that focuses on two separate outcomes rather than one common outcome.
3. Faculty members understandably have a loyalty to their discipline and/or department before the institution, and thus they can be inclined to put the immediate needs of their department before the greater needs of the institution.
4. An educational culture exists that encompasses various values, practices, and policies that could hinder the implementation of quality measures. For example, the emphasis on individualism may inhibit the teamwork required for TQM to be effective.
5. An inherent conservatism persists in higher education. People are reluctant to change something that has worked well in the past.

6. Higher education's investment in human resources is much more complex than the bottom line profitability in business.
7. The effectiveness of higher education administration can become compromised when they seek improvements to or new initiatives in teaching and learning, especially given the level of individual autonomy that faculty generally enjoy. Although faculty members can be key players for these kinds of changes, the administration must rely on persuasion and leadership, more so than in a business setting.

With these fundamental differences taken into consideration between business and higher education, the American Society for Quality surveyed higher education institutions in 1991 to determine the impact TQM was having on them (Klaus, 1996).

TQM Applications in Higher Education

As in the business setting, college and university presidents and other senior administrators are responsible for providing leadership to their management teams. Deming (1989, p. 16) discussed an effective leader's ability to create an interest, a challenge, and a zest for work in all his or her employees. A successful leader tries to "optimize the education, skill, and ability of everyone and helps to improve every one" to perpetuate change and improvement. The leader must manage the ambiguity that arises out of change in order to successfully make that change occur. Morgan (1988) suggested managers and leaders must be proactive about the future and anticipate further changes. Executive leaders and managers who thrive on innovation and change are visionaries who lead successful organizations (Foster, 1986). Successful transformation of higher education institutions will require CEOs who demonstrate dynamic, decisive and strong organizational savvy to know when and how to change their organizations.

The Deming method of *Plan, Do, Check, and Act* advocated commitment to the planned action by making the necessary changes and measuring the results through gathered data. Implementing these four critical factors in any plan of action could provide a new direction for continuous improvement in the higher education setting (Moser, 1991). Exactly how these elements should be applied in any particular setting, however, would be subject to individual adjustments.

Many colleges and universities are trying to overcome problems associated with change so that they might better deliver higher quality education to their students. However, other higher education institutions are less committed to this ideal, which could lead to mediocre performance outcomes. Moser (1991) believed that Deming's Management Method could prove to be a useful tool in overcoming problems and dealing with change in an effective manner.

In 1989, David Kearns, chairman of Xerox Corporation (winner of a Malcolm Baldrige Award), invited leaders from industry, government, and business schools to get together to develop support within the higher education community for reinforcing quality as a part of the business school curriculum. His intent was to form an industry-academic partnership that would develop strategies for working together to improve competitiveness. "To be competitive as a nation, we must do two things: Improve quality and improve education... U.S. business, collectively or singly, cannot survive in world competition by itself. We need your help"(cited by Steeps, 1993, pp. 329-330).

Robinson et al. (1991, pp. 94-95) stated:

Our system of higher education is one of this country's most powerful competitive weapons. Working together, companies and institutions of higher education must

accelerate the application of total quality management on our campuses if our education system and economy are to maintain and enhance their global position.

Over the past two decades, people have become increasingly aware of their rights to expect excellence from the higher education institutions they attend or support via their tax dollars (Russell, 1995). As demands for accountability have changed, colleges and universities have sought viable ways to respond. While calls for accountability are not new to higher education, they are become more pervasive and vocal. Users want evidence of successful outcomes via such measures as the employment rate of graduates, budget balancing, sound spending decisions, and renewed attention to community needs. Demands for stricter accountability have becomes so widespread that virtually every area of academia, government and the health care industry are faced with the challenges of finding better ways to meet customer and constituent expectations.

There is increasing evidence that higher education is moving closer to the center of the accountability spotlight. During the 1980s, several reports focusing on higher education accountability were released from diverse organizations such as the American Council on Education in 1982, National Commission on Excellence in 1993, the National Institutes of Education Study Group in 1984 and the Association of American Colleges in 1985 (Peterson, 1993). With the growing recognition among higher education specialists for the need to examine the effectiveness of their institutions, many of them have turned to the concept of TQM.

Is TQM right for higher education? A number of authors (Chaffee & Sherr, 1992; Cornesky et al., 1992; Lewis & Smith, 1994; Wallin & Ryan, 1994) are convinced of this for a number of reasons:

- TQM builds on the tradition of quality that is associated with higher education.

- TQM supports the development of people-administrators, faculty, staff and students.
- TQM concepts can be applied to the administrative side of the organization as well as the classroom side.
- TQM is a philosophy, with principles and tools. Unlike many innovations, TQM is not a recipe of ingredients and steps that must be followed to produce the intended result. Therefore, institutions can customize it to fit their particular needs.
- TQM uses many known principles, such as tools of good management/leadership, continuous improvement, teamwork, decisions based on data, and customer satisfaction.
- With these reasons in mind as to why TQM is right for higher education, institutions must have an environment that is conducive to TQM implications.

Conditions Necessary for TQM Implementation

Too often, members of an organization become fixated on the *what* or *how* of change, and fail to consider *why* a change is taking place. Several key sources of change literature, including Burnes, 1996; Goodman, 1982; Levy and Merry, 1986; and Rajagopalan and Spreitzer, 1996, feel that understanding why a change is taking place is an essential starting point.

Two different perspectives on sources of change are typically noted in the change literature, especially those of Burnes (1996) and Rajagopalar and Spreitzer (1996). The first of these is *External Environmental Demands*, where leaders make choices to adapt to their environment because they understand that the organization and the environment have an interdependent relationship. An example of this would be the case of organizational mergers where the organization is responding to outside forces.

The second source of change is *Internal Environmental Demands*. Three internal sources that are noted for initiating change include (a) the gathering of surplus, (b) the resources, readiness and willingness of at least a dominant coalition to ensure change, and (c) transformational leadership. The change literature tends to focus more on the internal environment and the need to change resulting from the vision of a new leader or change agent (Carnall, 1995). An example of internal source of change in higher education would be the implementing of a post-tenure review process because of changed institutional values. To understand the phenomena of change, one must also look at *first- and second-order change*.

One of the primary distinctions in the literature concerns first- and second-order change (Goodman, 1982; Levy & Merry, 1986). First-order change involves minor adjustments and improvements in one or more dimensions of the organization; it does not change the organization's core. Change occurs at the individual or group level. First-order change is characterized by evolutionary change, a linear process, developmental or ongoing efforts that allow the organization to carry on with its present policies or achieve its present objectives and incremental approaches (Levy & Merry, 1986). For example, a first-order change might be changing a class in a department or creating a sub-unit within a university to carry out a responsibility such as service learning. Many of the changes typified in the higher education literature are first-order changes, and are often associated with the use of TQM management strategies or systems.

Second-order change is a much more significant transformational change wherein the underlying values or mission, culture, functioning processes, and structure of the organization change (Levy & Merry, 1986). The organization changes at its core, and the changes are irreversible. Second-order change is often associated with a crisis that creates the change. An

important characteristic associated with second-order change is that it is multidimensional, affecting many aspects of the organization. Second-order change can affect individuals, groups, the entire organization, or even the examining bodies to which the university must report (Argyris, 1982; Levy & Merry, 1986).

Faced with these changing environments, as well as the need to satisfy the internal or external and first- or second -order calls for change to improve the quality of higher education, its leaders and reformers have begun the arduous task of transforming their institutions. These change leaders and reformers have done this while assisting with local and state economic development among other forces (Kezar, 2000). These changes occur because the environment demands change for survival, rendering leaders responsible for managing the transition from one stable state to another.

An example of first-order change can be exemplified at Virginia Tech. In 2002 the President and the Board of Visitors decided that Virginia Tech should become a *Top 30 Research Institution*. This has resulted in several significant changes to the way the university carries out its mission. Specifically, the reorganization of colleges within the university culminated in the creation of a new college and schools within the college. Along with the creation of a new college and a School of Education, some undergraduate programs of study, such as the Career and Technology Education were terminated.

As leaders ultimately manage these diverse calls for change with their increased complexity and pace, they must consider what impact the changes may have upon the performance of individuals in the organization (Patton & Demster, 2002). One factor to consider is an individual's self-identification with the organization, generally measured by years of employment with the organization.

Chao and Dugger examined this factor along with several other variables in their 1996 article, which surveyed of 150 teachers and administrators of Iowa Community Colleges. They hypothesized that there would be no difference in attitudes for the acceptance of change among groups with different years of work experience. As they anticipated, the results of the survey indicated that there were no significant variations in attitudes based on years of work experience. They attributed this finding to the fact that acceptance is based essentially on how well the need for and the benefits arising from the change are communicated to employees. In other words, if employees feel “psychologically safe” (Schein, 1993), their opposition to change will be dramatically reduced.

Changes are cyclical and respond to new forecasts of what is needed. Senge (1990) argued that organizations in today’s ever-changing environment must be focused in order to implement a total quality management culture (TQM).

Cornesky et al. (1991) listed five conditions for establishing a TQM culture in colleges and universities: (a) education and administrative commitment, (b) education and commitment of faculty and staff, (c) the establishment of trusting relationships, (d) establishment of pride in workmanship, and (e) the changing of the institutional culture. These challenges provide opportunities for collegiate administrators as they prepare to take their institutions through critical times of economic and social change.

Coats (1990a) offered several ideas for helping collegiate institutions establish TQM

Programs:

- *Provide leadership*: “Leadership is not so much the exercise of power as the empowerment of others” (Coats, 1990a, p.33).

- *Focus on customers:* Students should be provided with what they need to succeed. Listening to their wants and designing programs to meet and/or exceed these wants is critical.
- *Do things right the first time:* Quality must be the standard. Deming wrote, “Improve quality and you automatically improve productivity” (Coats, 1990a, p.33).
- *Go for results:* Do not study TQM to death. Just do it.
- *Simplify:* Eliminate policies, rules, and regulations that stifle the organization. Flatten the hierarchy and increase the span of control.
- *Reduce costs:* Attack the processes, not the people, and achieve cost savings of up to 30% or more.
- *Develop teamwork:* Better solutions emerge when everyone is given a chance to work together to solve problems.

LeTarte (1993) suggested a seven-step program for establishing the necessary conditions to implement TQM:

1. Understand the concepts.
2. Convince CEO of its utility.
3. Build a core of committed, knowledgeable people.
4. Plan to establish TQM principles early.
5. Build on past strengths.
6. Be prepared to think and act differently.
7. Use systems thinking.

Leffel, Robinson, Harshberger, Krallman, and Frary (1991), from lessons learned from Virginia Tech’s experiences, offered these generalizations: (a) leadership must be valued at

every level of the institution, and in turn, leaders must perform important tasks or delegate them; (b) followers must view the management process positively. Certain management characteristics are essential, such as decisiveness, being result-oriented, planning ability, and assigning accountability; (c) leaders must communicate a belief about the vision or direction of the institution, establish a shared sense of values, and commit to the continuing education of all personnel; and (b) university administrators are not prepared as leaders. At present, a commitment to the type of leadership development needed to implement TQM is lacking in most universities. As one can see, a holistic integrated approach to TQM is needed in order to implement a successful model in higher education.

Higher Education Models

Total quality provides a means for developing an integrated approach to the educational enterprise. Seymour (1992), Miller (1991), and Cornesky et al. (1992) stressed that the conceptual application of TQM principles to higher education should not to be construed as a “quick fix” for their problems. Coate (1990), Sherr & Tector (1991), and Keller (1992) reported on the interest in TQM among various educational institutions around the country. TQM applications have been applied to administrative operations, teaching and research, and the curriculum. Some institutions applying specific applications of TQM include Oregon State University (Coats, 1990b), Maricopa Community College (DeCosmo et al., 1990), Virginia Tech (Leffel et al., 1991) and Fox Valley Technical College. These reports includes examples of successful applications, recommended steps for those wishing to begin the TQM process, as well as important cautions regarding the ideal pace at which such a management paradigm shift should occur. As with any new system of management, certain roadblocks to effective implementation will arise, and higher education is no exception.

Problems and Issues of Applying TQM in Higher Education

Marchese (1993) expressed some common concerns, as well as common misunderstandings, about the application of TQM in a higher education setting. His list includes the assertions that (a) students are not customers, (b) faculty already interact with students, (c) the application of the technological aspects of TQM is fine for corporations but not for education, (d) TQM is no different than good management, (e) the language does not fit higher education.

Seymour (1992) also described some frustrations associated with implementing TQM in higher education: (a) the process is highly time-consuming because training, decision-making, and planning all require more time than before; (b) leadership from the top is sometimes inconsistent with its stated support for TQM; (c) managers and supervisors were resistant to change and afraid to “let go” of decision making power; (d) superficial efforts at adopting TQM without accepting its underlying philosophy resulted in ineffective application; (e) although many efforts did not appear to produce definite, tangible results, they were perceived as sufficient, and (f) middle management and supervisors were resistant to change, and perceived a loss of control that was difficult to accept. Although frustration and caution are both evident in many of these findings, none of the responding institutions suggested abandoning TQM.

In the growing body of TQM literature, there still exists only a small body of literature devoted to how educational organizations have implemented TQM, the hurdles encountered, and how they respond and adapt its principles to their existing culture. This shortfall in the literature has made its implementation and application in colleges and universities difficult. As higher education specialists attempt to acquaint themselves with the principles and techniques of TQM, confusion continues to exist about the system’s ultimate utility to their institutions.

Implementing TQM constitutes a revolution in thinking and an evolution in practice. Seymour (1992a) called this a paradigm shift a *culture change*. DeCosmo et al. (1991) argued that the assumptions underlying the style of management required by this new paradigm differs from those underlying the present style of management of most organizations. Ewell (1991) acknowledged that while people are intrigued by TQM, they could also be put off by its linguistic and methodological links to business and industrial processes that have little to do with teaching and learning. Schmidt and Finnigan (1992) noted that installing TQM in educational organizations is often more complicated than transforming a clearly focused private enterprise. Given that a quality-based philosophy is beginning to permeate both private and public sectors, including elementary and public education ... “colleges and universities will find incoming freshmen better prepared, more motivated, and much more uniform in their capabilities; this will improve prospects for starting every student’s college career off on a positive note” (Rinehart, 1993, p. 162). The reason for this optimism is that these incoming freshmen have already been exposed to the cycles of change that go along with the TQM process. With these changes being cyclical and responding to new forecast demands, it is important for organizations to remain focused on the implementation of TQM and the change that are appropriate for their organizations. One manifestation of this country’s growing preoccupation with quality and change is the *Malcolm Baldrige National Quality Award* (MBNQA). Featuring the best of what TQM encompasses, the MBNQA is for those who aspire to improve quality, regardless of the enterprise.

The Malcolm Baldrige National Quality Award

“America is the most productive nation in the world, but its growth in productivity has faltered. Some of the factors contributing to slower productivity growth are within our control

and some are not, but what is important is that we respond to this challenge.” (Hart & Bogen, 1992, p. 12).

This statement was made in 1992 during a conference on productivity sponsored by the White House. In summarizing the conference’s outcomes, Hart and Bogen (1992) concluded that a public/private sector effort could succeed if all parties in the process--business, government, labor and higher education-- all pitched in to find a solution together. As result of that conference, a public/private effort was formed, and the Malcolm Baldrige National Quality Award was created.

Various awards have been used worldwide to recognize organizations that have successfully adopted TQM as a change management principle. For example, the first of such awards was the Deming Prize, established by the Japanese Union of Scientists and Engineers (JUSE) and instituted in 1951. The prize, named after the late W. Edward Deming, (who is credited for guiding Japanese manufacturing beyond its second-class reputation for poor quality, to its current position of excellence) is awarded in six different categories: (a) companies (or public institution), (b) divisions, (c) work sites, (d) small enterprises, (e) overseas companies, and (f) individuals (Steeple, 1993). Continuous improvement and customer satisfaction are the two primary similarities between the Deming Prize and the MBNQA.

The United States Congress established “The Malcolm Baldrige National Quality Improvement Act of 1987 (Public Law 100-107).” The original purpose of the award was to promote awareness of quality excellence and to recognize quality achievements of U.S. companies. In the early 1990s, however, business and industry recognized that two sectors crucial to their quality efforts—the education and health sectors—were not eligible for the MBNQA, and therefore omitted from the country’s focus on developing a more systematic

approach to quality. Losco and Fife (2000) added that several prominent educational associations and institutions were also raising the same concern that education was not eligible for the award. Thus, an education pilot project was developed for 1994 and 1995, and in 1998 Congress formally authorized the MBNQA program for education. Although oversight for the award is assigned to the Department of Commerce, the National Institute of Standards and Technology (NIST), an agency of the Department of Commerce, manages the award process. The American Society for Quality Control (ASQC) assists in administering the award program under contract to NIST. Therefore, it is a joint public-private program, administered by the U.S. Government (Dobyns & Crawford-Mason, 1991). In its current form, the MBNQA can be viewed as a set of values, a framework, and a group of criteria/items that can work as a robust system for performance improvement (Seymour, 1995).

Educational organizations have been very interested in applying the benefits of the Baldrige evaluation process to their own specific needs, goals and accomplishments. In 1995, 19 educational organizations submitted applications to participate in the pilot award program, and NIST distributed over, 20,000 copies of the award criteria to interested institutions (Olson, 1996). The pilot program, however, was discontinued in 1996 due to cuts in federal funding.

In 1998 the award was officially reestablished for education, with the Department of Education providing primary funding for the award. The overall intention of the award would serve as a basis for a reliable and measurable diagnostic tool that schools (both secondary and post-secondary) could use in their overall performance management systems (Banister, 2001). The anticipated outcomes of the award were to encourage school performance, develop and encourage the sharing of best practices, and improve partnerships among schools, businesses, and human service agencies.

Thus, with the establishment of both the educational and health care awards, the MBNQA is now awarded in six categories (1) manufacturing, (2) service, (3) small business, (4) primary education (5) secondary education, and (6) health care. Within the secondary education category, seven areas are rated on a varying point scale that totals 1,000 points (www.quality.nist.gov, 2002). These areas and their maximum point values are as follows:

1. Leadership (120 pts),
2. Strategic Planning (85 pts),
3. Student, Stakeholder, and Market Focus (85 pts),
4. Information and Analysis (90 pts),
5. Faculty and Staff Focus (85 pts),
6. Process Management (85 pts),
7. Organizational Performance Results (450 pts).

A maximum of two awards per category are given each year. In any year that the MBNQA's exacting standards are not met, no award is given. Past award winners by category and year are shown in Appendix E.

Award Process

The MBNQA process is based upon the evaluation of company/school application of up to 75 pages (up to 50 pages for small business and education), which elucidates how they have implemented total quality in their organization and what results they have achieved. The first step in the process consists of applications being reviewed by one of the 400 independent examiners, each of who are recognized experts in the quality field. The applications are then reviewed by a group of examiners, after which the senior examiner identifies any major discrepancies and variability in scoring. He or she then schedules a consensus meeting. If

needed, the application may be forwarded for further review at that time. If the application is not of sufficient quality to forward to the next stage of review, a feedback report is created consisting of opportunities for improvement, and areas of excellence. If, on the other hand, the application is considered worthy, a second examiner reviews it and determines its rating on a sliding scale for each category of the criteria.

If the application passes the second review, a team of five or more examiners conducts a site visit, during which the team interviews key members of the organization to learn more information and to clarify questions. If the applicant institution is not selected for a site visit, a feedback report is created for that institution. After the site visit, the findings go to the nine Baldrige Award judges for final review. These judges are appointed by the Secretary of Commerce and make their recommendations to NIST, which in turn presents final recommendations to the United States Secretary of Commerce. Every applicant, successful or not, receives a detailed feedback report that summarizes strengths and weaknesses of the applicant's quality systems as identified by the examiners (NIST, 2002).

As noted earlier, the MBNQA is based upon quality by design concept, a term suggesting that quality is the degree to which a class of products or services satisfies the requirements of the customer. As such, quality can be purposefully designed into the process that delivers those products or services, and it is a concept that can be continuously improved upon. Seymour (1995a, p. 33) believed that the kind of quality that the MBNQA emphasizes is preferable for many reasons, one of which he elaborates on.

The demonstration of student achievement is a major category, for North Central Colleges and Universities are now very concerned about how they can show what level of student achievement that they are able to produce. Unfortunately, what they are doing

is just end inspection. They are pulling off-the-shelf assessment instruments and giving mid-point and end tests. Those instruments don't really capture what is going on. So, the Baldrige is better in terms of approach, deployment, and results because it forces you to think about the input, the process, and the output. Most accreditation approaches focus on inputs and outputs and miss the process in between. However, the MBNQA with all of its success and enthusiasm among the users in the business and industrial is not without its detractors.

MBNQA Criticisms

Deming (1992) raised the question of the validity of the award process and expressed grave reservations about creating a U.S. quality award. He was concerned that no organization had yet demonstrated the “stuff” of which quality organizations are made. Houston (1990) and Zemke (1991) argued that the application process itself might be cost prohibitive for smaller organizations. Banister (2001) pointed out that the framework and intent for the education award criteria are similar to those connected with the Business Criteria for Performance Excellence, though they differ in issues and language specific to educational settings. Kozol (2002) argued that the best reason to provide a child with good schooling is so that child will have a happy childhood, not to help IBM compete with Sony. Banister (2001), in *A Question of Quality*, criticized the Baldrige National quality program's Education Criteria for Performance Excellence as a poor attempt to encourage school improvement. Furthermore, she claimed that the rhetoric embodied in the award does not play out during the implementation process and leads schools into a maze of meetings, surveys and jargon. As Seymour (1995a, p. 27) reported, “People feel as though they are assessing themselves to death.” The reality of undertaking any type of comprehensive assessment is that it's likely to be labor intensive. Thus, Seymour went on to

recommend that the Baldrige self-assessment should also be used as an accreditation self-study or as a means to reduce the many scattered requests for data from governing boards and state agencies. The literature also presents some indications that the Award dimensions could have a negative impact on the environment of higher education. Seymour (1995a) reported that these concerns were largely critical of the extreme competitiveness of the prize, and that the Baldrige quality takes a lot of work. Despite the MNBQA's critics, most agree that the greatest value of the process is as a self-assessment instrument, albeit an exceptionally rigorous one.

The college campus already has quality indicators in place, including resource accumulation, accreditation standards, matriculation rates, etc., which are straightforward and well accepted. The question many colleges find themselves asking is why would anyone want to pursue a kind of quality that is difficult to understand and even more difficult to achieve.

Benefits of the MBNQA

The Baldrige Award criteria framework is analogous to a big picture that describes the institution as a system with interconnecting parts. Thus, one very positive outcome for colleges and universities using the Baldrige is as a new approach to more holistic thinking. Seymour (1995a, p. 32) reported that several respondents (in the study) seem to benefit from seeing how the discrete parts of the university connect with one another. "We generated an integrated view across the college because the Baldrige gave us a common framework." The MBNQA provided everyone a common language to use when speaking of continuous improvement.

The Baldrige system is also deeply rooted in the core concept of continuous improvement and organizational learning. Clear goals for improvements are articulated and measured, and indicators are developed and used to demonstrate progress toward these goals, insuring that the process is "fact-based." It must also be seen as a systematic process cycling through seasons of

planning, execution, and evaluation that will focus on key processes and lead to even better results (Banister, 2001).

Improvement is a regular part of the daily work of all faculty, staff and students.

Improvement processes seek to eliminate problems at their source and improvement is driven by opportunities to do better, as well as by problems that need to be corrected. (Hertz, 1999, p. 36)

Defenders of the MBNQA have also pointed out its value as a learning tool. As Seymour (1995a, p. 33) noted, “The Baldrige asked the right kind of questions. It forced you to think about things you don’t think about otherwise.” In that sense, the MBNQA process appears to be two-dimensional when respondents talk about “asking the right questions.” First, the Baldrige encourages institutions to practice assessment-as-learning. For example, one of the respondents to Seymour's study is quoted as saying, “We keep looking for a way to assess the progress we have made. We keep looking for a way to bring those units on board that have been less than enthusiastic.” (p.35) In addition to being used as a pure assessment tool, the Baldrige can also be used as a checklist to develop appropriate timelines for reallocating resources, personnel, etc, as well as being used as an instrument of change. In short, the MBNQA can be viewed as a set of values, framework, and criteria of items that work as robust system for performance improvement. More importantly, “Its greatest value may be in giving us (educators) a common language to speak with one another.” (Seymour, 1995a, p. 32) In short, the MBNQA provides higher educational institutions the ability to assess how well they are doing what they are doing.

Although a great deal has been reported in trade literature about the successes and failures of business using TQM and the Malcolm Baldrige Award Criteria, limited imperial research still exists to substantiate its success in academia since Newall & Dale first reported on

these areas in 1990. The purpose of this research, therefore, is to assess the current perception and practices of the University of Wisconsin-Stout (UW Stout) in its use of MBNQA criteria.

Research Methodology

The research design for this study is a mixed methodological study, which utilized a survey research design—a method widely used to investigate educational issues (Borg & Gall, 1989). Survey research has considerable credibility and widespread acceptance. Specifically, the design of this study primarily took advantage of the quantitative methodology. A survey questionnaire was used to collect the data on the perceptions of the use of the Malcolm Baldrige National Quality Award (MBNQA) Criteria at UW Stout.

The University of Wisconsin Stout

The University of Wisconsin Stout (UW Stout) is one of the thirteen publicly supported universities in the University of Wisconsin (UW) System (eleven comprehensive campuses plus UW Madison and UW Milwaukee). The UW System has designated UW Stout as a *special mission institution*. This mission was forged from the strong industrial heritage of its founder, James Huff Stout, a Wisconsin industrialist. He was a man of vision who believed students needed educational programs to prepare them to participate in America's developing industrial society. To implement his vision, Mr. Stout founded a private institution called the Stout Manual Training School in 1891. In 1911, this training school became a public institution called Stout State College and received its first accreditation as a teacher-training institute in 1928. During this time, the College's primary programs centered on industrial arts and home economics education. In 1932, UW Stout was accredited as a college and it received Master's Degree accreditation in 1948. In 1974, UW Stout became part of the UW System when the State of Wisconsin passed a law that combined its two public university systems under one Board of

Regents. Presently, over 111 years since it was founded, UW Stout's 8,000 students attend one of three colleges:

1. The College of Humanities
2. The College of Technology, Engineering and Management; or
3. The College of Arts and Sciences

UW Stout offers a distinctive array of 26 undergraduate and 17 graduate degree programs, which when taken as a whole, are unique in the United States.

The UW System provides UW Stout with uniform policy guidelines and centralized support for capital planning and budget, finance and trust funds, government liaison services, legal services, market research, purchasing contracts, transfer student information services, and UW System-wide information technology coordination. UW Stout's enrolment comprises approximately five percent of the UW System total student population.

While UW Stout offers graduate programs, its primary objective is to develop students for careers in industry and education. Toward that end, UW Stout emphasizes an integrated approach to learning that engages students in both theoretical and practical aspects of their disciplines. Traditional instruction is reinforced with extensive technology laboratories and industrial partnerships. UW Stout describes this as "hands-on, minds-on" active learning. These methods are complemented with courses offered via distance learning and by other delivery mechanisms to optimize student flexibility. Although UW Stout's 27 undergraduate programs represent the lowest number of programs available within the UW System, more than half of these programs are offered at no other campus in the UW System, and several are unique in the nation. Moreover, many of the programs are distinctive because of their applied focus. Source: (<http://www.uwstout.edu/mba/toc.html>)

Summary

Although TQM, the Malcolm Baldrige National Quality Award criteria, and other similar quality assurance programs and philosophies have a well-established history in business and industry, colleges and universities have been slower to accept and adopt these concepts for application in their own educational settings. Given the ambiguity concerning the effectiveness of quality measures on college campuses, this study seeks to further expand and compare the perceived outcomes that UW Stout's administrators, faculty, and staff/support staff possess in the university's pursuit of the MNQA. The next chapter will address the specific research methodology us in this study.

CHAPTER III

Research Methodology

Chapter 3 describes the research methodology used to answer perceptions of administrators, faculty, and staff/support staff at the University of Wisconsin Stout (UW Stout) concerning implementation of Malcolm Baldrige National Award (MBNQA) criteria. Detailed areas of discussion include (a) research design, (b) population and sample, (c) reliability and validity, (d) instrumentation, (e) development and description of the instrument, (f) variables, (g) pilot-test, (h) data collection, and (i) tabulation and organization of data.

Research Design

The research design for this study included both qualitative and quantitative research methodologies. This design takes advantage of the benefits of qualitative research, such as the ability to develop an understanding of individual differences between people, as well as providing a more detailed picture of the findings. The design also benefits from availability of hard generalizable data that a quantitative study can provide. In essence, “blending qualitative and quantitative methods of research can produce a final product which can highlight the significant contributions of both” (Dezin, 2001. p. 327).

The following three research questions that guided this study primarily used Quantitative methodology and focused on implementing the MBNQA Educational criteria at UW Stout:

1. What differences exist in the perceptions of administrators, faculty, and staff/support staff concerning how well the university implemented the MBNQA criteria?
2. What differences exist in the perceptions of administrators, faculty, and staff/support staff based on their work experience in business and industry concerning how well the university implemented the MBNQA criteria?

3. What differences exist in the perceptions of administrators, faculty, and staff/support staff based on their years of service to the university concerning how well the university implemented the MBNQA criteria?

Malcolm Baldrige National Quality Award criteria were used in the creation of the survey instrument. The instrument was based on assessment categories contained in the MBNQA. Appropriate research protocol was assured through submission of an IRB form to Virginia Tech (see Appendix A for the Virginia Tech IRB form), which was also submitted to UW Stout, per the directions of Dr. Julie Furst-Bowe, Assistant Chancellor.

The quantitative methodology used in this study was the survey research design method, which has often been widely used to investigate educational issues (Borg & Gall, 1989). This method has been widely accepted in the education setting. According to Borg and Gall (1989, pg. 416), “it accounts for a large proportion of the research done in the field of education.” Primary advantages of the quantitative method are that (a) it reveals the causes of a social phenomena, (b) it is objective and outcome-oriented, and (c) it produces hard and replicable data that are can be extrapolated to a larger population (Cook & Reichardt, 1979).

The qualitative data were collected via open-ended survey questions. Because qualitative research is concerned with understanding human behavior, this type of data is generally gathered in a more naturalistic and uncontrolled observation format. With qualitative data one can generally preserve the chronological flow, see precisely which events led to specific consequences, and ultimately derive fruitful deductions (Amaratunga, Baldry, Sarshar, & Newton, 2002). The primary advantage to this method is that it can generate data-rich and vivid descriptions that are nested in a real life context and have a ring of truth about them.

As noted earlier, the available literature suggests that quantitative and qualitative research methods are complementary and can be successfully combined (Amaratunga et al., 2002). Das (1983, p. 311) stated that "...qualitative and quantitative methodologies are not antithetic or divergent, rather they focus on the different dimensions of the same phenomenon." Accordingly, quantitative research can be used to describe or measure the particular field of interest, thereby ensuring that the findings are grounded. Qualitative research can then be used to establish the generalizability of the findings.

A survey questionnaire containing both qualitative (requiring open-ended answers) and quantitative questions (requiring closed-ended responses) was used to collect and measure the perceptions of UW Stout administrators, faculty, and staff/support staff regarding the implementation of Malcolm Baldrige National Quality Award (MBNQA) criteria at their institution. Participants were asked to complete both the qualitative and quantitative questions in one sitting. The qualitative portion of the instrument took advantage of open-ended response questions, while the quantitative portion of the instrument used a 6-point Likert-type scale to record responses.

The use of both methodologies in this mixed design study facilitated the *triangulation* of the data. Triangulation in research refers to combining two or more theories, methods, or data sources in one study of a single phenomenon to converge on a single construct. (Amaratunga et al., 2000; Cook & Reichardt, 1979; Brewer, 2001). Although somewhat controversial, many investigators consider triangulation to be a very powerful way of gaining insight, making inferences, drawing conclusions (Fellows & Liu, 1997), as well as contributing to the trustworthiness of the resulting data (Ely, Anzul, Friedman, Garner, & McCormack-Steinmetz, 2000).

According to Denzin (1978), four sources can be used for triangulation: data (including time, space and person); investigator (use of several researchers investigating the same topic); theory (using multiple theories rather than single perspectives); and methodology (use of multiple methods to study a single problem). Of these four sources, this researcher selected data, theory, and methodology.

Population and Sample

The survey groups selected for this study were administrators, faculty, and staff/support staff of UW Stout because they represented a stratified random sample and met the conditions stated for the purpose of this study. Specifically, the criterion for study selection was that the subjects needed to be employed at the university on a full-time basis (30 or more hours a week) for at least 90 days. This researcher selected the three representative university population groups in order to reduce sampling error. As Salkind (2000) maintained, a study with a low sampling error results in a high degree of generalizability, thereby increasing the likelihood that the results can be extrapolated for use at similar institutions.

Names of the administrators, faculty, and staff/support staff used in the study were obtained from the institution's telephone directory and/or from the employee list provided by the university's human resource officer. UW Stout's list of employees was categorized as (1) full-time administrators, (2) full-time curriculum faculty and (3) full-time staff/support staff. For this study, the list of administrators included the chancellor, the provost, assistant chancellor(s), college dean(s), assistant dean(s), director(s), and assistant director(s). The full-time faculty category included assistant professors, associate professors, and full professors carrying a full-

time teaching load or full-time combination of research and teaching. The full-time staff/support staff category was defined as employees serving the university in a non-teaching capacity

The subjects were randomly identified by assigning a number to each member of the population and then using a random number generator to select 282 proportionally stratified full-time administrators, faculty, and staff/support staff who received the survey. As discussed by Kish (1965, p.82), this method of selection “is what people generally and vaguely mean by talking of ‘representative sampling,’ of samples which are ‘miniatures of the population,’ and by the notion that the ‘different parts of the population should represent the sample.’” In proportional stratification, strata sample sizes are kept proportional to the strata population size (Pedhazur & Schmelkin, 1991); in other words, the proportion of subjects randomly selected from each group is the same as each group’s proportion to the target population. In this study, the proportion was calculated to be 27 percent.

The uniform sampling proportion or fraction for this study was calculated by taking the 282 subjects in the random sample size and dividing by the 1,045 aggregate population, which is equal to 27 percent. Each stratum sample size was then determined by multiplying stratum size by the sampling proportion (Pedhazur & Schmelkin, 1991). Thus, sample sizes for each of the three strata were 23 administrators, and 97 faculty, 162 staff/support staff, (totaling a proportional sample size of 282). The overall random sample size of 278, which was used to determine the uniform sampling proportion, was calculated using Krejcie and Morgan’s 1970 formula for identifying sample size. This formula was cited in Isaac and Michaels’ (1981) *Handbook in Research Evaluation*, which was used with a +/- five percent confidence interval and 95 percent confidence level. These levels were adopted due to their high levels of acceptance in business, behavioral science, and educational research (Isaac & Michael, 1981). Once the

sample size and participants had been identified, the researcher distributed and collected the research instruments.

Reliability and Validity

The reliability of a *domain-referenced measure* refers to the consistency of the instrument in making estimates of the examinee's level of mastery of the instrument domain (Borg & Gall, 1989). The coefficient of internal consistency, otherwise known as *Cronbach's Coefficient Alpha Test (CCAT)*, was used to calculate reliability of the instrument. The data used to calculate the Cronbach's Alpha was drawn from the 201 returned instruments. Cronbach's Alpha value for the instrument was calculated to be .96. It should be noted that although this researcher had intended to calculate the Cronbach's Alpha with the use of pilot study data, there was an insufficient number of pilot study participants to generate reliable data.

The validity of an instrument is determined by the extent to which derived scores are free of constant (or systematic) errors. Hence, inferences based on those scores could be considered defensible (Martuza, 1977). Because domain-referenced measures are generally aimed at measuring achievement, evidence of content validity is important. Several procedures were developed that are generally similar to methods used to establish the content validity of a norm-referenced instrument. With regard to the instrument used in this study, the following steps were used to determine content validity:

- Select two content specialists.
- Give each specialist the domain definition and the evaluation instrument.
- Have each expert independently rate the relevance of each item to the domain definition using a four-point scale ranging from "not relevant" to "very relevant."

- Enter these data into a table and compute a measure of interrater agreement and an index of content validity (Martuza, 1977).

Development and Description of the Instrument

A copy of the instrument is included as Appendix B. The instrument included 31 items. The first 3 items related to demographic data (position, length of employment/involvement, and previous employment in business or industry). Items 4 through 26 related to quality and used a six-point Likert-type scale: 0—no knowledge of the statement, 1—strongly disagree, 2—disagree, 3--neither agree nor disagree, 4—agree, 5—strongly agree. In the event of missing data from any of the instrument questions, the number seven (7) was assigned to any missing data when coded.

The researcher made a point of positively wording statements concerning the MBNQA Criteria, as wording can greatly influence a participant's responses. In other words, "researchers attempt to be objective, meaning that they wish to develop an understanding of the world as it is, independent of their personal biases, values, and idiosyncratic notions" (Borg & Gall, 1989, p. 23). Positively wording a question also decreases the chance that a respondent will feel his or her answer will be put in negatively valued category (Brickman & Rog, 1998). Furthermore, it is likely to improve the quality of reporting in every area of a survey, not just those questions deemed to be particularly sensitive. Responses toward the low end of the scale indicated a perception of little implementation of the MBNQA criteria at UW Stout; responses towards the upper end of the Likert -type scale indicated perceived high levels of implementation. The last two items on the survey instrument were open-ended questions that related to the positive and negative outcomes as a result of the university's attempt to improve quality and win the MBNQA.

The instrument was designed to collect data on the seven categories of the Malcolm Baldrige National Quality Award. Specific survey items were developed from the framework of the 2001 Education Criteria for Performance Excellence (NIST, 2001). The seven categories are: (1) leadership, (2) strategic planning, (3) student/stakeholder/market focus, (4) information and analysis, (5) faculty and staff focus, (6) process management, and (7) organizational performance results.

In the personal profile portion of the survey, the participants were asked to identify their positions as administrators, faculty, or staff/support staff. Items on the questionnaire were arranged for easy completion, and the font style and size were selected to ensure maximum readability.

Variables

There are three independent variables in this study: (a) administrators, (b) faculty, and (c) staff/support staff. The nine dependent variables included in this study were: (a) leadership; (b) strategic planning; (c) student, stakeholder, and market focus; (d) information and analysis; (e) faculty-staff focus; (f) process management; (g) organizational performance results; (h) length of employment at Stout; (i) amount of business and industry work experience.

The construct validity related to the seven MBNQA categories builds upon two studies: Pannirselvam, Sifred and Ruch (1998) and Winn and Cameron (1998). Pannirselvam and Ferguson examined the relationship between categories using data from the Arizona Governor's Quality Award, which was comprised of data from business and industry in the state of Nevada. This award is based on the MBNQA. Pannirselvam and Ferguson employed path analysis to confirm the validity of the seven categories that make up the MBNQA framework. Cronbach alpha values for the seven categories (dependent variables a-g above) ranged from 0.77 to 0.90.

Winn and Cameron (1998) examined the relationships between the MBNQA categories using data obtained from a higher education institution. The instrument used in the study contained 190 items that not only assessed the seven categories of MBNQA but also assessed organizational culture, climate, work practices, organizational effectiveness, and respondent demographics. The instrument was administered to all permanent non-instructional staff members at a large Midwestern university. The seven MBNQA categories were operationalized into three groups: (1) *driver*, which was comprised of the leadership variable; (2) *systems*, which was comprised of the process management, information and analysis, strategic planning, and faculty and staff focus variables; and (3) *outcomes*, which consisted of the last two variables student, stakeholder, and market focus and organizational performance results. Factor analysis was used to determine the extent to which the instrument reliably measured the seven categories of the MBNQA framework. The alpha reliability coefficient for the dimensions ranged from 0.88 on the information and analysis variables to 0.96 on the leadership variable. Results indicated that the seven MBNQA categories are distinct constructs and are being measured reliably.

Pilot Test

It was essential to pilot test the instrument to assess whether it would provide meaningful and adequate data for the study (Babbie, 1990). For this study, the pilot-test participants consisted of a convenience sample of 30 administrators, faculty and staff/support staff members of UW Stout. Babbie (1990), Fink (1995), and Mangione (1995) recommended that 10 or more subjects with similar characteristics to the study population be used in any pilot-test, while Patton (1990) advocated that at least 25 subjects be included if an item analysis is to be conducted. Isaac & Michael (1981) advocated the use of between 10 and 30 individuals, which he deemed large enough to conduct statistical calculations. These pilot test participants were not

included in the study, but were similar in characteristics to the sample groups. The pilot-test participants received copies of the instrument and a cover letter requesting them to react to the content and structure of the survey instrument. Responses from the pilot test participants revealed that only minor editorial changes were needed to make the content and directions clear.

Data Collection

A letter was mailed to Dr. Julie Furst-Bowie, who chaired the Baldrige Award project at the University of Wisconsin Stout. This letter described the project and requested formal permission for her institution to participate in this study. A copy of this correspondence is provided as Appendix C.

A copy of the instrument with approved directions about distribution and collection was delivered to each participant in the Fall of 2003. An overall return rate was calculated for each of the three strata (administration, faculty, and staff/support staff). The non-respondents were contacted after ten days, at which time the researcher stressed the importance of their participation in this study and again asked them to return the instrument. If the non-respondents failed to return the instrument within a week after the contact, an alternate participant was selected from the list and provided with a copy of the original packet per the original dissemination method. The packet contained (a) the informed consent sheet, (b) the survey, (c) a cover letter describing the purpose of the study, and (d) instructions on how to complete the survey was disseminated to the sample population per the agreed-upon dissemination manner. A copy of this letter and the individual consent form is shown in Appendix D.

Twenty-three administrators, 97 faculty, and 162 staff/support staff were randomly selected within their strata. A list was created of 30 alternate participants selected in the same manner as the original participant list. This alternate list was necessary in the event that the

original participants had left the university, were not on campus during the time the instrument was distributed, or were otherwise unable to participate in the study. The confidentiality of individual responses was assured by informing all respondents of the anonymity and confidentiality of the data. They were assured that the results would be reported and discussed only in the aggregate. However, each instrument was coded to allow the respondent to be identified for any necessary follow-up or to aid in the distribution of findings to respondents who request them. After data was entered into a personal computer using SPSS 12.0 the codes were destroyed.

Tabulation and Organization of Data

Each questionnaire was coded for identification purposes. Responses for each questionnaire were entered into a personal computer using SPSS 12.0. Data was saved as an ASCII file to facilitate the importation of the tables into Microsoft Word.

Quantitative data was then analyzed by frequency distributions, percentages, means, analysis of variance (ANOVA) and a multivariate analysis of variance (MANOVA). The alpha level for the analysis of all data was set at a .05 level. The following procedures were employed in the analysis of the data:

1. The mean score for each of the seven Malcolm Baldrige National Quality Award categories were determined for each of the three groups.
2. Analysis of variance (ANOVA) compared the position (administrator, faculty, and staff/support staff) with the responses to the survey.
3. Multivariate analysis of variance (MANOVA) compared the personal factors (length of employment at UW Stout and employment in business or industry) and organizational factors (service area) to the instrument questions.

The qualitative data collected via open-ended questions was analyzed using content analysis to generate descriptive information. Merriam (1998, p. 160) defined content analysis in historical terms as “a quantitatively oriented technique by which standardized measurements are applied to metrically defined units and these are used to characterize and compare documents.” The study’s defined units of the instrument were directly related to the Malcolm Baldrige Award criteria and the overall research questions. Klippendorf (1980) maintained any phenomenon that particularly interested a given researcher would qualify as data for content analysis. Although the literature shows most content analysis studies are based on data that is readily available, Borg and Gall (1989) pointed out that administering questionnaires and then analyzing the data content could generate novel and relevant information.

Qualitative data analysis is an inductive process of organizing available data into categories and identifying themes as they emerge from the data (McMillan & Schumacher, 1993). Themes are general patterns that appear within the responses of different participants, which can be identified when data is analyzed for content (Patton, 1990). Content analysis is the process of identifying, coding, and categorizing the primary themes in the data (Borg & Gall, 1989). With regard to this study, it meant analyzing content contained in open-ended questions to identify themes or categories. The generally accepted form to analyze data from a broad theoretical framework or tentative working theme is referred to as the Ethnographic Research Perspective (Borg & Gall, 1989).

Some of the tentative working themes regarding the benefits of the positive outcome questions in this study included: (a) the increased recognition the university received, (b) the increased external funding the university was able to obtain, and (c) the increase in overall quality of students the university was able to attract. Some of the working themes for the

negative outcome question in this study were (a) attending more meetings, (b) having to do more paperwork, and (c) having less flexibility in scheduling.

While waiting for the data to accumulate, the researcher began to develop themes that would help explain or understand the observed phenomena. Such themes “therefore, are much more thoroughly grounded in the real world than many of the categories that emerge from armchair speculation” (Borg & Gall, 1989, p.57). Thus, the ethnographic method of analyzing themes tends to generate topics that can then be further tested using observation or other methods such as triangulation.

Multiple analysts were utilized to enhance the quality and credibility of the open-ended question data analysis. This follows Patton (1990, p. 68) who advocated the use of several analysts, to decrease the intrinsic bias that comes from a single analytical source.

Summary

This chapter focused on identifying procedures used in the study including selection of the sample population, description of the instrument, the way instruments were distributed and data was collected, and the procedures used to analyze data. The research design took advantage of both qualitative and quantitative methods in order to capitalize on the relevant strengths of both methodologies. The primary design used quantitative methodologies to answer the three research questions, which was then supplemented through qualitative methods. The proportional stratified sample population of this study was comprised of 282 administrators, staff/support staff, and faculty (randomly selected from within their strata) from UW Stout.

The instrument used to measure participants’ perceptions of the implementation of the MBNQA criteria was domain-referenced, and the content validity of the instrument was determined with the assistance of two content specialists. The instrument was designed to collect

data based on the seven categories of the MBNQA. Moreover, the instrument's specific items were developed from the framework of the 2001 MBNQA Education Criteria for Performance Excellence.

SPSS 12.0 was used to analyze the responses. The major statistical methods used to analyze the quantitative data were percentages, means, ANOVA and MANOVA. Dual analysts were used in this study's open-ended question qualitative data analysis.

CHAPTER IV

Results

This investigation sought to ascertain administrative, faculty, and staff/support staff perceptions of the implementation of MBNQA (Malcolm Baldrige National Quality Award) Educational criteria at the University of Wisconsin Stout. A proportionally stratified sample of 282 full-time administrators, faculty, and staff/support staff were surveyed, with strata sample sizes proportional to the strata population size at the university. The survey data was then analyzed by performing one ANOVA and two MANOVA analyses for each of the instrument's seven quality categories. A second area of analysis focused on examining responses to the two open-ended questions and establishing meaningful themes.

The following three research questions that guided this study primarily used Quantitative methodology and focused on implementing the MBNQA Educational criteria at UW Stout:

1. What differences exist in the perceptions of administrators, faculty, and staff/support staff concerning how well the university implemented the MBNQA criteria?
2. What differences exist in the perceptions of administrators, faculty, and staff/support staff based on their work experience in business and industry concerning how well the university implemented the MBNQA criteria?
3. What differences exist in the perceptions of administrators, faculty, and staff/support staff based on their years of service to the university concerning how well the university implemented the MBNQA criteria?

Of the 282 questionnaires distributed, 201 were returned, for a 71% return rate. The non-respondents were emailed after 10 days stressing the importance of their participation in this

study and asking them to return the instrument. Participants' service to the university ranged from 3 months to 37 years, with a mean service length of 12 years and 8 months. One hundred thirty-two participants stated that they had been employed in business or industry prior to being employed by UW Stout. The average length of employment prior to being employed by the university was 9 years and 3 months, and ranged from 1 month to 37 years.

Research Question One

This research question included two areas of analysis, the first of which consisted of examining quantitative data from the instrument. An ANOVA was conducted with employee position (administrator, faculty, staff/support staff) as the independent variable. Twenty-six questions organized into seven quality categories served as the dependent variables. These categories were: (a) leadership, (b) strategic planning, (c) student, stakeholder, and market focus, (d) information and analysis, (e) faculty-staff focus, (f) process management, and (g) organizational performance results. The second part of the analysis involved examining each of the two qualitative type questions to determine positive and negative themes.

Quantitative Data

An ANOVA was conducted for each of the seven quality categories to determine whether differences existed among the three groups in this study (administrative, faculty and staff/support staff). For categories that showed significance, Tukey Post-Hoc tests were conducted. The group means for each quality category are provided in table 4-1.

Table 4-1

Group Means for Each of the Seven MBNQA Quality Categories

Category	Group	Mean
1. Leadership	1	4.06
	2	3.67
	3	3.58
2. Strategic Planning and Deployment	1	4.32
	2	3.76
	3	3.78
3. Student, Stakeholder & Market Focus	1	3.68
	2	3.43
	3	3.39
4. Information and Analysis	1	3.93
	2	3.53
	3	3.46
5. Faculty-Staff Focus	1	3.22
	2	2.96
	3	3.08
6. Process Management	1	3.62
	2	3.56
	3	3.37
7. Organizational Performance	1	3.84
	2	3.32
	3	3.42

Note: Group 1: Administrators
Group 2: Faculty
Group 3: Staff/Support Staff

The ANOVA for Category One (*Leadership*) indicated a significant difference between groups. A Tukey Post-Hoc test was conducted for the dependent variables (administrators, faculty, and staff/support staff), which indicated that the administrative participants had a significantly more positive perception of Category One (*Leadership*) than did staff/support staff participants. ANOVA and Post-Hoc tables for Category One are provided in Tables 4-2 and 4-3.

Table 4-2

Group Perceptions for Category One: Leadership

Source	SS	df	MS	F
Between Groups	4.80	2	2.39	3.34*
Within Groups	142.31	198	.72	
TOTAL	147.11	200		

* $p < .05$

Table 4-3

Tukey Multiple Comparison for Category One: Leadership

Group I	Group J	Mean Differences (I-J)*	Std. Error
Administrators	Faculty	.40	.20
	Staff	.49*	.19
Faculty	Administrators	-.40	.20
	Staff	8.56E-02	.13
Staff	Administrators	-.49*	.19
	Faculty	8.56E-02	.13

* $p < .05$

The ANOVA for Category Two (*Strategic Planning and Deployment*) revealed a significant difference. Tukey Post-Hoc comparison results indicated that the administrative participants had a significantly more positive perception of Category Two than both faculty and staff/support staff participants. ANOVA and Post-Hoc tables for Category Two are presented in Tables 4-4 and 4-5.

Table 4-4

Group Perceptions for Category Two: Strategic Planning & Deployment

Source	SS	df	MS	F
Between Groups	6.57	2	3.29	4.20*
Within Groups	154.84	198	.78	
Total	161.41	200		

*p < .05

Table 4-5

Tukey Multiple Comparison for Category Two: Strategic Planning & Deployment

Group I	Group J	Mean Differences (I-J)*	Std. Error
Administrators	Faculty	.56*	.21
	Staff	.54*	.20
Faculty	Administrators	-.56*	.21
	Staff	1.86E-02	.14
Staff	Administrators	-.54*	.20
	Faculty	-1.86E-02	.14

*p < .05

ANOVA results for Category Three (*Student, Stakeholder, and Market Focus*) indicated no significance difference. The ANOVA for Category Three is reported in Table 4-6.

Table 4-6

Group Perceptions for Category Three: Student, Stakeholder, & Market Focus

Source	SS	df	MS	F
Between Groups	1.77	2	.88	1.43
Within Groups	122.59	198	.62	
Total	124.36	200		

*p < .05

ANOVA results for Category Four (*Information and Analysis*) indicated reported a significant difference. Post-Hoc results for the independent variables revealed that administrative participants had a significantly more positive perception of Category four than did staff/support staff participants. Results are presented in Tables 4-7 and 4-8.

Table 4-7

Group Perceptions for Category Four: Information & Analysis

Source	SS	df	MS	F
Between Groups	4.495	2	.2.248	3.404*
Within Groups	130.729	198	.660	
Total	135.224	200		

*p < .05

Table 4-8

Tukey Multiple Comparison for Category Four: Information & Analysis

Group I	Group J	Mean Differences (I-J)*	Std. Error
Administrators	Faculty	.40	.19
	Staff	.47*	.18
Faculty	Administrators	-.43	.19
	Staff	6.51E-02	.12
Staff	Administrators	-.47*	.18
	Faculty	-6.51E-022	.13

*p < .05

The ANOVA results for Category Five (*Faculty and Staff Focus*) revealed no significant difference. The results of the ANOVA are reported in Table 4-9.

Table 4-9

Group Perceptions for Category Five: Faculty & Staff Focus

Source	SS	df	MS	F
Between Groups	1.33	2	.67	.70
Within Groups	186.95	198	.99	
Total	188.28	200		

*p < .05

ANOVA results for Category Six (*Process Management*) revealed no significant difference. The ANOVA results are reported in Table 4-10.

Table 4-10

Group Perceptions for Category Six: Process Management

Source	SS	df	MS	F
Between Groups	12.25	2	1.12	2.05
Within Groups	108.51	198	.55	
Total	110.76	200		

* $p < .05$

ANOVA results for Category Seven (*Organizational Performance*) revealed a significant difference. Post-Hoc results indicated that administrative participants had a significantly more positive perception of Category Seven than both the faculty and staff/support staff participants; results are presented in Tables 4-11 and 4-12.

Table 4-11

Group Perceptions for Category Seven: Organizational Performance

Source	SS	df	MS	F
Between Groups	4.96	2	.248	4.11*
Within Groups	119.59	198	.60	
Total	124.55	200		

* $p < .05$

Table 4-12

Tukey Multiple Comparison for Category Seven: Organizational Performance

Group I	Group J	Mean Differences (I-J)*	Std. Error
Administrators	Faculty	.52*	.18
	Staff	.42*	.17
Faculty	Administrators	-.52*	.18
	Staff	-9.36E-02	.12
Staff	Administrators	-.42*	.17
	Faculty	9.36E-02	.12

*p < .05

Qualitative Data

Participants were asked to answer two open-ended questions in Part C of the survey. In the first question, participants were asked to describe at least three positive outcomes they observed as a result of the UW Stout winning the Malcolm Baldrige Award. In the second question, they were asked to describe at least three negative outcomes they had observed as a result of the university's award.

Positive Outcomes

The participants provided a total of 336 positive outcomes. Administrative participants provided 60; faculty participants provided 112; and staff/support staff participants provided 164. While all three groups provided input in the positive outcome category, they did not necessarily provide input into all five of the positive themes.

Five general themes emerged from data related to the positive outcome responses: (1) Recognition as a Center of Excellence, (2) Pride in Affiliation, (3) Positive Exposure/Marketing Opportunities, (4) Conduit for Continuous Improvement, and (5) Increased Communication. Examples follow of the answers to the first open-ended question that defined the various themes.

1. Recognition as a Center of Excellence

One hundred segments of text were classified in the category of the university being recognized as a Center of Excellence. One faculty participant stated:

We get more attention from certain industries and business sectors when we go out to raise funds [and point out we are] a Baldrige Campus.

A staff/support staff participant felt that:

The center for assessment and continuous improvement provides services to business and potential employers of our students causing those employers to view Stout positively [and] as a result, hire more of our graduates.

An administrative participant noted:

Comments received from other businesses [reflect] the Baldrige as a positive asset for Stout.

2. Pride in Affiliation

From the positive responses provided by all participants, 37 segments of text could be categorized as pride in being affiliated with the university. One staff/support staff participant stated:

[Winning the award] has given the staff the confidence and respect of colleagues from other schools.

Another staff/support staff respondent reported:

Maintaining [the Baldrige] standards is a good thing; it gives the staff the opportunity for input and a vested interest in the improvements on campus.

A faculty respondent stated:

This award is validation [that] what we have been doing here at Stout for more than 30 years is “quality”.

An administrative respondent felt that:

[The award is a] reaffirmation of the processes and work completed at Stout.

3. Positive Exposure/Marketing Opportunities

Responses provided by faculty and staff/support staff participants included 45 segments of text centering on the theme: “The award generates positive exposure/marketing opportunities for the university.” One staff/support staff participant reported that:

The winning of this award is a positive; UW Stout offers a unique hands-on learning experience that several other universities are looking at.

Another staff/support staff participant stated:

The university [is] receiving positive comments from the external public re: the award.

One Staff/Support Staff participant felt that:

Winning the award helps differentiate [UW Stout] from other UW System schools.

4. Conduit For Continuous Improvement

Among the responses provided by the faculty and staff/support staff participants, 30 segments of text could be organized around the theme: “A conduit for continuous improvement has been created.” A faculty participant stated that:

There is a continued effort to improve the quality of the university. The effort did not just end after [the university] won the Baldrige Award. Focus 2010 is the newest effort to democratically improve the campus and education.

Another faculty participant reported:

The award made us look more closely at the various processes on campus to make sure all stakeholders are involved.

A staff/support staff participant stated that:

There is an [ongoing] effort to gather and analyze data pertaining to the university's mission/goals.

Another staff/support staff participant made this statement:

[The university] is now [placing] a greater emphasis on accountability for improvements at all levels of the university as well as performance evaluations.

5. Increase in Communication

Positive responses provided by the faculty participants included 11 segments of text that could be categorized as: "There is an increase in communication with and among stakeholders of the university". A faculty participant stated:

There is improved communication between the administration and staff [members].

Another faculty participant felt that:

The administration reports regularly about matters of concern to faculty and staff [members], especially [concerning] budget matters.

Negative Outcomes

Two hundred eighty one negative outcome statements were recorded from the participants' responses to the open-ended question. Administrative participants provided 37

statements, faculty provided 97 statements, and staff/support staff provided 147 statements.

While all three groups provided negative statements, they did not necessarily provide input into all nine of the negative themes.

The following findings reflect nine common negative themes that emerged: (1) Perceived Opportunity Costs, (2) Education/Training Needs, (3) A Lack of Continuous Improvement, (4) Increased Workload, (5) Disconnect Between the Award and the University Mission, (6) Campus Climate, (7) Increased Quality Expectations, (8) Decisions Being Made Without Following the Baldrige Model, and (9) Insufficient Employee Recognition. Presented next are examples of answers respondents provided to the second open-ended question that help defined the various themes.

1. Perceived Opportunity Costs

In responses provided by all three groups of participants, 61 segments of text aligned with the theme: “There is a lack of perceived value of the award.” One administrative participant felt:

There is an imbalance at times [between] the focus on measurable outcomes [versus] less tangible human/interpersonal/subjective [outcomes].

A faculty participant indicated:

There has been more attention [paid] to a business model of governance and less [attention to] instructional activities/priorities.

A staff/support staff participant commented:

Top [administrative] energies have gone toward Baldrige presentations, book writing, etc., [which has] taken focus off issues that need to be addressed on campus.

2. Education/Training Needs

Responses provided by all three groups of participants included 36 segments of text that could be organized around the theme: “Education/ training related to the awards significance is needed at all levels of the university.” One administrative participant felt:

Some concepts associated with the award have not [permeated] down far enough [throughout] the [university].

A faculty participant stated:

Knowledge of the [university] staff, students, and community toward the award is limited as to its meaning.

A staff/support staff participant reported:

You hear a lot of people talking about the university winning the award... but not a lot about what it meant for the university [to win the award].

3. Lack of Continuous Improvement

Negative responses provided by the administrative and staff/support staff participants included 21 segments of text that could be categorized as: “There is a lack of continuous improvement within areas of the university.” One staff/support staff participant reported:

If [the university is] really doing what we say, then why is the university not actively working on continuous improvement such as reducing waste, reducing cost of tuition, and implementing spending controls.

An administrative participant stated:

Everyone thinks we are perfect when, in fact, we have many areas in need of improvement. We are more focused on promoting, [rather than] continuing to improve.

4. Increased Workload

In responses provided by the administrative and staff/support staff participants, 11 segments of text appeared to center on the theme: “The award has increased the workload we must carry.” One administrator felt:

The benchmarking and measurements efforts generate additional workload on already inadequate administrative resources.

A staff/support staff member stated:

The award has created more travel and work for the chancellor and top administrators.

5. Disconnect Between the Award and the University Mission

Responses provided the faculty participants included 9 segments of text that could be categorized as: “There is a feeling of disconnect between the award and the university mission.”

One faculty participant stated:

[There is an] increased emphasis on emulating a business model with little regard for the purpose and scope of higher education.

Another faculty participant felt:

The administration cares less about education and meeting the student needs and more about efficiency and technology.

6. Campus Climate

Among responses provided by the faculty participants, 21 segments of text could be organized around the theme: “The campus climate is more administratively focused.” One faculty participant noted:

The award suggests an inclusive management system, when in fact the chancellor makes decisions from the top. [This occurs] often with very little input from the faculty and staff prior to [the] decisions [being made].

A second faculty participant stated:

There is even less atmosphere of trust now between administration and employees. The administration is vengeful and remembers [perceived past trespasses].

7. Increased Quality Expectations

In responses provided by the administrative participants, 5 segments centered on the theme: “The award has increased the expectation of quality levels from the stakeholders.”

One administrative participant stated:

There is an expectation that there will be a dramatic change, which is not necessarily reality. I think we continue to gather the data, evaluate it, benchmark, etc., but to make changes within the system (State of Wisconsin University System) is too time consuming and cumbersome. We cannot and are not allowed to change as fast as our market and students/staff need change.

Another administrative participant felt:

[Administrators are] being held to a higher standard [than] the one that helped win the award.

8. Decisions Made Without Following the Baldrige Model

Responses provided by the administrative participants included 6 segments of text that could be categorized as: “Decisions are being made without following the Malcolm Baldrige Model.”

One administrative participant stated:

Sometimes [decisions are being made] without consideration of the Baldrige Model.

Another administrative participant felt:

Not all decisions are based on data. Choices and priorities come out of upper administration [but] are implemented without data to support [them].

9. Sufficient Employee Recognition

In responses provided by the staff/ support participants, 12 segments of text centering on the theme that “there is a lack of sufficient employee recognition of efforts made in making the university a Baldrige Award level university” were identified. One staff/support staff participant stated:

Some people feel they have been used in the process of acquiring the award. [They feel as though they are] forgotten slices [of the university].

Another staff/support staff participant felt:

The visibility of administrators makes it clear they are running the show when there are many, many support staff not recognized for making their administrators look good.

Yet another staff/support staff participant noted:

Not [all] the right people [are getting thanked] for [their] help with winning the award; classified staff, workers, and little people [do not get sufficient credit].

Research Question Two

Research Question Two focused on possible differences in the perceptions of administrators, faculty, and staff/support staff as a function of years of work experience in business or industry in the implementation of MBNQA Educational criteria at UW Stout. Due to the range of work experience data provided by the respondents, data was organized into five categories.

Group One included 31 respondents (15%) with 1 month to 2 years/11 months of full-time employment in business or industry prior to full-time employment with the university. Group Two represented 31 respondents (15%) with 3 years to 6 years/11 months of full-time employment in business or industry prior to full time employment with the university. Group Three represented 38 respondents (19%) with 7 years to 11 years/11 months of prior service in business or industry. Group Four represented 33 (17%) respondents with 12 to 37 years of prior service to business or industry. Group Five represented 68 (34%) respondents who had no previous full-time work experience prior to being employed by the university.

The independent variables were position (administrator, faculty, and staff/support staff) and length of prior service in business or industry prior to employment at UW Stout. The dependent variables were the seven categories from the instrument (leadership; strategic planning; student, stakeholder, and market focus; information and analysis; faculty-staff focus; process management and organizational performance results). Information regarding the frequencies and percentages of participants' work experience in business or industry is presented in Table 4-13. A MANOVA was conducted with position (administration, faculty, staff/support staff) and length of service in business or industry as the independent variables, and categories one through seven from Part-B of the instrument as the dependent variables. The results are reported in Table 4-14. The results of the MANOVA analysis for Research Question Two indicated that there were no significant differences found at the alpha level of .05.

Table 4-13

Frequencies & Percentages of Participants Work Experience in Business or Industry

Group	Frequency	Percentages
One	31	15
Two	31	15
Three	38	19
Four	33	17
Five	68	34

Note. Totals based on 201 respondents

Table 4-14

Multivariate Analysis of Variance for Length of Service in Business or Industry & Position at UW Stout

Multivariate Test of Significance				
Effect	Value	Approximate <i>F</i>	Hyp. <i>df</i>	Error <i>df</i>
Position (A)	.85	2.14	14	360
Employed in (B)	.86	.98	28	650
Business or Industry				
AxB	.71	1.15	56	974.64

Note: Position variables are administrator, faculty, and staff/support staff

Employment in Business or Industry variables are Groups 1, 2, 3, 4, and 5

**p* < .05

Research Question Three

For Research Question Three, the responses were organized into four groups. Group One represented 48 respondents (24%) with a length of service to the university from 3 months to 3 years/11 months. The second group consisted of 46 respondents (23%) with service lengths from 4 years to 9 years/11 months. The third group’s service length ranged from 10 years to 19 years/11 months with 57 respondents (28%) belonging to this group. The fourth group consisted of 50 respondents (25%) and the length of service was from 20 years to 37 years/11 months.

Table 4-15 presents the frequencies and percentages of participants’ length of service to the university. Table 4-16 reports the results of the MANOVA, which was conducted with position (administration, faculty, staff/support staff) and length of service to the university as the two independent variables, and categories one through seven (leadership, strategic planning, student, stakeholder, and market focus, information and analysis, faculty-staff focus, process management, and organizational performance results) as the dependent variables. The results of the MANOVA analysis for Research Question Three indicated no significant differences at the alpha level of .05.

Table 4-15.

Frequencies & Percentages of Participants Length of Service to UW Stout

Group	Frequency	Percentages
One	48	24
Two	46	23
Three	57	28
Four	50	25

Note. Totals based on 201 respondents

Table 4-16

Multivariate Analysis of Variance for Length of Service & Position at UW Stout

Effect	Multivariate Test of Significance			
	Value	Approximate <i>F</i>	Hyp. <i>df</i>	Error <i>df</i>
Service Length (A)	.85	1.51	21	526
Position(B)	.86	2.01	14	366
Business or Industry				
AxB	.75	1.29	42	861.80

Note. Service length variable is groups 1, 2, 3, and 4

Position variables are administrator, faculty, and staff/support staff

* $p < .05$

Summary

This study took advantage of a mixed method design, in which both qualitative and quantitative questions were used to collect data from administrators, faculty, and staff/support staff regarding the implementation of the Malcolm Baldrige National Quality Award (MBNQA) Education Criteria at UW Stout.

An examination of the quantitative data was conducted via ANOVA analyses to answer Research Question One. The ANOVA analyses revealed significant differences in participants perceptions for categories one, two, four, and seven. Tukey Post- Hoc Tests were conducted to determine where significance existed for Category One (*leadership*) the Post-Hoc test indicated that the administrative participants had a significantly more positive perception than staff/support staff participants. Moreover, the Post-Hoc test for Category Two (*strategic planning*) revealed that administrative participants had a significantly more positive perception than the faculty and

staff/support staff participants. Category Four (*information and analysis*) Post-Hoc test results revealed administrative participants had a significantly more positive perception than staff/support staff participants. The Post-Hoc test for Category Seven (*organizational performance*) indicated that administrative participants had a significantly more positive perception than faculty and staff/support staff participants. An analysis of the qualitative data resulted in identification of five positive themes and nine negative themes.

A MANOVA was conducted with respect to Research Question Two. The resulting analysis showed no significant differences. Similarly, a MANOVA was conducted for Research Question Three, and the analysis also showed no significant differences. Chapter Five discusses the implications of these results. In addition, explanations for these findings and suggestions for future research are provided.

CHAPTER V

Summary of The Study, Conclusions & Discussion, and Recommendations

This chapter provides a summary of the research study including the study's purpose and research questions, procedures, and findings. This is followed by a presentation of the conclusions and discussion and recommendations for further research and practice.

Summary of The Study

“America is without doubt, in the midst of a quality revolution—a period of change affecting every type of business, enterprise, organization and person” (Oakland, 1989, p. x). This alarming trend has been documented by other leading authors as well over the past 15 years, such as Hendrick Smith (1995) and Tom Peters (1992, 2003). To this same extent, institutions of higher education are in the midst of their own quality revolution. Institutions of higher education have come under increased societal and governmental pressures to demonstrate their value and quality (Pounder, 1999b; Aly & Akpovie, 2001). Since the late 1970s, numerous national studies conducted by both private and public organizations have suggested various reform measures for higher education (Finch & Crunkilton, 1993). Given the tightening of federal, state and local government budgets and dwindling individual grants and gifts to institutions, American colleges and universities have been forced to become more attentive and determined in their objective of providing quality education at a lower cost. Thus, many experts agree that educational establishments must effectively pursue the cultivation and nurturing of quality within all segments of the educational system (Parnell, 1985; Spanbauer, 1987). Moreover, it is becoming patently evident that many of the quality-inducing practices that have been shown to be successful in the business setting may also find a nurturing home on American college campuses (Deming, 1986; Owens, 1989; Spanbauer, 1987).

Quality theorists such as Crosby, Deming, and Juran voiced some of the most profound and revolutionary ideas about quality in today's business world. One such technique that emerged from these theorists is Total Quality Management (TQM). The use of TQM as a management and planning tool has gained widespread acceptance in the business world. And as previously discussed, one of America's most powerful catalysts for the pursuit of improved quality has been the MBNQA.

The Baldrige Award has provided thousands of U.S. organizations with the necessary implementation framework, as well as opportunity, to assess and improve their performance on critical factors that drive success. The award's *Criteria for Performance Excellence* establishes a specific framework for integrating total quality principles and practices into any organization. In 1999, the scope of the MBNQA was extended to academia, and in 2001 the University of Wisconsin Stout (UW Stout), one of 13 publicly supported universities in the University of Wisconsin System, was the first Baldrige Award recipient in higher education. Although much has been reported in the trade literature regarding successes and failures associated with implementing TQM and the Malcolm Baldrige Award criteria, limited empirical evidence exists to substantiate these reports since Newall and Dale first investigated this topic in 1990.

Purpose and Research Questions

The purpose of this research was to investigate UW Stout's implementation of MBNQA criteria, focusing on the perceptions of the university's administrators, faculty, and staff/support staff regarding its efficacy. The research design for this study used qualitative and quantitative research methodologies. This design took advantage of the benefits of qualitative research (increased comprehensiveness and data vividness), as well as the advantages of quantitative research (statistically measurable results).

The following three research questions that guided this study primarily used Quantitative methodology and focused on implementing the MBNQA Educational criteria at UW Stout:

1. What differences exist in the perceptions of administrators, faculty, and staff/support staff concerning how well the university implemented the MBNQA criteria?
2. What differences exist in the perceptions of administrators, faculty, and staff/support staff based on their work experience in business and industry concerning how well the university implemented the MBNQA criteria?
3. What differences exist in the perceptions of administrators, faculty, and staff/support staff based on their years of service to the university concerning how well the university implemented the MBNQA criteria?

Research Procedures

A survey questionnaire containing both qualitative and quantitative questions was used to gather perceptions data from UW Stout administrators, faculty, and staff/support staff. The qualitative portion of the instrument took advantage of open-ended response questions, while the quantitative portion used a five-point Likert-type scale for the respondents to record their answers.

Three distinct survey groups at UW Stout were targeted (administrators, faculty, and staff/support staff) because they represented a stratified random sample and met the conditions stated in study purpose. The primary selection criterion for participation was being employed full time (30 hours or more a week) at the university for at least 90 days. After assigning a number to each member of the population a random number generator was used to select the proportionally stratified sample of 282 participants.

The instrument was designed to gather data from each of the seven categories of the Malcolm Baldrige National Quality Award criteria. Specific survey items were developed within

the framework of the 2001 Education Criteria for Performance Excellence (NIST, 2001). The seven categories were: (a) leadership, (b) strategic planning, (c) student/stakeholder/market focus, (d) information and analysis, (e) faculty and staff focus, (f) process management, and (g) organizational performance results.

The instrument contained 31 items that corresponded to the seven categories of the MBNQA. The first 3 items were related to demographic data (position, length of employment/involvement, and previous employment in business or industry). Items 4 through 26 were related to quality and used a 5-point Likert-type scale. The last two items on the survey instrument were open-ended questions related to the perceived positive and negative outcomes of UW Stout's attempt to improve quality and to win the MBNQA.

A pilot test was conducted with 15 UW Stout administrators, faculty, and staff/support staff members. Pilot-test participants were not included in the study, but were similar in characteristics to the sample group. Upon receipt of the responses from the pilot-test participants, the researcher made minor editorial changes to the instrument so content and directions were clear.

The researcher distributed the instruments via intercampus mail at UW Stout in the Fall of 2003. Non-respondents were contacted after ten days to stress the importance of their participation and to solicit their involvement. If a non-respondent failed to return the instrument within one week after the contact, an alternate participant was selected from the list and delivered a copy of the original packet. There was a total of 10 alternative participants used in this study. A return rate was calculated for each of the three groups, with administration returning 100%, faculty returning 69%, and staff/support staff returning 67% (for an overall

return rate of 71%). Instrument reliability, which was calculated using data from returned instruments, revealed a Cronbach's Alpha value of .96.

Each questionnaire was coded for identification purposes. Responses for each questionnaire were entered into a personal computer using SPSS 12.0. The quantitative data was analyzed by frequency distribution, percentages, means, analysis of variance (ANOVA), and multivariate analysis of variance (MANOVA). The alpha level for analysis was set at the .05 level. Qualitative data collected via the open-ended questions was analyzed using content analysis. This process aided in organizing respondent statements into meaningful themes.

Findings

Research Question One

What differences exist in the perceptions of administrators, faculty, and staff/support staff concerning how well the university implemented the MBNQA criteria?

Research question one primarily used Quantitative methodology and focused on implementing the MBNQA Educational criteria at UW Stout and included two areas of analysis. The first part of the analysis consisted of examining quantitative data from the instrument. The second part of the analysis involved examining the two qualitative questions to determine positive and negative outcomes associated with winning the MBNQA.

An ANOVA was conducted with position (administration, faculty, staff/support staff) as the independent variable, and the seven categories the MBNQA as the dependent variables. A Tukey post-hoc test was conducted on each category to determine significance. The ANOVA and Post-Hoc results are as follows:

Category One (*leadership*): Significance was found. The post-hoc test results indicated that administrative participants had a significantly more positive perception than staff/support staff participants.

Category Two (*strategic planning & deployment*): Significance was found. The post-hoc results indicated that administrative participants had a significantly more positive perception than that of both faculty and staff/support staff participants.

Category Three (*student, stakeholder and market focus*): No significance was found.

Category Four (*information and analysis*): Significance was found. Post-hoc test results indicated that administrative participants had a significantly more positive perception than staff/support staff participants.

Category Five (*faculty and staff focus*): No significance was found.

Category Six (*process management*): No significance was found.

Category Seven (*organizational performance results*): Significance was found. Post-hoc test results indicated that administrative participants had a significantly more positive perception than both faculty and staff/support staff participants.

The two open-ended questions generated a total of 336 positive outcome statements and 287 negative outcome statements. Based on a content analysis of the positive outcome statements, five distinct themes emerged: (1) Recognition as a Center of Excellence, (2) Pride in Affiliation, (3) Positive Exposure/Marketing Opportunities, (4) Conduit for Continuous Improvement, and (5) Increased Communication.

A content analysis of the 281 negative outcome statements revealed the following nine themes: (1) Perceived Opportunity Costs, (2) Education/Training Needs, (3) A Lack of Continuous Improvement, (4) Increased Workload, (5) Disconnect Between the Award and the

University Mission, (6) Campus Climate, (7) Increased Quality Expectations, (8) Decisions Being Made Without Following the Baldrige Model, and (9) Insufficient Employee Recognition.

Research Question Two

What differences exist in the perceptions of administrators, faculty, and staff/support staff based on their work experience in business and industry concerning how well the university implemented the MBNQA criteria?

Research question two was concerned with implementing the MBNQA Educational criteria at UW Stout and primarily used Quantitative methodology. Of the 201 questionnaires returned, 132 of the respondents stated that they had been employed in business or industry for a mean of 9 years and 3 months prior to being employed by UW Stout. Responses were organized into five categories and a MANOVA was conducted using (a) position (administrator, faculty, staff/support staff) and (b) length of prior service in business or industry prior to employment at UW Stout (Categories 1,2, 3, 4, and 5) as the independent variables. Dependent variables included the seven MBNQA categories. Results of the MANOVA indicated no significant differences.

Research Question Three

What differences exist in the perceptions of administrators, faculty, and staff/support staff based on their years of service to the university concerning how well the university implemented the MBNQA criteria?

Research question three primarily used Quantitative methodology and focused on implementing the MBNQA Educational criteria at UW Stout. A MANOVA was conducted with position (administration, faculty, staff/support staff) and length of service to the university

(Categories 1, 2, 3, and 4) as the independent variables. Dependent variables included the seven MBNQA categories. Results of the MANOVA indicated no significant differences.

Conclusions & Discussion

Conclusions

Based on the study findings of this study several conclusions can be derived. For Category One (leadership), administrative participants were found to have a significantly more positive perception as compared to staff/support staff participants. These results correspond with Deming's (1989) belief that to be an effective leader, one needs to successfully manage any ambiguity that arises out of change in order help an organization thrive. This result also concurs with Morgan's (1988) view that managers and leaders must be proactive about an organization's future and anticipate forthcoming changes. With regard to the UW Stout outcomes, one possible explanation for this difference in perception may be reflected in an *us* (faculty/staff/support staff) versus *them* (administration) campus culture. This sentiment was also expressed in participants' responses to the open-ended questions. As one faculty member stated, "There are increased divisions of administrators and faculty (us versus them)."

For Category Two (strategic planning and deployment), administrative participants had a significantly more positive perception than both faculty and staff/support staff participants. One probable explanation offered for this difference in perception may be found in the MBNQA feedback report prepared by the Baldrige Award Visiting Team. It indicated that "Although UW Stout ensures alignment of human resource plans for hiring and training through the approval process, a systematic process to integrate these plans across the university are not in place. Plans to support the universities strategic goals are developed separately within programs and colleges with no mechanism to integrate these plans" (MBNQA Feedback Report, 2001, p. 16).

The results for Category Four (information and analysis) indicated that UW Stout's administrative participants had a significantly more positive perception than staff/support staff participants. A possible reason for this difference is also mentioned in the MBNQA Feedback Report, which stated: "Below the Chancellors Advisory Committee, there is no systematic method for selecting and aligning measures/indicators for tracking daily operations. In several departments, there are goals but not performance measures, or the department review measures that do not relate to department goals"(MBNQA Feedback Report, 2001, p. 24).

Results for Category Seven (organizational performance) revealed that administrative participants had a significantly more positive perception than the faculty and staff/support staff participants. One possible explanation for this difference can be found in the MBNQA feedback report that indicated:

Overall employee satisfaction/morale trends are flat for "moral at a high level" for faculty and staff as demonstrated by scores of 3.16 in 1994 on a five-point scale and 3.48 in both 1999 and 2001 results. Additionally, faculty and staff show an unfavorable trend for "my opinions are valued" for three years reported from scores of 3.38 in 1994 and 3.61 in 1999 and 3.29 in 2001. New 2001 segmentation of women and minority results indicate a score of 3.26 and 3.06, respectively, which are lower than overall faculty and staff.

(MBNQA Feedback Report, 2001, p. 42).

Discussion

Content analysis of the qualitative data from the two open-ended questions in Part C of the survey revealed the emergence of three distinctive themes, which appear to be related to the quantitative data. These three themes were: (1) Campus Climate, (2) Education/Training Needs, and (3) Lack of Continuous Improvement.

The *Campus Climate* theme can be linked to the Baldrige category of *Leadership*, which in turn is related to one of Deming's critical points, *Drive Out Fear* (#8). Evans and Lindsay (1999) expand on Deming's work by describing the various types of fear that can inhibit an organization's effectiveness: fear of reprisal, fear of the unknown, fear of failure, and fear of relinquishing control. The fear of reprisal was, observed in an analysis of this study's quantitative data, and was echoed in the MBNQA feedback report, which noted, "Although currently there are no ethical issues of concern, efforts to preserve an ethical environment are not well integrated by leadership. Employees, particularly classified staff, are unaware of ethical guidelines for behavior and how to access those guidelines" (MBNQA Feedback Report, 2001, p. 13).

The theme *Education/Training Needs* falls under Deming's Point #6 (*Institute Training*). As Evans and Lindsay (1999, p. 88) stated, "all employees should be trained in statistical tools for quality problem solving." The need for this specific type of training was mentioned in the analysis of the administrators' responses to the open-ended questions. And as Evan and Lindsay (1999, p. 88) continued, "not only does training result in improvements in quality and productivity, but it adds to workers morale, and demonstrates to workers that the company is dedicated to helping them and investing in their future. In addition, training reduces barriers between workers and supervisors, giving both more incentive to improve further."

An analysis of the UW Stout responses indicated that all three of the survey groups felt training and development was needed in several areas, including what the award meant to the university and how it should most effectively impact its training mission. Along these lines, the MBNQA Feedback Report (2001) specified three opportunities for improvement in the training and development of faculty and staff. The feedback report cited the following three areas:

1. Although UW Stout provides training in a variety of areas, there is limited faculty and staff training in performance measurement/improvement and leadership/supervision. Additionally, there is limited leadership/supervisory training provided to supervisory staff other than the Administrative Leadership Team.
2. Training evaluations are limited to participant satisfaction surveys and some knowledge and skill testing. UW Stout does not systematically evaluate training effectiveness for individual achievement and organizational performance.
3. Although professional development needs related to the laptop initiative are addressed to an integrated approach to learning across the university, this process is not fully deployed. In most cases, professional development needs are identified, and programs to meet those needs are developed and implemented by each individual college or department (MBNQA Feedback Report, 2001, p. 29-30)

The *Lack of Continuous Improvement* theme pertains to Deming's fifth point (*Improve Constantly and Forever*). As noted earlier in this report, Japan's success in the area of quality assurance was, and continues to be due primarily to continuous incremental improvements (Evans and Lindsay, 1999). With regard to the UW Stout study, however, it did not appear from analysis of participants' perceptions that the university had continued to make continuous improvements. The MBNQA Feedback Report cited many areas where incremental improvements could be made – especially with regard to faculty and staff. Unfortunately, no comparison data was available for several areas that would be of importance to the university such as overall satisfaction; faculty/staff ratings of leadership, staff moral, employee satisfaction, harassment and discrimination ratings; satisfaction with professional development; human resources effectiveness; and number of worker compensation claims.

Recommendations for Further Research

Based on the results of this study, the following recommendations for future research are suggested.

Results indicate that UW Stout administrative personnel had a notably more positive perception of the implementation of the seven MBNQA categories than did their faculty and staff/support staff counterparts. Based on these findings it is recommended that this study be replicated at similar institutions, such as those that UW Stout identified in their MBNQA Application as having similar curriculum and/or missions. Such a study could determine if the results could be extrapolated to other like-institutions or were specific only to UW Stout. These research activities might also lead to a better understanding of how differences in employees' perceptions impact continuous improvement/TQM efforts, and thus could provide viable professional development opportunities for administrators, faculty, and staff/support staff.

A second recommendation for further research would be to conduct a two-year post award longitudinal case study at a similar MBNQA college or university utilizing the same three participant cohorts. Specifically, such a study could examine the time intervals between decisions to engage in TQM related practices, the length of time required for said practices to be implemented, the ultimate acceptance of the practices, and to see if the winners continue their winning ways of constant improvement. This would be a beneficial contribution to the existing literature on change, and more specifically, to change theory in the higher education arena. It would also determine if the award winners continue to improve after they have won the award.

Recommendations for Practice

Institutions of higher education who wish to implement a quality program based on TQM should consider the following recommendations, which are based on results of the current study.

When implementing TQM related management practices, it is vital to keep all stakeholders informed and involved in the process, thereby creating a sense of ownership and shared responsibility. Not only is it important to get all stakeholders involved at the outset, but it is also imperative they continue to be involved throughout the entire process. For example, when an institution of higher education wins an award such as the MBNQA, all stakeholders should be encouraged to clearly communicate both the drawbacks and the benefits associated with obtaining the award. Stakeholder input could reduce any feelings of animosity toward the group of individuals that have been selected to communicate the outcomes of the experience.

The results of this study could also be useful in developing leadership programs for appropriate university personnel. When these personnel learn the value of ongoing data collection and assessment to assist in decision-making processes, a more collegial atmosphere of trust should develop. This atmosphere of trust could encourage continuous improvement, and recognize the expertise that employees have acquired on the job. This expertise combined with decisions based on data may lead to the establishment of best practice. For example, exposure to TQM and Baldrige Award criteria could help educational leaders improve campus-wide morale, create a more cohesive campus environment, and thus enhance personal job performance.

A third recommendation for practice that an institution should consider is the availability of continuing education and training opportunities for all campus employees. Several responses to the open-ended questions from each of the participant groups indicated that advanced training opportunities would be both welcomed and utilized. When an institution strives to ensure the availability of training and education for its employees, it enhances its own quality. Such opportunities should be designed to provide every employee with opportunities to acquire the

knowledge and skills needed to assist or adapt to changes or innovations that are brought forth by continued improvement.

REFERENCES

- Aly, N, and Akpovi, J. (2001). Total quality management in California public higher education. *Quality Assurance in Education* 9 (3) 127-131.
- Amaratunga, D., Baldry, D., Sarshar, M., & Newton, R. (2002). Quantitative and qualitative research in the built environment: application of “mixed” research approach. *Work Study* 51(1) 17-31.
- American Association for Higher Education, (1994). *25 snapshots of a movement: Profiles of campus implementing CQI*. Washington, D.C. National Governors’ Association (AAHE).
- Argyris, C. (1982). How learning and reasoning processes affect organizational change. In P S. Goodman (Ed.). *Change in Organizations*. San Francisco: Jossey-Bass.
- Ashcroft, J. (1986). *Times for results: The governors’ 1991 report on education*. Washington, D.C.
- Association of American Colleges (1985). Integrity in the college curriculum: A report to the academic community: the findings and recommendations of the Project on Redefining the Meaning and Purpose of Baccalaureate Degrees. Washington D.C.: Author
- Astin, A. W. (1982). Why not try some new ways of measuring quality? *Education Record*, 63(2) 10-15.
- Astin, A. W. (1985). *Achieving educational excellence*. San Francisco: Jossey-Bass
- Avdjieva, M. & Wilson, M. (2002). Exploring the development of quality in higher education. *Managing Service Quality*, 12(6) 372-383
- Babbie, E. R. (1990). *Survey research methods*. Belmont, CA: Wadsworth

- Banister, S. (2001). *A Question of quality: The Malcolm Baldrige Criteria as applied to education*. Paper presented at the Annual Meeting of the American Educational Research Association. (ERIC Document Reproduction Service No, ED 452 268).
- Banta, T.W. (1988). *Implementing Outcomes Assessment: Promise and perils*. San Francisco: Jossey-Bass.
- Berger, L. A., Sikora, M. J., & Berger, D. C. (1994). *The change management handbook: A road map to corporate transformation*. New York: McGraw-Hill.
- Bogue, E. G., & Saunders, R. L. (1992). *The evidence for quality*. San Francisco: Jossey- Bass.
- Borg, W. R., & Gall, M. D. (1989). *Educational research: An introduction*. New York: Longman.
- Bowen, H. R. (1980). *The cost of higher education: How much do colleges and universities spend per student and how much should they spend?* San Francisco: Jossey-Bass.
- Boyer, E. L. (1987). *College: The undergraduate experience in America*. New York: Harper & Row.
- Bradley, L. H., (1993). *Total quality management for schools*. Lancaster, PA: Technomic Publishing.
- Bragg, D. D., & Reger IV, W. M. (2000). Toward more unified education: Academic and vocational integration in Illinois community colleges. *The Journal of Vocational Education Research*, 25(3) 237-273.
- Brewer, E. (2001). Mixed methods research design. In Farmer, E. I., & Rojewski, J. W. (Eds.), *Research Pathways: Writing Professional Papers, Theses, and Dissertations in Workforce Education*. (pp. 107-128). Lantham, MD: University Press of America.

- Brickman, L., & Rog, D. J. (1998). *Handbook of applied social research methods*. Thousand Oaks, CA: Sage.
- Brinbaum, R. (1988). *How college works*. San Francisco: Jossey-Bass.
- Brubacker, J. S., & Rudy, W. (1976). *Higher education in transition: An American history, 1636-1976*. New York: Harper & Row.
- Bryce, G. R. (1991). Quality management theories and their application. *Quality*, (30)1 15-19.
- Burnes, B. (1996). *Managing change: A strategic approach to organizational dynamics*. London: Pitman.
- Carnall, C. (1995). The third-generation MBA global reach and "local" service. *The Learning Organization* 2(2) 18.
- Carr, D. K., & Littman, I.D. (1991). *Excellence in government: Total quality management in the 1990's*. Arlington VA: Coopers & Lybrand.
- Cartin, T. J. (1993). *Principles and practices of TQM*. Milwaukee, WI: ASQC Quality Press
- Chaffee, E. & Sherr, L. (1992). *Quality: Transforming post-secondary education ASHE-ERIC higher education report No. 3*. Washington, D.C. (ERIC Document Reproduction Service No, ED 351 922).
- Chao, C. Y. & Dunger, J. C. (1996). A total quality management model for instructional supervision in vocational technical programs. *Journal of Industrial Teacher Education*, 33(4) 23-35.
- Chernay, G. (1990). *Accreditation and the role of the council on post-secondary accreditation*. Washington D.C. (ERIC Document Reproduction Service No, ED 317 148).
- Coats, L. E. (1990a). TQM on campus: Implementing total quality management in a university setting. *NACUBO Business Officer*, (33)11 26-41.

- Coats, L. E. (1990b). TQM at Oregon State University. *Journal of Quality and Participation*, 13(6) 90-101.
- Cook, T. D., & Reichardt, C. S. (1979). *Qualitative and quantitative methods in evaluation research*. Beverly Hills: Sage Publishing.
- Cornesky, R. A., Baker, R. B., Cavanugh, C., Etling, N., Lukert, M., McCool, S., & Mckay, B. M. in, A. Paul, C. Thomas, P. Wagner & J. R. Darling, (1992). *Using Deming to improve quality in colleges and universities*. Madison, WI: Magna.
- Cound, M. (1992). *A leader's journey to quality*. Milwaukee, WI: ASQC Quality Press
- Covey, S. R. (1989). *The seven habits of highly effective people*. New York: Simon and Schuster.
- Creswell, J. W. (1994). *Research design: Qualitative & quantitative approaches*. Thousand Oaks, CA: Sage.
- Crosby, P. B. (1979). *Quality is free*. New York: McGraw Hill.
- Crosby, P. B. (1984). *Quality without tears*. New York: McGraw-Hill.
- Cyert, R. M. (1993). "The Ivy Leaguers". In Dennis, E., and LaMay, C. L. (Ed.), *Higher education in the information age* (pp. 85 –97). New Brunswick, NJ: Transaction Publishers.
- Das, T.H. (1983). Qualitative research in organizational behavior. *Journal of Management Studies* 20(3) 311-318
- DeCosmo, R. D., Parker, J. S., & Heverly, M. A. (1991). Total quality management goes to community colleges. In L. A. Sherr, & D. J. Teeter (Eds.) *Total Quality Management in Higher Education. New Directions for Institutional Research, Number 71*. (pp. 27-37). San Francisco: Jossey-Bass.

- Deming, W. E. (1986). *Out of the crisis*. Cambridge, MA: MIT Center for Advanced Engineering Study.
- Deming, W. E. (1989, July). *Foundation for management of quality in the western world*. Paper presented at a meeting of the Institute of Management Science, Osaka, Japan.
- Deming, W. E. (1992). Does the Baldrige Award really work? [Letter to the editor]. *Harvard Business Review*, 70(1) 134.
- Denzin, N. K. (1978). *The research act: A theoretical introduction to sociological methods*. New York: McGraw-Hill.
- Dezin, N. (2001). Strategies of multiple triangulation. In Conrad, C., Haworth, J. G., & Lattuca, L. (Eds.), *Qualitative Research in Higher Education: Expanding Perspectives*. (pp. 327-342). Boston: Pearson Custom Publication.
- Dobyns, L., & Crawford-Mason, C. (1991). *Quality or else: The revolution in world business*. Boston: Houghton Mifflin.
- Durlabhi, S. G. and Fusilier, M. R. (1999). The empowered classroom: Applying TQM to college teaching. *Managing Service Quality*, 9(2) 110-115.
- Dye, R. K. (1991). Constancy of purpose for improvement of product and service In R. Miller (Ed.), *Applying the Deming Method to Higher Education: For More Effective Human Resource Management* (pp. 9-18). Washington, D.C.: The College and Personnel Association.
- Eckel, P., Green, M., & Hill, B. (2001). *Riding the Waves of Change: Insights from Transforming Institutions*. Washington D.C.: American Council on Education.

- Ely, M., Anzul, M., Friedman, T., Garner, D., & McCormack-Steinetz, A. (2001). Making the story. In Conrad, C., Haworth, J. G., & Lattuca, L. (Eds.), *Qualitative Research in Higher Education: Expanding Perspectives*. (pp. 669-684) Boston: Pearson Custom Publication.
- Evans, J. R. & Lindsay, W. M. (1999). *The management and control of quality*. Cincinnati, OH, South-Western College Publishing.
- Ewell, P. T. (1991). Assessment and TQM: In search of convergence. In L. A. Sheer & D. J. Teeter (Eds.), *Total Quality Management in Higher Education. New Directions for Institutional Research Number 71*. (pp.53-62). San Francisco: Jossey-Bass.
- Fain, J. P. (1991). Adopt a new philosophy. In R. Miller (Ed.), *Applying the Deming Method to Higher Education: For More Effective Human Resource Management* (pp. 19-28). Washington, D.C.: The College and Personnel Association.
- Farmer, E. I., and Rojewski, J. W. (2001). *Research pathways: Writing professional papers, theses, and dissertations in workforce education*. Lanham, MD: University Press of America.
- Feigenbaum, A. V. (1951). *Quality control: Principles, practice and administration: An industrial management tool for improving product quality and design and for reducing operating costs and losses*. New York: McGraw-Hill.
- Feigenbaum, A. V. (1983). *Total quality control*. New York: McGraw-Hill.
- Feigenbaum, A.V. (1994). Quality education and America's competitiveness. *Quality Progress*, 27(9) 83-84.
- Fellows, R., & Lui, A. (1997). *Research methods for construction*. Oxford: Blackwell Science Limited.

- Finch, C. R., & Crunkilton, J. R. (1993). *Curriculum development in vocational and technical education: planning, content, and implementation* (4th ed.). Boston: Allyn Bacon.
- Finch, C. R. (1999, August). *Designing VET curricula for the world-class workplace: Case studies of success*. Paper presented at the International Vocational Education and Training Association Conference, Sydney, Australia.
- Fink, A. (1995). *The survey kit*. Thousand Oaks, CA: Sage Publications.
- Fisher, J. (1993). TQM: A warning for higher education. *Education Record* 74(2) 15-19.
- Frazier, A. (1997). *A roadmap for quality transformation in education*. Boca Raton, FL.: St. Lucie Press.
- Freed, J. A., Klugman, M., & Fife J. D, (1994, November). *Total quality management on campus: Implementation, experiences and observations*. Paper presented at the annual meeting of the Association for The Study of Higher Education. Tucson, Arizona. (ERIC Document Reproduction Service No, ED 375 734).
- Foster, R. (1986). *Innovation: The attacker's advantage*: New York: Simon and Schuster.
- Gabor, A. (1990). *The man who discovered quality*. New York: Penguin.
- Garvin, D. A. (1998). *Managing quality: the strategic and competitive advantage*. New York: Free Press.
- Glover, M. K. (1989). Malcolm Baldrige National Quality Award: The quest for excellence. *Business America*, 110(23) 2-3.
- Goddard, R. W. (1989). Workforce 2000. *Personnel Journal*, 68(2) 65-71.
- Goodman, P. (1982). *Change in organizations: A new perspectives on theory, research and practice*. San Francisco: Jossey-Bass.

- Green, M. F. (1988). Towards a new leadership model. In M. F. Green (Ed.) *Leaders for a New Era: Strategies for Higher Education* (pp. 30-52). New York: Macmillian.
- Green, J. (1993). TQM and Accreditation. *TQM in Higher Education*, 2(1) 8.
- Hamel, J. (1993). *Case Study Methods. Qualitative Research Methods*. Thousand Oaks, CA: Sage.
- Harris, J., Hillenmeyer, S., & Foran, J. V. (1989). *Quality assurance for private career schools*. Washington, D.C.: The Association of Independent Colleges and Schools.
- Hart, C. W., & Bogen, C. E. (1992). *The Baldrige*. New York: McGraw-Hill.
- Heady, S. C. (1991). Cease dependency on mass inspection. In R. Miller (Ed.), *Applying the Deming Method to Higher Education: For More Effective Human Resource Management* (pp. 29-36). Washington, D.C.: The College and Personnel Association.
- Hersey, P., & Blanchard, K. (1982). *Management of Organizational Behavior: Utilizing Human Resources*, New Jersey: Prentice Hall.
- Hertz, H. S. (1999). *Education criteria for performance excellence*. Gaithersburg, MD: United States Department of Commerce.
- Hertz, H. S. (2000). Open letter to the U.S. Education Community from the Director of the Baldrige National Quality Program. Gaithersburg, MD: United States Department of Commerce.
- Hewburgh, T. M. (1988). Academic leadership. In J.L. Fisher & M.W. Tack (Eds.) *Leadership: The College Presidency. New Directions for Higher Education* (pp. 5-8). San Francisco: Jossey - Bass.

- Hogan, T. J. (1991). End the practice of awarding business on price tag alone. In R. Miller (Ed.), *Applying the Deming Method to Higher Education: For More Effective Human Resource Management* (pp. 37-48). Washington, D.C.: The College and Personnel Association.
- Houston, P. (1990). Dubious achievement? *Business Month*, 136(1) 40-44.
- Hughes, D. G. (1991). Improve the system of production and service. In R. Miller (Ed.), *Applying the Deming Method to Higher Education: For More Effective Human Resource Management* (pp. 49-56). Washington, D.C.: The College and Personnel Association.
- Hunt, L. L. (1991). Institute training. In R. Miller (Ed.), *Applying the Deming Method to Higher Education: For More Effective Human Resource Management* (pp. 57-64). Washington, D.C.: The College and Personnel Association.
- Isaac, S., & Michael, W. B. (1981). *Handbook in research and evaluation: a collection of principles, methods, and strategies useful in the planning, design, and evaluation of studies in education and the behavioral sciences*. San Diego, CA: EDITS Publishers.
- Juran, J. M. (1980). *Quality planning and analysis*. New York: McGraw-Hill.
- Juran, J. M. (1988). *Juran on planning for quality*. Cambridge, MA: Productivity Press.
- Juran, J. M. (1989). *Juran on Leadership for Quality*. New York: Free Press.
- Keller, G. (1992). Increasing quality on campus: what should college do about the TQM mania? *Change*, 24(3) 48-51.
- Kezar, A. (2000). Higher education research at the millennium: Still trees without fruit. *Review of Higher Education*, 23(4) 443-468.
- Khawas, E. (1993). *Campus trends 1993*. Washington, D.C.: American Council on Education.
- Kish, L. (1965). *Survey Sampling*. New York: Wiley.
- Klaus, L. A. (1996). Sixth quality in education listing. *Quality Progress*, 29(8) 29-82.

- Klippendorf, K. (1980). *Content analysis: An introduction to its methodology*. White Planes, NY: Longman.
- Leffel, L. G., Robinson, J. F., Harshberger, R. F., Krallman, J. D., Frary, R. B. (1991). Assessing the leadership culture at Virginia Tech. In L.A. Sheer & D. J. Teeter (Eds.), *Total Quality Management in Higher Education. New Directions for Institutional Research Number 71*. (pp.63-72). San Francisco: Jossey-Bass.
- Leslie, D., & Fretwell, F. K., (1996). *Wise moves in hard times: Creating and managing resilient colleges and universities*. San Francisco: Jossey-Bass.
- LeTarte, C. E. (1993). Seven tips for implementing TQM: A CEO's view from the trenches. *AACC Journal* 64(1) 17-21.
- Lewis, R. G., & Smith, D. H. (1994). *Total quality in higher education*: St. Lucie, FL: St. Lucie Press.
- Levy, A., & Merry, U. (1986). *Organizational transformation: Approaches, strategies, theories*. New York: Praeger.
- Losco, J & Fife, B. L. (2000). *Higher education in transition: the challenges of the new millennium*. Westport, CT: Bergin & Garvey.
- Lucier, G. E. (1992). The role of medical instructional resources in a three-year systems-based curriculum. *The Journal of Biocommunication* 19(1) 26-29.
- Lund, L., & Wild, C. (1993). *Ten years after A nation at risk*: New York: The Conference Board.
- Malcolm Baldrige National Quality Award (2001). UW Stout Feedback Report: Gaithersburg, MD: National Institute of Standards and Technology.
- Mangione, T. W. (1995). *Mail surveys: improving the quality*. Thousand Oaks, CA: Sage.
- Marchese, T. (1993). TQM: A time for ideas. *Change* 25(3) 10-13.

- Marshall, J. (1995). *Women managers moving on*. Routledge, London.
- Martuza, V. R. (1977). *Applying norm-referenced and criterion-referenced measurements in education*. Boston: Allyn & Bacon.
- Maslin, S. (1993). *Foundations of Perceptual Theory*. New York: Elsevier Science Publishers.
- May, D. K. (1991). Point ten: break down barriers between departments. In R. Miller (Ed.), *Applying the Deming Method to Higher Education: For More Effective Human Resource Management* (pp.83-90). Washington, D.C.: The College and Personnel Association.
- Mayhew, L. B., Ford, P. J., & Hubbard, D. L. (1990). *The quest for quality: The challenge for undergraduate education in the 1990s*. San Francisco: Jossey-Bass.
- Meiners, S. E. (1991). Point eleven: Eliminate slogans, exhortations, and target for the work force. In R. Miller (Ed.), *Applying the Deming Method to Higher Education: For More Effective Human Resource Management* (pp. 91-98). Washington, D.C.: The College and Personnel Association.
- Melissaratos, A., & Ardet, C. (1992). TQM can address higher ed's ills. *NACUBO Business Officer*, 26(4) 32-35.
- Merriam, S. B. (1998). *Qualitative research and case study applications in education: Revised and expanded from case study research in education*. San Francisco: Jossey-Bass.
- Michael, R. K., Sower V. E., and Motwani, J. (1997). A comprehensive model for implementing total quality management in higher education. *Benchmarking for Quality Management & Technology*, 4(2) 104-111.
- Midkiff, T. (1991). Point twelve: Eliminate numerical quotas. In R. Miller (Ed.), *Applying the Deming Method to Higher Education: For More Effective Human Resource Management* (pp. 99-104). Washington, D.C.: The College and Personnel Association.

- Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook: Journal of Environmental Psychology, 14(4) 330-336.*
- Miller, R. I. (1985). *The assessment of college performance.* San Francisco: Jossey-Bass
- Miller, R. I. (1990). *Major American higher education issues and challenges in the 1990's.* London: Jessica Kingsley Publishers.
- Miller, R. (1991). *Applying the Deming method to higher education: For more effective human resource management.* Washington, D.C.: The College and Personnel Association.
- Milkovich, M. E. (1991). Total quality management in the public sector. *National Productivity Review, 10(2) 195-213.*
- Mingle, J. R. (2000). Quality and the bottom line. *The Quality Management Forum, 26(4) 2-3,*
10
- Modic, S. J. (1988). What makes Deming run? *Industry Week, 236, 84-91.*
- Montero, M. (2002). On the construction of reality and truth: Towards the epistemology of community social psychology. *American Journal of Community Psychology 30(4) 571-584.*
- Morgan. G. (1988). *Riding the wave of change.* San Francisco: Jossey-Bass.
- Moser. J. P. (1991). Point fourteen: Take action to accomplish the transformation. In R. Miller (Ed.), *Applying the Deming Method to Higher Education: For More Effective Human Resource Management* (pp. 123-130). Washington, D. C.: The College and Personnel Association.
- National Alliance of Business (1990). *Business strategies that work: A planning guild for education restructuring.* Washington D.C.: Author.

- National Institute of Education (1984). *Involvement in learning: Realizing the potential of American higher education: final report of the Study Group on the Conditions of Excellence in American Higher Education*. Washington D.C.: Author.
- National Institute of Standards and Technology (2001). *2001 Education Criteria for performance Excellence: Malcolm Baldrige National Quality Award*. Gaithersburg, MD: Author.
(NIST)
- National Institute of Standards and Technology (1999), <http://www.nist.gov>
- Newman, F. (1987). Choosing quality. In E. G. Bogue & R.L. Saunders (Eds.), *The Evidence For Quality* (p. 211). San Francisco: Jossey-Bass.
- Oakland, J. S. (1989). *Total quality management*. New York: Nichols.
- Oblinger, D. & Rush, S. (1997). *The learning revolution: The challenge of information technology in academy*. Boston: Anker Publishing
- Olson, D. R. (1996). Quality trends: Seven trends of high-quality. *The Quality Observer* 5(3) 21-26, 41.
- Owens, M. (1989). *SPC and continuous improvement*. New York: Springer Verlag.
- Pannirselvam, G. P., Sifred, S. P., and Ruch, W. A. (1998). Validation of the Arizona Governor's Quality Award: A test of the Baldrige criteria. *Journal of Operations Management*, 16(5) 529-550.
- Parnell, D. (1985). *The neglected majority*. Washington, D.C.: Community College Press.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods*. Newbury Park, CA: Sage.
- Patton, R., & Demster, L. (2002). Managing change from a gender perspective, *European Management Journal* 20(5) 33-38.

- Pedhazur, E. J., & Schmelkin, L. P. (1991). *Measurement, design, & analysis: An integrated approach*. Hillsdale, NY: Lawrence Erlbaum Associates.
- Peters, T. J. (1992). *Liberation management: Necessary disorganization for the nanosecond nineties*. New York: Alfred A. Knopf
- Peters, T. J. (2003). *Re-imagine*. New York: Dorling Kindersley Limited
- Peterson, D. S. (1993). *Continuous quality assurance: Adapting TQM for community colleges*. Washington D. C.: American Association of Community Colleges (AACCC).
- Pines, E. (1990). From top secret to top priority: The story of TQM. *Aviation Week & Space Technology*, 38(20) 5-24.
- Pounder, J. S. (1999a). Institutional performance in higher education: Is quality a relevant concept?. *Quality Assurance in Education*, 7(3) 156-263.
- Pounder, J. S. (1999b). Organizational effectiveness in higher education: Managerial implications of a Hong Kong study. *Educational Management & Administration*, 27(3) 239-253.
- Powell, A. S. (1995). *TQM and environmental management*. New York: Conference Board
- Prinz, W., & Bridgeman, B. (1995). *Handbook of perception and action: Volume one: Perception*. San Diego: Academic Press Limited,
- Rajagopalan, N., & Spreitzer, G. M. (1996). Toward a theory of strategic change: A multi-lens perspective and integrated framework. *Academy of Management Review*, 22(1) 48-79.
- Rinehart, G. (1993). *Quality education*. Milwaukee: ASQC Press.
- Robinson, J. D., Poling, H. A., Akers, J. F., Galvin R. W., Artzt, E. L. & Allaire, P. A. (1991). An open letter: TQM on campus. *Harvard Business Review*, 69(6) 94-95.

- Rosander, A. C. (1989). *The quest for quality in services*. Milwaukee: ASQC Press.
- Russel, B.W. (1995). Perspectives from the president: Accountability, productivity, and Southwester's quest for quality. *Quality Quarterly*, 2(1) 1-8.
- Ryder, H. D., & Perabo, G. W. (1985). *The complex challenge of professional development: Current trends and future opportunities*. Princeton, NJ: Mid-Career Fellowship Program. (ERIC Document Reproduction Service No, ED 265 91).
- Salkind, N. J. (2000). *Statistics for People Who (Think They) Hate Statistics*. Thousand Oaks, CA: Sage.
- Sashkin, M., & Kiser, K. J. (1993). *Putting Total Quality Management to Work*. San Francisco: Berrett-Koehle.
- Schein, E. H. (1993). How can organizations learn faster? The challenge of entering the green room. *Sloan Management Review*, 34(2) 17-24.
- Schmidt, W. H., & Finnigan, J. P. (1992). *The race without a finish line*. San Francisco: Jossey-Bass.
- Schragel, F. (1993). Total quality in education. *Quality Progress*, 26(10) 67-69.
- Schwartz, R. (1990). The right tool for total quality. In G. Dixon, & J. Swiler (Eds.), *Total Quality Handbook* (pp. 5-22). Minneapolis: Lakewood.
- Senge, P. (1990). *The fifth discipline: The art and practice of the learning organization*. New York: Doubleday.
- Seymour, D. (1995). *The AQC Baldrige Report. Lessons learned by nine colleges and universities undertaking self-study with the Malcolm Baldrige National Quality Award*. American. Washington D.C.: Association of Higher Education (ERIC Document Reproduction Service No, ED 398 771).

- Seymour, D. T. (1992). *On Q: Causing Quality in Higher Education*. Phoenix AZ: American Council on Education. Oryx Press.
- Seymour, D. T. (1996). *Once Upon a Campus*. Phoenix AZ: American Council on Education. Oryx Press.
- Shalala, D. (1993, May). TQM applications in education. *Executive Excellence*, pp. 6-7.
- Sherr, L. A., & Tector, D. J. (1991). *Total quality management in higher education*. San Francisco: Jossey-Bass.
- Shonebarger, J. (1991). Point twelve: Remove barriers that rob people of pride of workmanship. In R. Miller (Ed.), *Applying the Deming Method to Higher Education: For More Effective Human Resource Management* (pp. 105-112). Washington, D.C.: The College and Personnel Association.
- Smith, H. (1995). *Rethinking America: Innovative strategies and partnerships in business and education*. New York: Avon Books
- Smith, L. G. (1991). Point eight: Drive out fear. In R. Miller (Ed.), *Applying the Deming Method to Higher Education: For More Effective Human Resource Management* (pp.75-82). Washington, D.C.: The College and Personnel Association.
- Spanbauer, S. J. (1987). *Quality first education: Why not?* Appleton, WI, Fox Valley Technical College Foundation.
- Spanbauer, S. J. (1989). *Measuring and costing quality in education*. Appleton, WI, Fox Valley Technical College Foundation.
- Steeple, M. M. (1993). *The corporate guild to the Malcolm Baldrige Award*. Milwaukee: American Society for Quality Control Press.

- Stevens, D., & McGuire, M. (1985). Unit record versus aggregate data perspectives on postsecondary education data collection, retention, and release: final report of the National Postsecondary Education Cooperative Working Group on Unit Record Data Versus Aggregate Data. Washington, D. C. : The Cooperative.
- Tuttle, T. C. (1994). Is total quality worth the effort? How do we know? in D. Seymour (Ed.) *Total Quality Management on Campus: Is it Worth Doing: New Directions in Higher Education* (pp. 21-32) San Francisco: Jossey-Bass.
- Wallin, D. L., & Ryan, J. R. (1994). *Essentialism: Common sense quality improvement*. Washington, D.C.: American Association of Community Colleges.
- Walton, M. (1986). *The Deming management method*. New York: Putnam.
- Winn, B. A., & Cameron, K.S. (1998). Organizational quality: An examination of the Baldrige National Quality Framework. *Research in Higher Education*, 39(5) 491-512.
- Young, K., Chambers, C., Kells, H., & Associates (1983). *Understanding accreditation: Contemporary perspectives on issues and practices in establishing educational quality*. San Francisco: Jossey-Bass.
- Yudof, M. G., & Busch-Vishniac, I. J. (1996). Total quality: Myth or management in universities?, *Change* 28(6) 19-27.
- Zemsky, R., & Stine, S. B. (1989). On starting a national colloquy. *Change*, 21(3) 7-9.
- Zemke, R. (1991, February) Bashing the Baldrige. *Training*, 28(2) 29-39.

Appendix A
Virginia Tech IRB Form

Appendix A

Virginia Tech IRB Form

Justification of Project

The purpose of this study is to examine the perceptions of Administrators, Staff/Support Staff, and Faculty of the University of Wisconsin Stout (UW Stout) to determine how well they feel the university implemented the Malcolm Baldrige Criteria for Educational Performance Excellence. The perceptions of the administrators, staff/support staff and faculty are unknown since UW Stout has won the Malcolm Baldrige National Quality Award in the Higher Education Division of the award.

The purpose for involving human subjects as part of this study is the need to determine what the perceptions of the administrators, faculty, and staff/ support staff are. If their perceptions regarding the implementation Malcolm Baldrige National Quality Award (MBNQA) is not known then, it is difficult to know how well the university has done in the employees' eyes as far as implementing the criteria. The theory that is being used in this study (change management) is grounded in the principle of continued measurement and feedback on the people, processes, and systems within the organization. Also, the data that will be obtained from the administrators, faculty and staff/ support staff will be used to triangulate the MBNQA feedback report. The triangulated results will then help establish a clear picture as to the level of implementation of the MBNQA criteria at UW Stout.

Procedures

The subject pool will consist of 282 full time faculty, administrators and the staff/support staff randomly selected from the UW Stout telephone directory, The subjects will be asked to respond to the survey honestly. The subjects will be surveyed one time and the survey is not

expected to last more than 20 minutes. The survey will be conducted on the campus of UW Stout and in a location convenient for the subject, be it their office, cafeteria, etc...

Risks and Benefits

The risks to the sample population are minimal and that, individuals other than the researcher and the researcher's committee members may determine their identity. All precautions will be utilized to minimize risk to the subjects. The university as a whole will derive the benefit, as upon completion of this study, they will have a benchmark on their employees' perception on how well they have implemented the MBNQA criteria.

Confidentiality/ Anonymity

The anonymity or confidentiality of the identify of each subject will be preserved though the assigning of a number to a survey to match a subject's name and a master list will be kept by the researcher of the numbers assigned to the subjects. After the completion of the study the surveys filled out by the subjects will be destroyed unless a subject requests their survey returned to them.

Informed Consent

See attachment

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent for Participants of Investigative Projects

Title of Project: The perceptions of the administrators, faculty and staff/support staff of the University of Wisconsin Stout 's implementation of the Malcolm Baldrige Award Criteria.

Investigator: Paul Dettmann

I. The purpose of this Research/Project

The purpose of this study is to examine the perceptions of Administrators, Staff/Support Staff, and Faculty of the University of Wisconsin Stout (UW Stout) to determine how well they feel the university implemented the Malcolm Baldrige Criteria for Educational Performance Excellence. The perceptions of the administrators, staff/ support staff and faculty are unknown since UW Stout has won the Malcolm Baldrige National Quality Award in the Higher Education Division of the award.

II. Procedures

The subjects will be asked to respond to the survey honestly. The subjects will be surveyed one time and the survey is not expected to last more than 20 minutes. The survey will be conducted on the campus of UW Stout and in a location convenient for the subject, be it their office, cafeteria, etc...

III. Risks

The risks to the sample population are minimal and that, individuals other than the researcher and the researcher's committee members may determine their identity. All precautions will be utilized to minimize risk to the subjects.

IV. Benefits of this Project

The intangible benefits of this study are that the university will have research data to expand its understanding of the success of the implementation of the Malcolm Baldrige National Quality Award Criteria. There is no promise or guarantee that the results of this study will be a direct benefit to the subject for his or her participation. All subjects may contact the researcher at a later time for a summary of the research results.

V. Extent of Anonymity and Confidentiality

The anonymity or confidentiality of the identify of each subject will be preserved though the assigning of a number to a survey to match a subject's name and a master list will be kept by the researcher of the numbers assigned to the subjects. After the completion of the study the surveys filled out by the subjects will be destroyed unless a subject requests their survey returned to them. At no time will the researcher release the results of the study to anyone other than individuals working on the study without your written consent. In some situations, it may be necessary for an investigator to break confidentiality. If child abuse is known or strongly suspected, investigators are required to notify the appropriate authorities. If a subject is believed to be a threat to himself/herself or others, the investigator should notify the appropriate authorities.

VI. Compensation

There will be no compensation provided to the subject for participation of this study.

VII. Freedom to Withdraw

Subjects are free to withdraw from a study any time without penalty. Subjects are free not to answer any questions or respond to experimental situation that they choose without penalty. There may be circumstances under which the investigator may determine that a subject should not continue as a subject.

VIII. Approval of Research

This research project has been approved, as required, by the Institutional Review Board for Research Involving Human Subjects at Virginia Polytechnic Institute and State University, by the Department of Teaching and Learning and the University of Wisconsin Stout.

IX. Subject's Responsibilities

I voluntarily agree to participate in this study. I have the following responsibilities:

1. Participate in the survey
3. Answer questions honestly

X. Subject's Permission

I have read and understand the informed consent and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent for participation in this project. If I participate, I may withdraw at any time without penalty. I agree to abide by the rules of this project.

Signature

Date

Should I have any questions about this research or its conduct, I may contact

Paul Dettmann

540-230-4518 or 715-235-9560

Investigator

Pdettman@vt.edu--Telephone/email

Dr. Kurt Eschenmann

540-951-2880/ eschmann@vt.edu

Faculty Advisor

Telephone/email

Dr. John Burton

540-231-5347/ jburton@vt.edu

Departmental Reviewer/Department Head

Telephone/e-mail

David M. Moore

540-231-4991/moored@vt.edu

Chair, IRB

Telephone/e-mail

Office of Research Compliance

Research & Graduate Studies

This Informed Consent is valid from October 1, 2003 to October 1, 2004.

Appendix B

Instrument