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Assessing the leadership styles and total quality leadership behaviors of presidents of four-year universities and colleges that have implemented the principles of total quality management

Huang, Cheng-Chiou, Ph.D.

The Ohio State University, 1994

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300 N. Zeeb Rd.
Ann Arbor, MI 48106

**Assessing the Leadership Styles and Total Quality Leadership
Behaviors of Presidents of Four-Year
Universities and Colleges that have Implemented
the Principles of Total Quality Management**

Dissertation

**Presented in Partial Fulfillment of the Requirements of
the Degree of Doctor of Philosophy in
the Graduate School of The Ohio State University**

By

Cheng-Chiou Huang

*** * * * ***

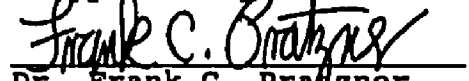
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Glory to My Heavenly Father, Jesus Christ

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CHAPTER I

INTRODUCTION

Rapid changes in the economy, technology, society and demographics have brought about persistent demands for educational quality and effectiveness (Murgatoryd & Morgan, 1993; Pratzner, 1988; 1985). Federal and state governments, the National Governor's commission, professional education associations, business and other private groups have called for a wide range of educational reforms focusing on quality implementation (American Vocational Association, 1992; Bragg, 1992; Pratzner, 1985). Prominent reports, such as A Nation At Risk (The National Commission on Excellence in Education, 1983), Workforce 2000: Work and Workers for the 21st Century (Johnston & Packer, 1987), The Forgotten Half: Non-College Youth in America (William T. Grant Foundation, 1988), American's Choice: High Skills or Low Wages (Commission on Skills of the American Workforce, 1990), What Work Requires of Schools: A SCANS Report for America 2000 (Secretary's Commission on Achieving Skills, 1991), have created a great

deal of pressure on education administrators in leading and managing the education system to focus on the pursuit of quality education.

In order to achieve quality education expectations, education leaders across the country have begun to adopt the principles of Total Quality Management (TQM), a management framework which was adopted successfully by Japan and American business and industry to improve quality and performance. Based on sound principles and a strong body of experience, total quality management is thought to provide education administrators with the tools and concepts they need to become highly effective in meeting the goals of improving education quality (Lewis & Smith, 1994; Holt, 1993; Lewis, 1993; Murgatoryd & Morgan, 1993; Schmoker & Wilson, 1993; Thor, 1993; Chaffee et al., 1992; Bonstingl, 1992; Rhodes, 1992; Schargel, 1991).

Depending on an organization's situation as they learn about the processes involved, the quality management framework is known variously as Total Quality Management, Continuous Quality Improvement, Participative Management, Site-Based Management, Quality Circles, Quality and Productivity, Self-Managed Work Group and Total Quality Control. The term "Total Quality Management" will be used throughout the remainder of this paper.

Numerous articles suggest that total quality management can improve different aspects of education quality. The different aspects, for example, include improvement of teachers' performance (Ord, 1993; Freeston, 1992; Rhodes, 1992), of students' performance (Schmoker & Wilson, 1993; Glasser, 1990), of program or course design (Baur, 1993; Sokol, 1993; Andrade & Ryley, 1992; Harris & Harris, 1992), of school-community relations (Keith & Girling, 1991), of budget planning and managing (Miselis, 1993; Keith & Girling, 1991) of staff development and performance (Winck, 1993; Dinklocker, 1992; Hixson & Lovelace, 1992; Rhodes, 1992; Melvin, 1991), of educational assessment (Harris & Harris, 1992; Rankin, 1992) and other areas. Increasingly research efforts have been conducted and it has been reported that with slight modifications, the principles of total quality management can be implemented in education and can make positive impact on quality improvement of the education system (Abernethy & Serfass, 1992; Danne, 1993; Teeter & Lozier, 1993; Baugher, 1992; Ehrenberg, 1992; Horine & Axland, 1992; Moore-Norman Voc-Tech Center, 1992; Partin, 1992; De Candido, 1986).

In the adoption of total quality management, almost all quality experts suggest that top-management's total quality leadership behavior (or quality leadership behavior) is most important in the implementation of the principles of TQM. Total quality leadership behaviors are meant as the behaviors

or actions a leader demonstrates in directing or leading his or her followers to make a success of fulfilling expectations of quality. If, for example, administrators or managers actively participate in quality meetings with their subordinates, their subordinates or employees will be more willing to contribute their ideas. If the administrators attend quality training activities themselves, the employees will be more likely to attend quality training activities and spend effort to learn about quality improvement concepts and techniques.

Quality experts insist that failure to address top-management's quality leadership behaviors will obstruct all the efforts of TQM implementation (e.g., Johnson, 1993; Crosby, 1980; 1989; Juran, 1988; Deming, 1986; Imai, 1986; Garvin, 1988). In the quest for successful implementation of TQM, top level leaders should know how to change their leadership styles in order to perform quality leadership behaviors, if there is a conflict between the leader's leadership styles and the total quality leadership behaviors. That is, the leaders need to modify or change their patterns of actions in order to demonstrate total quality leadership behaviors. For education, similar claims are made by quality education experts (Lewis & Smith, 1994; Kaufman & Zahn, 1993; Murgatoryd & Morgan, 1993; Schenkat, 1993; Bostingl, 1992; Hough, 1992; Glasser, 1990; Hopkins, 1987). Research on total

quality management, whether in business, education or other types of organizations, has indicated that supportive leadership behaviors of top-management toward quality is one of the most important elements necessary for the effectiveness of TQM implementation. Findings of the research have evidently shown that the leadership styles of the managers or leaders at the top level play a crucial role in effecting their quality leadership behaviors.

For example, covering 945 management practices in 584 organizations in four industries on three continents, Ernst and Yong's International Quality Study reported that demonstrated leadership support of top-management is critical to TQM success. Managers need to change or modify their leadership styles in order to perform the appropriate quality leadership behaviors (Schaaf, 1993).

In a study covering nearly 7,000 survey participants in 536 North American organizations to identify the factors that are considered to be critical to the success of any TQM initiative, Wellins (1993) reported that leadership commitment behavior is the most important factor. The committed leadership comes from the leader's transformation of his/her leadership style toward quality (Benson, 1993; Ginnodo & Wellins, 1993).

In his six-year study of Japanese and American manufacturers about attitudes of leaders and other factors

associated with TQM implementation, Garvin (1988) reported that there is a strong positive relationship between management's attitudes and leadership and the effectiveness of quality management programs. Considered to be one of the most influential studies in the development of total quality management, findings of the Garvin research indicated that there was an obvious difference in top-management's quality leadership behaviors between superior and less superior companies. It was noted that this difference was caused by the different attitudes and leadership styles of the managers at the top level. It was suggested by Garvin that management needs to make a fundamental shift in their attitudes and leadership styles in order to develop their quality leadership behaviors (Locke, 1991; Garvin, 1988; 1986).

Other studies of TQM implementation, like the 1991 Conference Board survey of 192 major U.S. companies (Caldwell, 1993), a survey study of 923 manufacturing companies (Magjuka, 1993), the American Quality Foundation's study of 584 companies (Caudron, 1993) and a 1991 Electronic Business magazine survey (Boyett, Kearney & Conn, 1992), all reported that total quality leadership behavior of top-management was the foundation of effective TQM implementation.

If the leadership behaviors of quality are a key element in the implementation of TQM, and leadership style is an important factor that affects the performance of managers'

performance of total quality leadership behaviors, then what is being done to study the quality leadership behaviors and leadership styles of top-management in organizations with TQM implementation? Studies have been conducted to examine the leadership of successful managerial leaders in organizations with TQM implementation (Darling, 1992), the comparison of traditional leadership and total quality leadership (Rothrauff, 1992), the beliefs and perceptions of administrative leaders, i.e. superintendents, board members, toward total quality management (Teigland, 1993; Wilcux, 1993), the relationship of senior management's quality management behaviors and subordinates' commitment toward quality (Dowling, 1992), the interaction of leadership and group behavior during TQM implementation (Ehrenberg, 1992), the attitudes and commitment of top management officers toward TQM (Boyle, 1992), and the effects of managers' roles on TQM (Powers, 1991). But no research has been identified which studied how top level managers' performance of total quality leadership behaviors is associated with their different leadership styles.

Statement of the Problem

Johnson insisted that there is a relationship between managers' leadership styles and their performance of quality leadership behaviors. Leaders have to change their leadership

style in order to perform the different quality leadership behaviors in the TQM process. According to Johnson (1993), as the TQM programs progress, managers, especially at the top level, should transform their leadership style to the appropriate quality leadership style to make TQM programs successful. However, Johnson noted that there is little empirical study to distinguish which leadership styles are more appropriate and effective for leaders to perform quality leadership behaviors. There is a tremendous gap in research investigating the relationship between leadership styles and total quality leadership behaviors. How administrators' leadership styles are associated with their performance of total quality leadership behaviors is still a puzzle. According to Deming, (in Bonstingl, 1992) without quality leadership behaviors of top administrators, TQM efforts cannot be accomplished and made to last in schools. Peters and Waterman (1982) stressed the importance of the behaviors of leaders in converting average organizations into excellent organizations with good quality and performance. Finch and McGough (1990) stated that, "the quality of education is only as good as those who provide leadership" (p.xiii).

Despite the findings of the importance and great influence of leadership styles on management's quality leadership behaviors, as well as top-management's quality leadership behaviors to the implementation of TQM, little

research was found to date which assessed top management's specific and different leadership styles and their performance of total quality leadership behaviors in organizations with TQM programs. After a review of recent organizational quality management behavior literature, Balcazar et al., (1989) pointed out that little emphasis was given to the study of the behaviors of top-management, but relatively extensive attention was given to line workers and middle management. Given the importance of the leadership styles of top-management and their performance of quality leadership on the process of TQM implementation, there is an evident need for a better understanding of the relationship between leadership styles of top level school management and their performance of total quality leadership behaviors in school organizations that are implementing principles of TQM.

Purpose of the Study

The general goal of this study was to explore the relationship between the leadership styles of top level educational administrators and their performance of total quality leadership behaviors. Specifically, the purpose of this study was to investigate how the leadership styles of presidents of four-year higher education institutions are related to their performance of total quality leadership behaviors as perceived by the responsible faculty or

administrators for TQM implementation.

To measure the perceived leadership styles and performance of total quality leadership behaviors, two research instruments were utilized. For measuring leadership styles, the Leadership Behavior Description Questionnaire (LBDQ), developed by researchers of The Ohio State University Leadership Studies, was used. Presidents' leadership styles were measured on the dimensions of consideration and initiating structure. Briefly defined, initiating structure refers to the leader's behaviors which focus on directing, planning and stress on-task accomplishment and well-organized work patterns. Consideration, on the other hand, refers to the behaviors of the leader that emphasize problem solving, friendly relationship, consultative and open manner (Halpin, 1957). Detailed descriptions and explanations of the LBDQ instrument are provided in Chapters II and III.

To measure the performance of total quality leadership behaviors of presidents, an instrument named the Total Quality Leadership Behaviors Questionnaire (TQLBQ) was developed by the researcher. The theoretical foundation of the TQLBQ was based on the review of literature presented in Chapter II. Procedures used for the development of the TQLBQ are provided in Chapter III. Selected demographic variables, including gender, age, ethnicity, number of years working/teaching in the institution, current position as administrator or faculty,

level of education degree, major specialty area, familiarity with TQM principles, and length of time of TQM implementation were investigated to determine how these variables are related to the perceived leadership styles and total quality leadership behaviors performance of university presidents.

Objectives of the Study

The objectives of the study are stated as the following:

Demographic Variables

1. To describe the demographic characteristics of the responsible personnel or faculty for TQM implementation in four-year colleges or universities that have implemented principles of TQM.

- a. Gender
- b. Age
- c. Ethnicity
- d. Number of years working/teaching in the institution
- e. Level of education degree
- f. Major specialty area
- g. Current position as administrator or faculty
- h. Familiarity with the principles of TQM
- i. Length of time of TQM implementation

Leadership Styles

2. To describe the leadership styles, consideration or initiating structure, of presidents perceived by responsible

personnel or faculty of TQM implementation in four-year colleges and universities that have implemented TQM.

Total Quality Leadership Behaviors

3. To determine the perceptions of the responsible personnel or faculty of TQM implementation about the president's performance of total quality leadership behaviors in four-year higher education institutions that have implemented TQM principles.

Leadership Styles and Total Quality Leadership Behaviors Performance

4. To determine the relationship between the consideration leadership style and the performance of the total quality leadership behaviors of presidents as perceived by the responsible personnel or faculty for TQM implement in four-year colleges and universities that have implemented TQM.

5. To determine the relationship between the initiating structure leadership style and the performance of the total quality leadership behaviors of presidents as perceived by the responsible TQM implementation personnel or faculty in four-year colleges and universities that have implemented TQM.

Demographic Variables and Leadership Styles

6. To describe the relationship between the demographic characteristics of the responsible faculty or personnel of TQM implementation and their perceptions of their presidents' consideration leadership style in four-year institutions that have implemented principles of TQM.

7. To describe the relationship between the demographic characteristics of the responsible faculty or personnel of TQM implementation and their perceptions of their presidents' initiating structure leadership style in four-year institutions that have implemented principles of TQM.

Demographic Variables and Total Quality Leadership Behaviors Performance

8. To determine the relationship between the demographic characteristics of the responsible TQM implementation personnel or faculty and their perceptions of their presidents' performance of total quality leadership behaviors.

9. To determine the difference between the responsible administrator and faculty for TQM implementation about the presidents' performance of total quality leadership behaviors.

Significance of the Study

The significance and benefits of the study are threefold, including theoretical, practical and personal benefits.

Theoretically, the significance of the study can be found in at least three areas: quality, leadership style, and education. Collard (1993) pointed out that as of 1991, published research related to quality management was limited. In their recent review of the literature, Flynn, Schroeder and Sakakibara (1990) determined that the majority of the studies on total quality management had been only anecdotal in nature. Garvin (1988) noted that little empirical study has been

conducted about top management's leadership attitudes and other areas of quality management. After his broad-scope research of quality management, he remarked, "given its long history, surprisingly little is known about quality management. Academic research on the subject is in its infancy" (p.222). The literature on quality management demonstrates an evident need for more empirical research on topics concerning the leadership behaviors of people at top management levels. This research effort adds new knowledge to existing quality theory in both theoretical and practical ways.

As derived from literature and studies, the leader's leadership styles and his/her performance of quality leadership are somewhat related. However, there has been little research whose primary purpose is to make more explicit which different leadership styles of top administrators would have a different influence on their performance of leadership to achieve quality. Jamson and Soule (1991) pointed out that over the past years, it gradually became apparent that the knowledge of leadership styles was not sufficient to meet the demands of today's management innovation, such as TQM or other strategies. This study, which integrated leadership styles and quality management, provided empirical research information to enrich the general body of knowledge on leadership styles and quality management.

Topics related to TQM have become a staple of many academic conferences. Articles relating total quality management can be found easily in journals of education. The Educational Leadership Journal has devoted a whole issue (February, 1992) to a discussion of various aspects of TQM. Two bills are pending in Congress that would establish national quality awards for higher education institutions that practice TQM (Mangan, 1992). As the interest in and practice of TQM grows rapidly, Petry (1992) recommended additional studies should be conducted related to TQM in the educational context. Capper and Jamison (1993) identified implications about the importance and necessity of research related to power or leadership areas in TQM implementation. Research in quality, stressed by Feigenbaum (1994), is one of the keys to the growth of quality throughout the educational infrastructure. Thus, the theoretical implications of the study are relatively important.

Cornesky et al. (1991) urged school presidents, deans and other administrators of higher education to improve their administrative leadership for initiating total quality management. Practically, the research is greatly beneficial to professional development of educational administrators. So far, the principles of total quality management are being implemented in a growing number of educational organizations throughout the U. S. without the benefit of such research

data. If school administrators know, based on the research, which leadership styles are related to their performance of total quality leadership behaviors, then they can work to strengthen or develop these styles. They can use the information to plan or direct their professional development activities. Additionally, the findings of the study can be applied to enrich professional development training programs, seminars or activities for educational administrators so that school administrators can be more firmly prepared.

Personally, the study is deemed as a fulfillment of my doctoral study plan. As an international student coming from Taiwan, it was my hope to learn about the state-of-the-art information and knowledge which I can bring back to contribute to the education system of my country. With the quality movement flourishing all over the world, people in Taiwan are expecting a better quality of life, of product, and especially, of education. An increasing number of educational organizations have tried to apply the principles of total quality management to improve education quality. The Director of Higher Education, the Ministry of Education, Young, Ku-Su, noted that to establish a best-quality higher education system is the goal of the Ministry of Education (Central Daily News, 1993). President Lee, Ten-Hui stated, "Education is the foundation of our country...Providing high-quality education is every educator's responsibility, particularly those

administrative leaders in education" (Central Daily News, 1993, p.7). This study, which attempts to examine the relationship between university presidents' leadership styles and their performance of total quality leadership behaviors, can benefit significantly the higher education system of the U.S. as well as Taiwan.

Definition of Terms

The following terms are operationally defined to provide a common basis for understanding certain terminology used in this research.

Total Quality Management. This term is defined as a system of continuous improvement of products and services in order to achieve client satisfaction through the involvement of all school administrators, staff, faculty and other personnel and the application of quantitative methods (The Texas Association of School Administrators, 1992).

Leadership Style. This term is used synonymously with Leadership Behavior in this paper. The term is defined as the patterns of behaviors or actions a president demonstrated, as perceived by his or her staff, faculty and other personnel, and/or as measured by the Leadership Behavior Description Questionnaire(LBDQ).

Total Quality Leadership Behavior. This term is used synonymously with Quality Leadership or Total Quality

Leadership Behavior or Quality Leadership Behavior in this paper. The term is defined as the behaviors or actions a school administrator demonstrated in directing or leading his or her followers to make a success of fulfilling expectations of quality. Examples of total quality leadership behavior are provided in the following:

1. Taking time to participate in quality meetings or other quality related activities.
2. Establishing a quality team or assigning quality personnel to coordinate activities related to quality program implementation.
3. Prioritizing quality as the first requirement for the school system.

Limitations of the Study

This study is exploratory and descriptive in nature. Rather than testing formal hypotheses and making inferences about cause and effect, it focuses on the description of how the dimensions of presidents' different leadership styles are associated with their performance of total quality leadership behaviors as perceived by the responsible administrators or faculty of TQM implementation in four-year institutions which have implemented the principles of TQM. Measures of presidents' leadership styles and performance of total quality leadership behaviors are limited to personnel or faculty

perceptions as well as to the domains of the respective instruments. The data should be treated cautiously due to the potential effects of the degree of frankness, honesty and sincerity of the survey participants as expressed on the instruments.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

The review of related literature is presented in two parts. Part one concentrates on leadership theories. Part two focuses on total quality management. Part one is divided into three sub-sections: sub-section one reviews trait theories; sub-section two reviews behavioral theories and sub-section three reviews contingency theories. Part two has four sub-sections: sub-section one deals with the historical development of total quality management; sub-section two deals with total quality management principles and theories; sub-section three deals with total quality management in education, and sub-section four deals with total quality leadership.

Leadership Theories

The topic of leadership has always held a strong fascination. Bennis and Nanus (1985) noted that leadership is

the most studied area of any in the social sciences. Growing out of psychology theories of the 1900s, leadership studies appeared at a rate of more than 170 a year (Stogdill, 1974). A large number of researchers have examined personality traits, leadership styles, situational contingencies and a multitude of other topics pertinent to leadership since the publication of the first empirical study of leadership in 1904 (McCall, 1977; Bass, 1990).

There is a rich history of theory and development and studies on leadership. Because comprehensive reviews of major studies and summaries of research findings of leadership have been provided over the past years by different leadership researchers (e.g., Lewis, 1993; Bass, 1990; Bensimon et al., 1989; Yukl, 1989; Bryman, 1986; Hollander, 1985; House & Baetz, 1979; Mitchell, 1979; Vroom, 1976; Stogdill, 1974), only a sample of significant and relevant theories and study findings on leadership are presented and discussed in this paper.

A convenient method to organize the overwhelming array of literature on theories of leadership is to group them into three distinct categories: trait theories, behavioral theories and contingency theories. According to Bensimon et al. (1989) the different views under each category of leadership theories are that:

1. **Trait theories:** attempt to identify specific personal characteristics that contribute to a person's ability to assume and successfully function in positions of leadership;
2. **Behavioral theories:** study leadership by examining leaders' patterns of activity, managerial roles, and categories of behavior--- that is, by considering what it is that leaders actual do;
3. **Contingency theories:** emphasize the importance of situational factors, such as the nature of the task performed by a group or the nature of the external environment to understand effective leadership. (p.7)

Trait Theories

Much of the early research on leadership was concerned with the study of the personal traits of leaders. It was based on the idea that leaders were born and selected, rather than developed or trained. Bass (1990) suggested that the conception of leadership traits was founded on the major assumption that leaders are persons possessing specific characteristics which make them different from followers. From 1900 to the 1930s, many investigations were undertaken to explain leadership by identifying those qualities associated with effective leaders (e.g., Bernard, 1926; Tead, 1929; and Page, 1935).

Traits that were investigated can be grouped into three broad types: physical factors, ability characteristics, and personality features. Physical factors include age, weight, height, and physical appearance; ability features include intelligence and knowledge; personality features include introversion-extroversion, self-confidence, dominance and

interpersonal sensitivity (Locke et al., 1991; Bryman, 1986). Additionally, attention was also given to social factors such as cooperation or adaptability and performance ability such as initiative and dependability (Hall & Hord, 1987).

Decades of research on leadership qualities or traits failed to provide conclusive evidence to support the major assumptions of trait theories. As Jennings (1961) stated, "Fifty years of study have failed to produce one personality trait or set of qualities that can be used to discriminate leaders and nonleaders" (p.1). Based on three literature reviews on leadership traits conducted by Bird (1940), Jenkins (1947) and Stogdill (1948), it was concluded that although hundreds of studies on leadership traits had been done, no strong and consistent findings resulted. There was no particular individual trait or combination of traits consistently found to be characteristic of effective leaders.

After reviewing 163 trait studies implemented from 1949 to 1970, Stogdill (1974) claimed that although some traits seemed to be characteristics of successful leaders, the possession of the traits did not really distinguish leaders from other people. To explain the emergence of leadership, as Stogdill emphasized, we should consider factors not only related to the leader's traits, but also related to the nature

of the situation and the leader's acts or behaviors in the situation.

Behavioral Theories

In the late 1940s the study of leadership shifted its emphasis away from the study of the traits of leaders toward their leadership styles or patterns of behaviors. Leadership behavior and style are usually treated as synonymous, both pointing to what leaders actually do (Yukl, 1989; Bryman, 1986).

According to Bryman (1986), there are at least three factors that contributed to this change of emphasis. The first factor was the lack of success of trait studies identified by Jenkins (1947) and Stogdill (1948) and other leadership researchers. As Shartle (1957) remarked, "The trait approach had reached an impasse before the beginning of World War II" (p.1).

The second reason contributing to the contemporary trend toward general psychological work on leadership was the observation that most leadership studies conducted during the late 1940s were moving in the direction of examining the behavior patterns of leaders. The third factor explaining why leadership behaviors became a prominent focus was related to the emergence of the "human relations" approach to the study of the organization. The findings of the famous Hawthorne studies made people aware of the human relations aspects of

organizational behaviors, and also stimulated interest in discovering the factors that identify the styles or behaviors of leadership (Bass, 1990; Locke, 1991; Bryman, 1986).

Early studies of behavioral theories analyzed the effects of leaders' behavior associated with different styles of leadership on a group's performance. The concepts of authoritarian, democratic, and laissez-faire leadership (Lippett & White, 1958) differentiated leaders based on whether they were directive or participatory, emphasized accomplishing tasks or individual satisfaction, and encouraged or discouraged interpersonal contact (Bensimon, 1989).

Among significant works on leadership behavior theories was the research done by Shartle and his colleagues at The Ohio State University. Initiated in 1945 by the Bureau of Business Research at The Ohio State University, the Ohio State Leadership Studies were considered to be one of the best-known and most influential programs in the development of theories of leadership (Hollander & Offerman, 1990; Bensimon, 1989; Yukl, 1989; Bryman, 1986).

Bryman (1986) pointed out that there were two important features of the research team: its interdisciplinary approach and its focus on the activities of leaders. As Stogdill and Coons (1957) remarked,

The Ohio State Leadership studies represent an interdisciplinary undertaking. The major contributors were psychologists, sociologists and economists.
(p.vii)

Shartle (1957) further stated,

In the Ohio State Leadership Studies the approach to the topic of leadership has been that of examining and measuring performance or behavior rather than human traits. The Ohio State Leadership Studies, which have involved the efforts of several disciplines, has as one of their principal objectives the testing of hypotheses concerning the situational determination of leader behavior. When the Ohio State Leadership Studies were initiated in 1945, no satisfactory theory or definition of leadership was available. (p.1)

Under the direction of Shartle, a series of studies of leadership behaviors were conducted. The well-known definition of behavioral theories of leadership was developed by Hemphill and Coons (1957) as the working definition of the studies: "Leadership is the behavior of an individual when he(she) is directing the activities of a group toward a shared goal" (p.7). The paradigm for the study of leadership is showed in Figure 1.

According to Shartle (1957), "The leader behavior description is the central point. Leader behavior may be concomitant with group factors and also concomitant with individual factors. Likewise, the relationship between leader behavior and the factors may be in terms of effects or determiners" (p. 2).

To identify the various dimensions of leader behaviors, and to gather data about leaders' patterns of behavior, the Leader Behavior Description Questionnaire (LBDQ), a research instrument designed to describe how leaders carry out their activities, was developed (Halpin, 1957). As described by

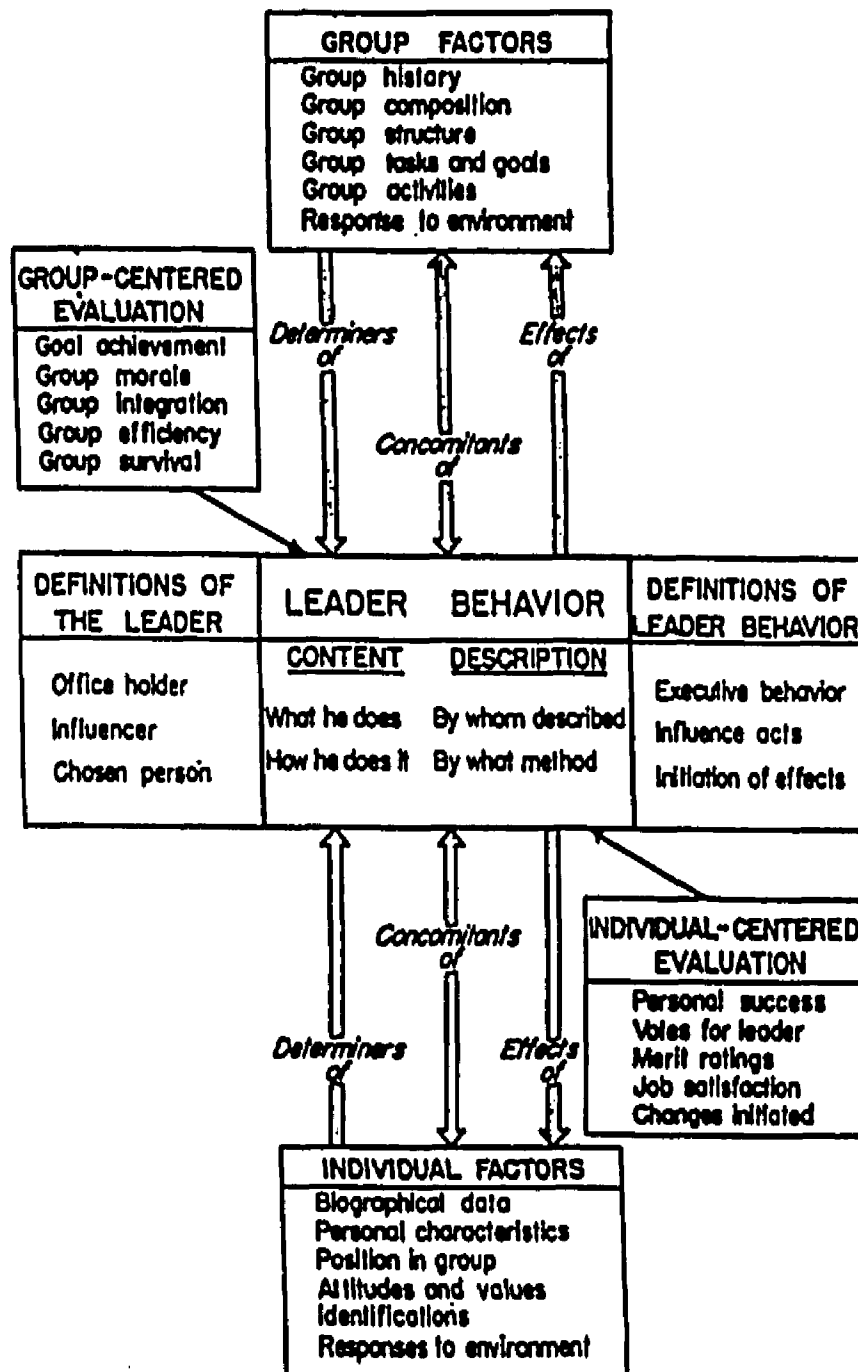


Figure 1. Paradigm for the study of leadership.

Source: Shartle, C.L. (1957). Introduction. In R.M. Stogdill, & A.E. Coons (Eds.). Leader Behavior: Its Description and Measurement. Columbus, OH: The Ohio State University, The Bureau of Business Research. p.3.

Bass (1990), the development of the LBDQ was originated by Hemphill and his associates. Having developed a list of about 1,800 statements of possible descriptions of leadership behaviors, the team of researchers eventually agreed on 150 statements. These statements were used to construct the questionnaire items of the first form of the LBDQ (Hempill & Coons, 1957). Halpin and Winer (1957), in reporting the development of an air force adaptation of the instrument, identified initiating structure and consideration as two fundamental dimensions of leader behavior.

These dimensions were identified based on a factor analysis of the results of the administration of the LBDQ to 300 crew members who described leader behaviors of their 52 aircraft commanders. Initiating structure and consideration, produced by the Ohio State Leadership Studies staff, were separate and distinct dimensions of leader behaviors. According to Halpin (1957), the two dimensions describe different leadership behaviors:

Initiating Structure: refers to the leader's behavior in delineating the relationship between himself/herself and the members of his/her group and in endeavoring to establish well-defined patterns of organization, channels of communication, and the ways of getting the job done.

Consideration: refers to behavior indicative of friendship, mutual trust, respect, and warmth in the relationship between the leader and the members of the group. (p.1)

As shown by the factor analysis, initiating structure and consideration accounted for 33.6 and 49.6 percent respectively

of the common variance. Clearly, initiating structure and consideration were the central ingredients of the measurement of leader behavior because it was possible to specify them and their constituents with such great precision (Bass, 1990; Hersey & Blanchard, 1988; Halpin, 1966).

Impressed by the high percentages of the common variance that the two factors initiating structure and consideration revealed, the researchers revised the LBDQ to be a 40-item research instrument for measuring leaders' leadership behaviors based on subordinates' perception of their designated leaders on the two dimensions (Halpin & Winer, 1957). In addition to the LBDQ, there were three other leadership research questionnaires derived from the Ohio State Leadership Studies. The Supervisory Behavior Description Questionnaire (SBDQ) was designed to be applied particularly for industrial settings. The Leadership Opinion Questionnaire (LOQ) was developed for leaders themselves to give responses about their own leadership behaviors. The LBDQ-XII was a new version of the LBDQ and covered not only the initiating structure and consideration dimensions of leadership behavior but also 10 other theoretical dimensions of leadership behavior (Bass, 1990; Stogdill, 1963).

According to Fleishman, since the findings of the leadership studies suggested that initiating structure and consideration were two independent dimensions, scoring high or

low on one dimension will not necessarily be the same on the other dimension. Thus, leadership behavior could be described as any mix of both dimensions (1973). Other contemporary leadership research all conceptualized leadership behavior on a single continuum. Based on the work of the Ohio State Leadership Studies, leader behavior was plotted on two separate axes (Hersey & Blanchard, 1988). Figure 2 illustrates the conceptualization of the high or low scoring of the initiating structure and consideration dimensions of leader behavior.

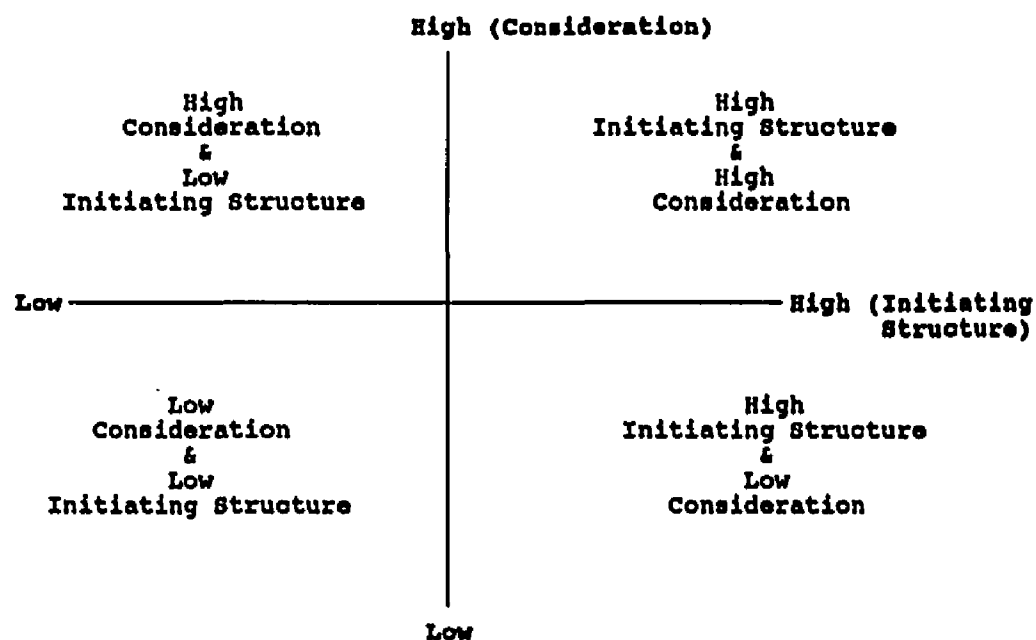


Figure 2. Combinations of initiating structure and consideration dimensions of leadership behaviors.

With years of studies of various settings and populations using the LBDQ, initiating structure and consideration were found as two prime dimensions of leader behavior (Stogdill & Coons, 1957). The concepts of consideration, emphasizing personal relationships, and initiating structure, emphasizing task accomplishment, influenced greatly future studies and research in leadership.

At approximately the same time as the Ohio State Leadership Studies were being carried out a group of researchers at the University of Michigan conducted a second major research effort on leadership behavior. A series of projects was undertaken under the direction of Dr. Rensis Likert at the Survey Research Center, University of Michigan (Bass, 1990; Yukl, 1989; Hersey & Blanchard, 1988; Bryman, 1986). The focus of the Michigan Leadership Studies was to investigate the relationships among leadership practices, group performance, group motivation and measures of organizational structure. The primary objective in their studies was to identify what patterns of leadership behaviors would lead to effective group performance.

Formed mainly by psychologists, the Michigan researcher team used structured interviews and organized field studies with both leaders and followers to obtain information. Descriptions of leadership behaviors learned from supervisors and subordinates were analyzed to see how effective leaders

differ from ineffective leaders. Two early studies, which were carried out with a section of clerical workers and their supervisors in the Prudential Insurance Company (Katz, Maccoby & Morse, 1950), and with railroad foremen and section gangs (Katz, Maccoby, Gurin & Floor, 1951) provided most of the fundamental concepts of the Michigan Studies.

Findings of the Michigan Studies revealed that effective leaders concentrated most of their time and effort on supervisory functions rather than on doing the same tasks as their subordinates. Effective leaders who demonstrated task-oriented behaviors concentrated their effort and time on planning and scheduling work, providing necessary technical assistance, close supervision, supplies and resources, and coordinating activities for enhancing performance and productivity. Task-oriented leaders emphasized the technical and production aspects of the job in their relationships with subordinates. Task-oriented behaviors corresponded approximately to the initiating structure dimension of the Ohio State Leadership Studies (Yukl, 1989; Bryman, 1986).

Effective leaders who were considered as relationship-oriented tended to focus on employee well-being, employee growth and development, provide supportive personal relationships with subordinates and demonstrate a high degree of trust, confidence, appreciation, and friendly and considerate behavior. Relationship-oriented behaviors were

congruent with the consideration dimension of the Ohio State Leadership Studies (Yukl, 1989; Bryman, 1986).

Behavioral leadership research conducted by the Ohio State Leadership Studies and the Michigan Studies had a considerable influence on the future development of leadership research. The two theoretical concepts, initiating structure (task-oriented) and consideration (relation-oriented) made a great impact upon the development of ideas about what leaders should do in order to enhance their leadership effectiveness (Bass 1990; Yukl, 1989; Hersey & Blanchard, 1988). The studies of behavioral leadership theories gave rise of the normative leadership approaches of effective leader behavior which tried to establish one best leadership style for all situations (Bryman, 1986).

Various leadership theorists proposed normative leadership approaches to argue that there is one best leadership style or one normative approach to achieve effective leadership. For example, McGregor (1960) developed his X and Y theories of management, Likert (1976) constructed his System Four leadership approach and Blake and Mouton (1964) prescribed their Managerial Grid to best achieve effectiveness of leader behaviors. Because the Managerial Grid of Blake and Mouton is the best-known model of the normative leadership approach (Bass, 1990), it is discussed here as one example of the normative leadership approach.

The Managerial Grid was conceived by Blake and Mouton (1964). In a series of publications, they developed an approach to organizational development. The so-called Managerial Grid was a two-dimensional array with two scaled axes, one representing concern for production and the other concern for people.

According to Blake and Mouton, both concerns were essential ingredients of effective management. A leader's leadership style can be located on the grid by identifying the degree of concern for production on a nine-point scale on one axis and concern for people on a nine-point scale on the other axis. Thus, there were 81 possible combinations of leadership behavior (1964). However, Bryman (1986) remarked that Blake and Mouton generally focused only upon five combinations of leadership styles. They were: Improved management (1,1); Country Club management (1,9); Task management (9,1); Middle-of-the-Road management (5,5); and Team management (9,9). The Managerial Grid was used extensively in organization and management development programs. Blake and Mouton insisted that there was only one best style irrespective of the situational or environmental variables. It was believed by Blake and Mouton that the most effective leadership style was the team management approach (9,9 on both scales) for the leader concerned about both productivity and people. However, further studies applying the Managerial Grid have yielded

different results. The effectiveness of leadership style depends heavily on the variables of the different situations. The grid has often been criticized for asserting that one 'best way' exists for providing leadership without concern for the nature of the situation, the particular task, or the qualities of the participants (Bass, 1990; Yukl, 1989; Hersey & Blanchard, 1988).

Contingency Theories

With contingency theories, or situational theories, the perspective of leadership focuses on the importance of situational factors. The theories tend to indicate how the leaders' behaviors are shaped and thus constrained by the factors of situations. The major assumption behind the theories is that for leaders to be effective requires different patterns of leadership traits or behavior for different situations. Because effective behavior is contingent on the situation, they are collectively referred to as "contingency theories" (Benismon et al., 1989; Yukl, 1989; Hersey & Blanchard, 1988; Fielder & Garcia, 1987).

Bensimon et al. (1989) pointed out that while behavioral theories focus more frequently on internal variables, contingency theories tend to emphasize the importance of factors outside the organization. Depending on the different situational factors emphasized, such as the nature of the task, qualities of the followers and leaders, maturity of the

followers, the nature of the organizational internal or external environment, and leader-follower relationship, various contingency theories are proposed. Some well-known contingency or situational theories and models are presented here.

It is generally believed that Fiedler was the first to combine the personal characteristics or traits of leaders and situational factors. In contrast to Blake and Mouton, Fiedler believed that there was no one best leadership style, and that what was best was dependent on the nature of the situation. According to Fiedler's contingency model, leadership behavior is produced by the interaction between those two elements. A leader is primarily either task- or relationship-oriented. The effectiveness of either orientation depends on three major situation variables: the nature of the relations between the leader and his/her followers or group members, the structure of the task, and the power position the leader held. Thus, leadership effectiveness is determined by the extent to which a leader can change the situation to match his personal leadership orientation (Yukl, 1989; Hersey & Blanchard, 1988; Hall & Hord, 1987; Fiedler, 1967).

The Path-Goal Theory, developed by House (1971), considered the situational factors and the behaviors of leaders. The perspective of this theory assumes that effective leadership is determined by the interaction of behavior and

the situation. As a graduate student of Stogdill, House's Path-Goal Theory was derived from the conceptualization of the behavioral theories. According to House, a successful leader is the one who clarifies the paths to attaining goals and helps subordinates overcome problems, and thereby increases subordinates productivity and satisfaction. For example, when tasks are ambiguous, the leader should help structure them; when tasks are not ambiguous but are structured, the leader should be considerate and supportive. To increase leadership effectiveness, a leader needs to change his/her initiating structure or consideration behavior depending on the differences of the situational variables, including task characteristics and subordinate characteristics (House, 1971).

Hersey and Blanchard's Situational Leadership Model is widely used to study the relationship between leadership style and leadership effectiveness. It was originally developed as the Life Cycle Theory of Leadership in 1969, and later renamed the Situational Leadership Model (Hersey & Blanchard, 1988). According to Bass (1990), the building of the model is based upon the propositions which Hersey and Blanchard gained from prior leadership studies, including Stogdill and Coons' ideas of different leaders with different leadership style (1957), the combinations of the two primary leadership behaviors: initiating structure and consideration (Halpin, 1957), effectiveness of leadership behavior varies

depending on situational factors (Fiedler, 1971), considered a high task- and a high relation-oriented leadership style as the best attitudinal style (Blake & Mouton, 1964) and followers' maturity related to the stage in a group's life cycle or to previous education and experience. Hersey and Blanchard (1988) commented "Situational Leadership is a model, not a theory. Concepts, procedures, actions, and outcomes are based upon tested methodologies that are practical and easy to apply" (p.170).

According to Hersey and Blanchard (1988),

Situational Leadership is based on an interplay among (1) the amount of guidance and direction (task behavior) a leader gives; (2) the amount of socioemotional support (relationship behavior) a leader provides; and (3) the readiness ("maturity") level that followers exhibit in performing a specific task, function or objective. (p.170)

Based on the interactions of the various factors stated above, there are four leadership behaviors generated: Telling, Selling, Participating and Delegating (p.182).

When followers are very immature about the task, the leader should tell or direct the follower and establish procedures and standards. When followers have slightly more maturity about the work, the leader should explain to the followers the work objectives and processes. When the followers are very mature, the leader should delegate responsibility or power to the followers (Bensimon et al., 1989; Yukl, 1989). The effectiveness of leadership is related

to the appropriateness of the leader behaviors toward the readiness of the subordinates. In contingency theories or situational theories of leadership, leadership theorists commonly claimed that leadership theories have to be situationally contingent. To achieve leadership effectiveness, different leadership principles have to apply in different situations.

Nevertheless, some leadership theorists deem that contingency or situational theories are not quite related to leadership. As Locke (1991) observed, "because most of the contingency theories deal with supervision functions rather than real leadership, the validity of the claims made by contingency theorists are difficult to evaluate" (p.10).

Summary

Part one presented a review of related literature of leadership theories considered pertinent to the study. The evolution of leadership theories and research was traced. Over the years, there was different emphasis on particular leadership approaches. Beginning with discussion of trait leadership theories, then behavioral leadership theories and then contingency leadership theories, an overview of the development of leadership theories and various representative research was presented. Table 1 shows a simplified account of the development of leadership theories and representative

theories and research discussed in this paper.

Table 1

Development of Leadership Theories

Leadership Theories	Representative Theories (Research)
Trait	Bernard; Tead.
Behavioral (Style)	The Ohio State Leadership Studies, Initiating Structure & Consideration dimensions of leadership styles The Michigan Leadership Studies, Task-oriented and Relation-oriented leadership behaviors Blake, & Mouton's Managerial Grid
Contingency (Situational)	Fiedler's Contingency theory House's Path-Goal theory Hersey, & Blanchard's Situational Leadership theory

Unlike trait leadership theories which focused on the the explanations of the salient characteristics of leaders, and contingency theories which were concerned about the variables of situations that interrelate with leadership effectiveness, behavioral leadership theories attempted to identify behavioral styles of leaders that are instrumental for the attainment of group and organizational goals. Because of the particular interest of this study, which is aimed at measuring the behavioral aspects of leaders, leadership theories were discussed with the emphasis on the behavioral

theories, focusing on the research and findings of the Ohio State Leadership Studies.

As indicated in the literature on leadership, the Ohio State Leadership Studies have been considered as the most significant research in the development of behavioral leadership theories (Bass, 1990; Clark & Clark, 1990; Bensimon, 1989; Yukl, 1989; Bryman, 1986). There is some mention of the Leadership Behavioral Description Questionnaire, and the two leadership styles dimensions, consideration and initiating structure, when there is a presentation of the development of behavioral leadership theories.

According to a review of the leadership literature, consideration and initiating structure are the most frequently cited leadership style dimensions. As commented by Yukl (1981), "By far the greatest number of studies on leader behavior have used questionnaires to describe what leaders do. Questionnaire research on leadership has been dominated by the influence of the Ohio State University Leadership Studies. The Ohio State Leadership Questionnaires [the LBDQ] have been used extensively in leadership research by many behavioral scientists" (p.105). Shartle (1957) remarked on the theoretical considerations of the Ohio States Studies by stating that in various empirical research it was subsequently found that a large number of hypothesized dimensions of leader

behaviors could be reduced to two strongly defined dimensions: consideration and initiating structure. Thus, theoretically and methodologically, the Leadership Behavior Description Questionnaire, and consideration and initiating structure dimensions of leadership styles developed and identified by the researchers of the Ohio State Leadership Studies, are considered appropriate for use in this study.

Total Quality Management

Historical Development of Total Quality Management

Garvin (1988) stated that, "as a concept, quality has been with us for millennia. Only recently has it emerged as a formal management function" (p.3). The history of quality can be dated back to 2150 B.C. since the tribal chiefs, kings and pharaohs ruled, according to Gitlow (1990).

Feigenbaum contended that, since 1990, the evolution of quality control can be divided into six periods as illustrated in Figure 3.

The six quality periods can be summarized as follows:

1990: Operator quality control was achieved by one worker or a small number of workers totally controlling the entire product manufacture and the quality of the work.

1918: Supervisor quality control was introduced, where a supervisor was responsible for the quality of the

work or a group of workers.

1937: Inspection quality control was used, where full time inspectors were assigned to inspect the work of large numbers of workers.

1950: Statistical quality control began to be used, mainly in countries other than America.

1955: The concept of total quality control expanded to a quality control framework including review of designs, analysis of results, and control actions in manufacturing or at supplier sources.

1980s: Total quality control is becoming an organization-wide activity (Feigenbaum, 1983).

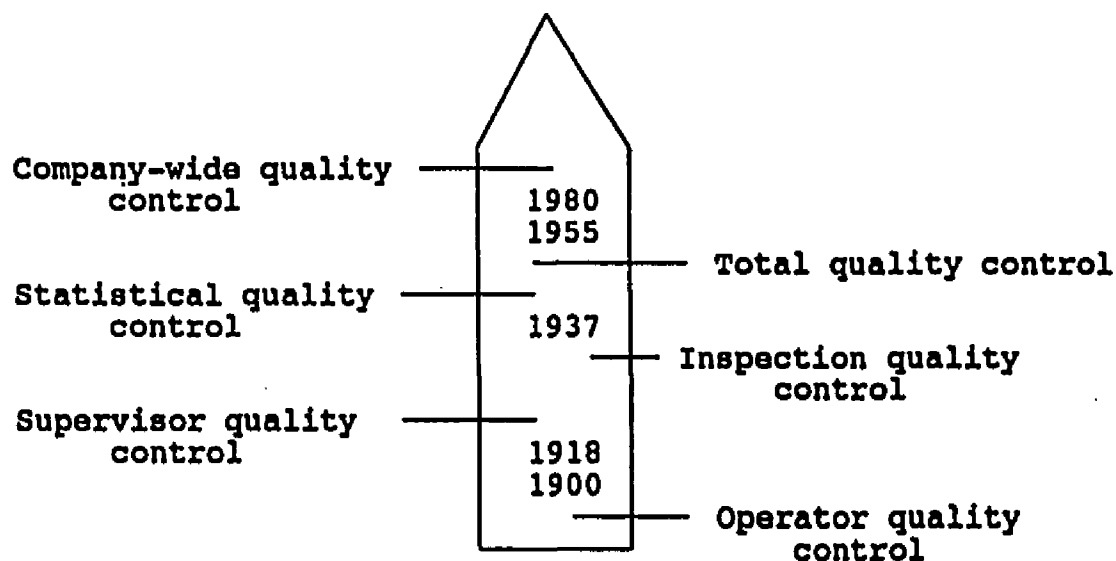


Figure 3. Evolution of quality control.

After analyzing the evolution of Total Quality Management beginning from before World War I until today, the Texas Department of Commerce generated a model, named Quality's Family Tree, to give a big picture of the developmental process of TQM (in Partin, 1992, p. 31) (see Figure 4). Garvin (1988) traced the history of quality management in his renowned book Managing Quality. He organized his research of total quality management evolution into four "quality eras": inspection, statistical quality control, quality assurance, and strategic quality management (see Table 2). The following discussion of the historical development of TQM will be based on the sequence of Garvin's four quality eras.

Prior to the Industrial Revolution, quality was viewed as the natural result of the application of individual skills of a skilled craftsman. The craftsmen took care of their trades, products, customers and the quality of the goods they made. With the birth of the Industrial Revolution, the modern industrial system began to emerge at the end of the 19th century. Mass production of manufactured goods and the need for interchangeable parts made it necessary to have formal inspection.

The pioneer work of Frederick Taylor's scientific management removed work planning responsibility from workers to industrial engineers. Henry Ford's introduction of the assembly line into the Ford Motor company made complex

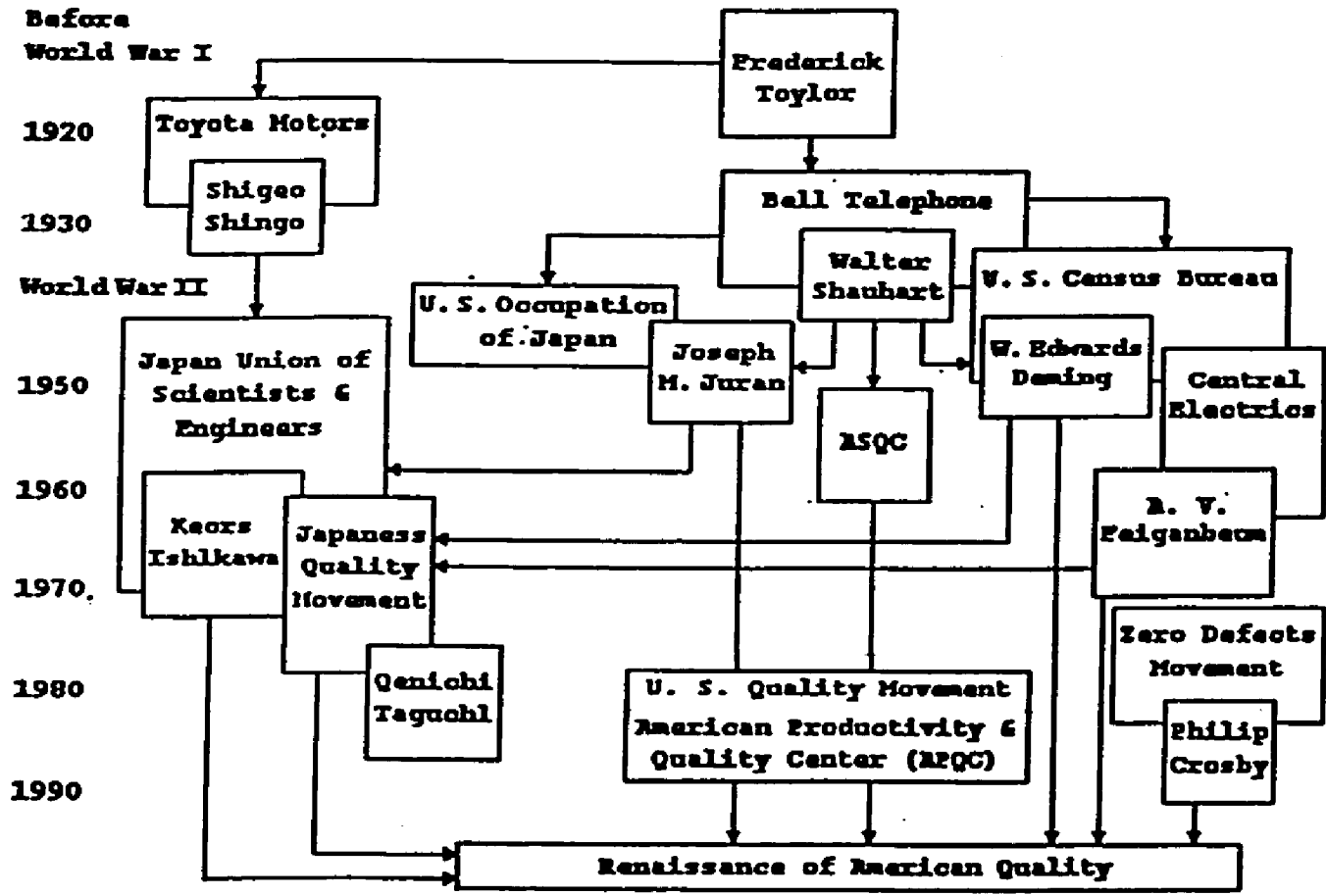


Figure 4. Quality's family tree.

Source: Texas Department of Commerce. (1992). Quality Texas. In Partin, J.C. A Measurement of Total Quality Management in the Two-Year College District of Texas. Unpublished Doctoral Dissertation. East Texas State University. P.31.

Table 2

The Four Major Quality Eras

Identifying Characteristics	Stage of the Quality Movement			
	<i>Inspection</i>	<i>Statistical Quality Control</i>	<i>Quality Assurance</i>	<i>Strategic Quality Management</i>
Primary concern	detection	control	coordination	strategic impact
View of quality	a problem to be solved	a problem to be solved	a problem to be solved, but one that is attacked proactively	a competitive opportunity
Emphasis	product uniformity	product uniformity with reduced inspection	the entire production chain, from design to market, and the contribution of all functional groups, especially designers, to preventing quality failures	the market and consumer needs
Methods	gauging and measurement	statistical tools and techniques	programs and systems	strategic planning, goal-setting, and mobilizing the organization
Role of quality professionals	inspection, sorting, counting, and grading	troubleshooting and the application of statistical methods	quality measurement, quality planning, and program design	goal-setting, education and training, consultative work with other departments, and program design
Who has responsibility for quality	the inspection department	the manufacturing and engineering departments	all departments, although top management is only peripherally involved in designing, planning, and executing quality policies	everyone in the organization, with top management exercising strong leadership
Orientation and approach	"inspects in" quality	"controls in" quality	"builds in" quality	"manages in" quality

Source: Garvin, D.A. (1988). Managing Quality: The Strategic and Competitive Edge. N.Y.: The Free Press. p.37. (Reprinted with the permission of the Free Press)

operations into simple procedures. Part of the process was an inspection to separate nonconforming and conforming products. Quality was viewed as the sole responsibility of the manufacturing department and the inspection was primarily concerned with detecting defects and involved only a simple set of activities such as counting and repairing. In 1922, with the publication of G. S. Radford's The Control of Quality in Manufacturing, inspection activities were linked more formally to quality control. Quality started to be viewed as an independent management function (Gitlow, 1990; Garvin, 1988).

Gitlow (1990) noted that the concept of quality control was first introduced by Dr. Walter A. Shewhart, a statistician at Bell Telephone Laboratories, in 1924. Garvin (1988) believed that the era of statistical quality control began in 1931 with the publication of Shewhart's Economic Control of Quality of Manufactured Products. Shewhart stated that variability in industry could be understood by using the principles of probability and statistics and provided concepts of manufacturing control and techniques for monitoring quality with scientific basis. During the 1940s and 1950s statistical quality control was established and gradually recognized as a discipline. Around 1940, and through the period of World War II, a Quality Control section staffed largely by statisticians from Bell laboratories was established to increase the quality

of arms and ammunition for the war effort. The concept of using sampling techniques to ensure acceptable quality levels (AQL) and the methods to apply the AQL levels were developed by the section. Some manufacturing organizations began to realize statistical quality control was beneficial and started to apply that in the manufacturing process after the war. However, the thrust of quality control was still primarily statistical and narrowly confined to the factory floor (Caplan, 1993; Gitlow, 1990; Garvin, 1988).

The next quality era, quality assurance, was based on several major works published in the 1950s and early 1960s. During this period, the discipline of quality expanded beyond its narrow and manufacturing base to the management function. Advent techniques, beyond statistics tools, were developed to prevent quality problems and the concept of quality assurance covered more implications for management. The four major elements involved in the transformation of the quality era from quality control to quality assurance were: quantifying the costs of quality, total quality control, reliability engineering and zero defects (Garvin, 1988).

Garvin (1988) considered Juran's Quality Control Handbook, published in 1951, as a bible to the quality profession. Until the 1950s quality improvement efforts were still assumed to be costly. In that book, Juran's introduction of his ideas that the entire production chain had

an effect on quality and exploration of the planning function and economics of quality made it possible for organizations to manage and decide their investment in quality improvement.

In 1956, Armand Feigenbaum proposed his "total quality control" which broaden the scope of the quality function to all organizations or entire systems. To achieve quality assurance, Feigenbaum argued, three activities needed to be accomplished: new design control, incoming material control, and product control. To make the quality control activities a success, all individuals across all departments in an organization should get involved in the process and cooperate with one another. Up to this point, the quality system not only included the techniques of statistical methods in manufacturing control level, but also quality planning, product development and customer service (Garvin, 1988; Feigenbaum, 1985).

With the impact of the Korean War, emphasis on reliability and end-product testing was increased, noted by Gitlow (1990). Quality awareness and quality improvement programs began to emerge in manufacturing and engineering areas as well as in the service industry for the purpose of enabling organizations to meet their quality and reliability objectives. Methods for predicting equipment performance throughout the product design process and techniques to reduce failure rates over time were developed during the postwar

period (Gitlow, 1990; Garvin, 1988).

At the time of the development of quantifying quality costs, total quality control and reliability engineering, another branch of the quality discipline, zero defects, emerged. The concept of zero defects was generated around 1961-62 by Philip B. Crosby, who was in charge of quality for the Pershing missile project at Martin Corporation. Zero defects focused on management expectations and the human relations side of quality improvement. The main point of zero defects was that although causes of worker errors were lack of knowledge, lack of proper facilities, and lack of attention, lack of attention was the most important one and the last one addressed by management. The result of the zero defects concept was the development of a training, goal-setting, personal feedback system to motivate individual employees to quality improvement (Gagne, 1992; Garvin, 1988).

As the quality profession evolved in the United States, Japan had their quality management movement as well. In 1910, a standardization movement began in Japan. Ten years later, they established their first engineering standards for product inspection. Japan's quality improvement was primarily limited to inspection prior to World War II. Japanese quality control methods were so haphazard that they had a reputation for producing poor quality goods.

In 1945, the Civil Communications Section (CCS) within the General Headquarters of the Supreme Commander for the Allied Forces was installed after the takeover of Japan for the purpose of helping Japan upgrade their working environment. The CCS established a laboratory for offering seminars in production management and product quality. From the ideas learned from the American CCS engineers, the Union of Japan Scientists and Engineers (JUSE) was established and one of its major activities was to form the Quality Control Research Group (QCRG) in 1946. In 1949, the Ministry of International Trade and Industry (MITI) coordinated the development of Japan Industrial Standards (JIS). Standardization became a basic element in the Japanese quality movement (Bonstingl, 1992a; Gitlow, 1990; Garvin, 1988).

In 1950, for the purpose of rebuilding Japanese industry after the war, Dr. W. Edwards Deming, a statistician who had worked at the Bell Laboratory with Dr. Walter Shewhart, was invited by JUSE to speak to Japan's leading industrialists about the disciplines of statistical quality control. In 1954, Juran was invited to Japan too to teach his quality knowledge to Japanese business people. The Japanese business and industrial leaders adapted and put into effect the teachings of Deming and Juran. Based on the ideas learned from the American quality professions, Japan developed their own quality management innovations, Quality Circles and Kaizen

(Bonstingl, 1992; Gitlow, 1990). Quality Circles, as Nonaka (1993) noted, originated in Japan in 1962. Quality Circles can be defined as a group of employees who perform similar work voluntarily meeting and working together to analyze and to resolve quality problems. Kaizen, noted by Garvin (1988) had four elements:

1. Involvement of functions other than manufacturing in quality activities
2. Involvement of all employees
3. The goal of continuous improvement
4. Strong customer orientation. (p.191)

According to Imai (1986), Kaizen was "the most important concept in Japanese quality management" (p.xxix). Meaning continuous improvement, Kaizen encompass the entire Japanese quality process, including Total Quality Control (TQC) or Company Wide Quality Control (CWQC), and zero defects (1986). Up to this point, Japanese quality, productivity and competitive position were improved and strengthened tremendously. The quality of Japanese products began to surpass American-made goods.

Back in America, companies began to be threatened by foreign competition in the 1970s. The nation's leadership in quality had been almost imperceptibly eroding for years. Increased customer interest in quality and foreign competition forced American management to become more concerned with quality. The late 1970s and 1980s were marked by striving for

quality in all aspects of business and service organization. The era of "strategic quality management" began. The focus of quality was on the entire system and involved all individuals in the organizations. Top level managers showed their interest in quality and put quality management in the strategic planning process. Because numerous studies demonstrated that quality-oriented organizations do much better in market share and profits, and consumer surveys showed that nine of ten buyers in 1990 place a first value on quality, total quality management was considered as the means to organizational survival (Seymour, 1992; Gitlow, 1990; Feigenbaum, 1985). As Feigenbaum (1985) observed, "success in responding to the new emphasis upon quality throughout the markplaces of the world has become an essential determinant for the health, growth, and economic viability of companies" (p.21).

In 1987, the Malcolm Baldrige National Quality Improvement Award was signed by President Reagan to demonstrate the growing commitment and concern of business and government leaders about the quality and competitiveness of American products and service (DeCarlo & Sterett, 1990). According to President Clinton, "Continued emphasis on quality by American companies is critical. The Malcolm Baldrige National Quality Award is a significant effort to promote quality awareness by recognizing and publicizing the

successful quality strategies of American business" (American Society for Quality Control, 1992, p.71). Many of President Clinton's economic advisors advocate the principles of TQM as important strategies that can help turn around troubled American business (Rivers, 1993). The pursuit of quality has become essential for today's organizations.

Garvin (1988) concluded this quality era by stating, "Strategic quality management is more an extension of its predecessor. Aspects of both quality assurance and statistical quality control can be seen at companies adopting the new approach. The strategic approach to quality is more comprehensive than its predecessors, more closely tied to profitability and basic business objectives, more sensitive to competitive needs, the consumer's point of view, and more firmly tied to continuous improvement " (p.27). Seymour (1992), after analyzing the four eras of the development of total quality management, remarked that quality has evolved from a limited set of statistical techniques used only at the factory level to a comprehensive management process and system which has been applied successfully in organizations of all types and sizes.

From Dr. Shewart's statistical quality control to today, the development of total quality management principles is based upon a number of quality theorists' contributions. Among them, the three leading and most widely adopted quality

experts and their theories are: W. Edwards Deming and his 14 points, Joseph M. Juran and his quality breakthrough, and Philip B. Crosby and his zero defects theory.

In the next section, the principles of total quality management will be presented and discussed by reviewing the ideas of these TQM leaders.

Total Quality Management Principles and Theories

The review of literature suggested that the definitions of Total Quality Management (TQM) are varied depending on the different perspectives of the authors. TQM is seen as a management system, a philosophy, a set of tools, a process, and organizational development models. In general, TQM is considered as a management system based on supportive leadership of management and involvement of all individuals of the organization. It demands a commitment to continual improvement and its purpose is to reconstruct, not to reestablish, excellence.

Dr. W. Edwards Deming is the best known quality theorist. He helped reconstruct Japanese business and made them number one in quality throughout the world. He is considered a founder of TQM. Gagne (1992) noted that Deming has been called the founder of the Third Wave of the Industrial Revolution.

Deming identified quality as seen through the eyes of workers, managers and consumers. He devised 14 principles or

points to management for achieving quality excellence. Deming's (1986) 14 points for continual improvement of organizational performance are presented in the following:

1. Create constancy of purpose toward improvement of product and service, with the aim to become competitive and stay in business, and to provide jobs.
2. Adopt the new philosophy. We are in a new economic age. Western management must awaken to the challenge, must learn their responsibilities, and take on leadership for change.
3. Cease dependence on inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product in the first place.
4. End the practice of awarding business on the basis of price tag. Instead, minimize total cost. Move toward a single supplier for any one item, on a long-term relationship of loyalty and trust.
5. Improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly decrease costs.
6. Institute training on the job.
7. Institute leadership. The aim of supervision should be to help people and machines and gadgets to do a better job. Supervision of management is in need of overhaul, as well as supervision of production workers.
8. Drive out fear, so that everyone may work effectively for the company.
9. Break down barriers between departments. People in research, design, sales, and production must work as a team, to foresee problems of production and in use that may be encountered with the product or service.
10. Eliminate slogans, exhortations, and targets for the work force asking for zero defects and new levels of productivity. Such exhortations only create adversarial relationships, because the bulk

of the causes of low quality and low productivity belong to the system and thus lie beyond the power of the work force.

- 11a. Eliminate work standards (quotas) on the factory floor. Substitute leadership.
- 11b. Eliminate management by objective. Eliminate management by numbers, numerical goals. Substitute leadership.
- 12a. Remove barriers that stand between the hourly worker and his right to pride of workmanship. The responsibility of supervisors must be changed from sheer numbers to quality.
- 12b. Remove barriers that rob people in management and in engineering of their right to pride of workmanship. This means, inter alia, abolishment of the annual or merit rating and of management by objectives.
13. Institute a vigorous program of education and self-improvement.
14. Put everybody in the company to work to accomplish the transformation. The transformation is everybody's job. (p.23-24)

These 14 points are the basic elements of Deming's operational theory of management. Developed more than 40 years ago, the 14 points laid the foundation for Total Quality Management. The Deming approach is based on leadership through understanding, continuous improvement through personal growth and education, constancy of purpose, and elimination of barriers to self-fulfillment. According to Deming (1986) quality is not an entity but a way of doing things, a way in which desired states are translated into concrete process. Companies that dedicate themselves to this new philosophy are experiencing an awakening of pride and productivity throughout

their operations (Deming, 1986; Walton, 1986).

Dr. Joseph M. Juran has written and lectured widely on the topic of quality management. According to Juran (1988; 1979) it is management's responsibility to establish top-level plans for quality improvement. Juran encourages projects as a means to achieve quality improvement. Through his years of research on the principles of management for quality, Juran identified a managerial process to move quality management from theory to practice.

Juran (1979) defined the quality mission for management on two levels. The quality mission of the company is "fitness for use" as perceived by customers. Fitness for use is determined by a product's design, the degree to which the product conforms to the specifications of that design, the product's availability, reliability and maintainability, and the customer service available.

The missions of individual departments in the company are to work according to specifications designed to achieve fitness for use. To achieve the quality mission, it should follow the three quality processes: quality planning, quality control and quality improvement--known as the Juran trilogy.

1. Quality planning. This is the process for preparing to meet organizational goals. It includes identifying internal and external customers, determining customer needs, developing a product or

service that meets the customer's want and need and establishing a process that is capable of meeting the quality goals.

2. Quality control. This phrase refers to the process of meeting the goals under operating conditions. Statistical control techniques will be used to measure and restore the performance system to the quality standard level. This control sequence is defensive or reactive in nature and calls for many people to perform a lot of little things well.
3. Quality improvement. This phrase relates to changing performance to a significantly improved quality standard level. The process is proactive in nature and calls for a few people to perform a few big things well.

Juran's quality improvement methodology stresses a project-by-project implementation. With his "fitness for use" definition of quality, Juran is strongly oriented to meeting customer's expectations (Lowe & Mazzeo, 1986).

Philip B. Crosby is the quality expert known for coming up with the concept of zero defects in the early 1960s. Crosby developed the 14 step implementation plan that helps a company move toward zero defects. Gagne (1992) summarized Crosby's 14 steps to quality improvement in the following list:

1. Make it clear that management is committed to quality.

2. Form quality improvement teams with representatives from each department.
3. Determine where current and potential problems lie.
4. Evaluate the cost of quality and explain its use as a management tool.
5. Raise the quality awareness and personal concern of all employees.
6. Take actions to correct problems identified through previous steps.
7. Establish a committee for the zero defects program.
8. Train supervisors to actively carry out their part of the quality improvement program.
9. Hold a 'zero defects day' to let all employees realize that there has been a change.
10. Encourage individuals to establish improvement goals for themselves and their groups.
11. Encourage employees to communicate to management the obstacles they face in attaining their improvement goals.
12. Recognize and appreciate those who participate.
13. Establish quality councils to communicate on a regular basis.
14. Do it all over again to emphasize that the quality improvement program never ends. (p.6)

Crosby (1984) defined quality as conformance to requirements. The main strength of Crosby's approach is the attention it gives to transforming quality culture. His philosophy stresses presentation as the key to producing defect-free work and emphasizes the importance of leadership and human resources education in the quality process.

While there are significant differences among the theorists and their principles, some basic concepts that are considered as foundations of TQM are: strong quality leadership, customer focused, team-building, continued quality improvement process, training, systematic problem solving, application of statistical tools, open work environment and systematic operations (Seymour, 1992; Texas Department of Commerce, 1992; Bryce, 1991; Cornesky et al., 1991). Although each quality expert has his/her individual principles to address total quality management, the result of their approaches is the same: world-class quality. An organization selects the expert's approach that is most consistent with its culture and quality philosophy or gets benefits by combining principles from these quality theorists. According to Seymour (1992) the expansion of quality concepts ensured that total quality management could be applied not only in business and industry, but also in public organizations as well as in education.

Total Quality Management in Education

Education reforms often developed from ideas that began in industry. In fact, the area of educational administration originated from the scientific management movement in the early 1900s. School boards picked up the ideas from Taylor's scientific management theory by using extrinsic motivation and product specifications to define standards of output

performance. As a result, educational administration is closely aligned with the principles and practices of business and industry (Holt, 1993; Lewis, 1993).

In the 1980s, the movement of Total Quality Management has spawned a new American revolution. Quality has become a watchword in every aspect of life. TQM principles and practices are revitalizing business, government, industry, and the world of education. As Schick et al. (1992) observed, just as business organizations that are challenged in this highly competitive environment to achieve quality in their services and products, the academic institutions are expected to provide excellent quality education. It is suggested by Schargel (1993) that there are three waves of total quality management. The first wave of quality began when Dr. Deming brought the concept of quality to Japan in the 1950s; the second wave occurred when the ideas of total quality management were practiced by American business and industry in the 1980s. Now, the third wave of total quality management is total quality in education.

Meade (1991) noted that TQM is a philosophy with its roots in the business world, however, it transcends the narrow disciplines and finds new disciplines in education. Bonstingl (1992b) stated that, "Total Quality Management, at its heart, is dedicated to bringing out the best qualities in every human being and the work people do together. In many ways, TQM is

a natural fit with the hopes and aspirations of educational leaders in their work to improve schools" (p.5).

The implementation of TQM in education started around the 1980s. However, which institution or school district is responsible for being the first to implement Total Quality Management can not be identified. According to Lewis (1993), it is generally believed by practitioners of quality in education that the Mt. Edgecumbe High School in Sitka, Alaska, was the first school to become involved with Total Quality Management. The school's educational management process, known as the Continuous Improvement Process (CIP) involves reshaping the teacher-student relationship from a teaching/learning process into a team process. According to David Langford, one teacher of the Mt. Edgecumbe High School then, and now a TQM consultant, the implementation of TQM began after his visit at a sister school, Gilbert High School in Phoenix, Arizona. He observed TQM being implemented in a business class at Gilbert High School. He was so impressed that he attended a Deming seminar and then started to try the principles of TQM at Mt. Edgecumbe High School (Langford, 1993; Partin, 1992; Kelley, 1991).

Tribus gave his remark on the CIP implementation process and results after his visit at Mt. Edgecumbe:

Because Sitka is so remote, the administration and staff of Mt. Edgecumbe High School do not have the benefit of expert advice in Total Quality Management. They were forced to learn by reading and experimentation.

Not having anyone to warn them not to do so, they simply began to apply Total Quality Management concepts to all aspects of the schools. David Langford instituted a course called, simply, "Continuous Improvement." The students in the course were encouraged to apply Total Quality Management to processes in the school, in nearby industry and, especially, to their own lives. They began to keep control charts on their own study habits. They attacked the design of the curriculum and, in collaboration with the teachers and administrators, changed the schedule of instruction.

Mt. Edgecumbe High School is a small school with an enrollment of approximately 200 students. These students are mostly minority, by which is meant they come from native indian villages, often in remote parts of Alaska. Apart from the oil industry, Alaska is a relatively poor state and in the rural areas there is a great deal of poverty. In previous years, before Mt. Edgecumbe High School was established in 1984, students from this population had a very high drop-out rate. Now, however, they not only are succeeding to graduate, but many go on to college and are still there. (in Partin, 1992, p.25-26)

The success of Mt. Edgecumbe High School shows that the principles of Total Quality Management can be applied in education. In fact, the findings of a comprehensive research project conducted by Seymour (1991) on 23 pioneering colleges and universities with TQM program implementation indicated that TQM can really make a difference in improving education quality. The benefits of TQM on campus include: (a) an institution's ability to be responsible and accountable for the services it provides is strengthened; (b) people feel a new emphasis upon their value and input; (c) there is a better understanding of each person's ability to make a decision; (d) employees' and students' satisfactions are improved; (e) the time required to complete a process is reduced; (f) school

climate is changed with improved morale; (g) decision-making is based more on data and facts; (h) people of various departments of the school system have chances to work together; (i) all personnel know better about the mission and purposes of education; (j) money, rework and employee waste is reduced (Seymour, 1991). The American Society for Quality Control's survey findings (Horine et al., 1993b) report that the success gained through applying TQM included increased employee empowerment, customer satisfaction, teamwork, and cultural change.

Starting from 1991, the American Society for Quality Control has conducted annual survey research to monitor the colleges and universities as they pursue total quality management. The result is a list of those institutions which have implemented TQM in their administrations or offered quality-related courses to their full-time students. In 1991, the list included 78 four-year colleges and universities and 14 two-year community colleges. In 1992, there were 160 four-year universities and colleges and 60 two-year community colleges represented in the list. The American Society for Quality Control conducted similar surveys to identify school districts which use the principles of TQM to improve their schools. In 1992, there were 65 school districts on the list. In 1993, 105 of the nation's public and private school districts responded to the survey. Comparing the numbers of

respondents in the two year's surveys, there is an explosion of interest in TQM in the education sector. A growing number of schools are embracing the principles of TQM (Horine, Hailey & Rubach, 1993a; Axland, 1992a).

As the number of schools implementing TQM principles is rapidly increasing, Congress has recognized the need for national leadership to advance quality in education. Three legislators have introduced bills that would establish national education quality awards. Indiana Representative Tim Roemer's bill would establish a fourth Malcolm Baldrige National Quality Award category for education. The National Quality Commitment Act of 1992, introduced by Senator Pete Domenici of New Mexico, would create an annual award for colleges and universities that teach and model total quality management. Representative Don Ritter of Pennsylvania has introduced a bill to establish the National Commitment to Quality Award, which would encourage and recognize American higher education institutions which offer courses related to total quality management and/or apply principles of TQM in their operations (Axland, 1992b). In 1991 the National Educational Quality Initiative was established to improve the quality of the Nation's education system (Caplan, 1992). In the same year, the American Association of School Administrators created the Total Quality Management Network to help educators use Deming's principles in transforming the

management of the schools (Richie, 1992).

Quality in education, according to Lewis (1993), refers to "a cooperative system in which both customers (students, teachers and parents) and providers (school administrators, teachers, and other personnel) mutually agree to, and meet the needs, requirements, and expectations of customers on a continuous basis" (p.9). Shenkat (1993) noted that TQM principles are developed to restore intrinsic motivation, cooperation, dignity and joy in learning. For both students and teachers, that is what schools and learning should be about.

Total quality management in education is defined by the advisory committee of Moore-Norman Voc-Tech Center (1992) as "a philosophy of leadership that results in commitment by everyone in the organization to continuously improve the processes by which quality products and services are supplied to customers with decisions based on fact and achieved by teamwork. TQM means dedication to being the best; to delivering high quality services which meet or exceed the expectations of the customer " (p.3). The Texas Association of School Administrators (1992) defined Total Quality Management as, "a strategic, integrated management system of achieving client satisfaction which involves all administrators, teachers, and other employees and uses quantitative methods to continuously improve the

organization's services and products" (p.1).

In order to make the principles of TQM fit better into the administration of educational systems, educators have translated or modified TQM principles for education. By combining the principles developed by the quality experts, such as Deming and Juran, Bonstingl (1992b) developed the Four Pillars of Total Quality Management. Schenkat (1993) established a process to achieve quality education by organizing the principles of Deming and the Baldrige Award criteria. Combining the categories of the Baldrige Award and Deming's 14 Points, Lewis and Smith (1994) build a House of Quality. Kaufman and Zahn's Quality Management Plus for continuous improvement of education is developed by their extension of the principles of total quality management principles and their ideas of ideal vision (Kaufman & Zahn, 1993). Blending TQM principles and control and motivation theory, Glasser (1990) created a set of quality concepts to build a quality school. Spanbauer and Hillman adopted Crosby's 14 steps to develop their Quality First Process Model (1987). Several authors have modified Deming's 14 Points for education: Kaufman & Zahn (1993), Lewis (1993), Bonstingl (1992a), Fellers (1992), Langford (1992), Rankin (1992), Leonard (1991), and Cornesky et al. (1992; 1991).

Langford's Modified Points for Continuous Improvement of Education (1992), as listed below, is considered the most

original translation of Deming's principles for education.

1. Create constancy of purpose toward improvement of students and service. Aim to create the best quality students capable of improving all forms of processes and entering meaningful positions in society.
2. Adapt the new philosophy. Educational management must awaken to the challenge, must learn their responsibilities, and take on leadership for change.
3. Work to abolish grading and harmful effects of rating people.
4. Cease dependence on testing to achieve quality. Eliminate the need for inspections on a mass basis (standardized achievement test, minimum graduation exams etc.) by providing learning experiences which create quality performance.
5. Work with the educational institutions from which students come. Minimize total cost of education by improving the relationship with student sources and helping to improve the quality of students coming into your system. A single source of students coming into a system such as Jr. high students moving into a high school is an opportunity to build long term relationships of loyalty and trust for the benefit of students.
6. Improve constantly and forever the system of student improvement and service, to improve quality and productivity.
7. Institute education and training on the job for students, teachers, classified staff and administrators.
8. Institute leadership. The aim of supervision should be to help people use machines, gadgets and materials to do a better job.
9. Drive out fear, so that everyone may work effectively for the school system. Create an environment which encourages people to speak freely.
10. Break down barriers between departments. People in teaching, special education, accounting, food service, administration, curriculum development,

and research etc., must work as a team. Develop strategies for increasing the cooperation among groups and individual people.

11. Eliminate slogans, exhortations, and targets for teachers and students asking for perfect performance and new levels of productivity. Exhortations create adversarial relationships. The bulk of the causes of low quality and low productivity belongs to the system and thus lie beyond the control of teachers and students.
12. Eliminate work standards (quotas) on teachers and students, (e.g. raise test scores by 10%, and lower dropouts by 15%). Substitute leadership.
13. Remove barriers that rob the students, teachers, and management (principals, superintendents and central office support staff) of their right to pride and joy of workmanship. This means, inter alia, abolition of the annual or merit rating and of management by objective. The responsibility of all educational managers must be changed from quantity to quality.
14. Institute a vigorous program of education and self improvement for everyone.
15. Put everybody in the school to work to accomplish the transformation. The transformation is everybody's job. Quality is considered as a relative phenomenon, rooted in the individual institutions, and differs from every other school in many ways. (p.2)

Although the principles of TQM are sound, implementing success is varied depending upon the leadership of management and strategies employed to achieve the institution's goals of quality improvement. Seymour and Collett (1992) claimed that quality in education is considered as a relative phenomenon, rooted in individual institutions, and differs from every other school in many ways. Whichever TQM principles or approaches an institution employs, there should be an

appropriate link between the TQM principles and the school's overall culture and mission. This link can only be established successfully by the total quality leadership of the central administrator or the administrative head of the institution.

Total Quality Leadership

Although quality theorists espouse different principles of quality management, one thing they have in common is that they all claimed that supportive leadership from top management is relatively crucial for making total quality management a success. These three best known quality experts all begin their quality road map by emphasizing top management leadership of total quality. All 14 of Deming's points are obligations of management leadership toward quality. Similarly, Juran urged (1988) all management levels to provide hands-on leadership in quality improvement by taking on their own quality projects. Deming and Juran both maintained that 85% of the problems are management controllable and not worker controllable (Gagne,1992). Crosby's 14-step process to zero defects also starts with the committed leadership of top management about total quality. Deming (1986) insisted the responsibility for quality processes and outcomes rests with management. Without the supportive leadership from the top of the organization, the quality efforts can not be accomplished. Juran (1988) noted that one of the basic steps to quality progress is upper management leadership. Poor leadership

actions from top management will result in poor quality. Crosby (1984) claimed that management must provide the leadership to compel an enterprise in which quality is never compromised.

The concept of leadership is the central principle of quality improvement. Leadership, maintained by Lewis and Smith (1994), is a catalyst for positive change, and quality management efforts require positive changes. It was claimed by Bonstingl (1992b) and Deming (1986) that strong and supportive quality leadership coming from top management is the key to TQM success. Waterman suggested that people, under proper leadership, will participate in meaningful tasks with the intention of changing their organization from one of non-quality to one of high quality (1990). Thor (1993) stressed that TQM programs will fail if the leaders fail to lead. Seymour (1992) pointed out that when it comes to quality, there is no substitute for leadership because "quality is leadership".

Total quality leadership is defined as the behaviors or actions a leader demonstrated in directing or leading his or her followers to make a success of fulfilling expectations of quality. However, what specific behaviors or actions are considered as leadership behaviors of total quality? A great many studies have been conducted to identify total quality

leadership behaviors as performed by administrators and managers.

To obtain comprehensive information about the quality leadership behaviors a manager needs to perform in order to achieve success in TQM implementation, Darling (1992) conducted a study by interviewing over 100 managers and administrators who have been recognized as successful managerial leaders in different types of organizations that have implemented total quality management. Based on the data collected from these individuals, Darling found these successful leaders shared four key quality leadership strategies:

1. Attention through vision: the administrators or managers create a clear quality focus to gain attention from people.
2. Meaning through communication: the managers or administrators talk openly and sensitively with followers so that the people of the organization can understand the meaning of their quality message.
3. Trust through positioning: the managers or administrators make themselves known and make their position clear in order to establish trust from individuals of the organization.

4. Confidence through respect: the administrators or managers spend time with subordinates and concern with issues relating to people in order to build confidence for both themselves and their followers.

Darling recommended a leader in total quality management should be a person who inspires, by appropriate total quality leadership behaviors, to influence individuals of the organization to be willing to achieve the organization's quality goals (1992). Leadership is a key category of the nationally recognized quality award, the Malcolm Baldrige Award, for determining quality in organizations. Although no more than six companies can receive the award annually, the number of requests for the application forms has risen from 12,000 in 1988 to 65,000 in 1989; 180,000 in 1990; and 235,000 in 1991 (Shenkat, 1993). Garvin (1991) made his comment on the impact of the Award on America's organizations by stating, "It has reshaped managers' thinking and behavior...It provides companies with a comprehensive framework for assessing their progress toward the new paradigm of management" (p.80).

The Conference Board study (1991) reported that strong leadership at the top equates with Baldrige award-readiness. Under the leadership category of the Baldrige Award criteria, there are four sub-categories for quality leadership examination: senior executive leadership, quality values, management for quality and public responsibility. Schenkat

(1993) noted the leadership behaviors of the Baldrige leadership criteria are as follows:

1. Display quality leadership personally and actively, as recorded in logs or calendars or in employee feedback of leader's involvement in TQM.
2. Make TQM the first item on the company agenda.
3. Demonstrate an intimate knowledge of how the company actually works.
4. Convey a clear, concise mission statement that includes quality.
5. Integrate quality values into the organizational approach, as seen in all major decisions.
6. Personally train managers in quality and see that they reinforce quality in the workplace.
7. Include quality values in all employee training activities.
8. Foster cooperation and not competition across functions, maximizing cross-functional teams.
9. Communicate quality values to the public. (p.38)

A study conducted by the Forum Corporation (1992) to identify the dimensions of leadership behaviors required for the successful implementation of total quality management showed that in successful quality-focused organizations, their

senior managers consistently perform such leadership behaviors as:

1. They model the appropriate quality behaviors.
2. They accept that quality was a long-term improvement process.
3. They involve their employees in decision-making, direction-setting and problem-solving.
4. They are the spokespeople for quality.
5. They promote continuous learning.
6. They put their customers first.
7. They facilitate cross-functional team communication.

(in Dowling, 1992, p.37)

Tom Peters, who analyzed exemplary firms in his books In Search of Excellence, claimed that the main difference between exemplary companies and others relates directly to leadership. He (in Brandt, 1992) cited quality research showing that 80% of TQM programs failed to produce tangible benefits in organizations mainly due to leaders of the organizations who never change their attitudes and behaviors to perform quality leadership. Peters suggested that leaders should demonstrate such behaviors as coaching, effectively "wandering around" and using symbols throughout the organization.

In order to achieve quality excellence, he identified the following "quality musts" leaders need to perform:

1. Customer-first orientation

2. Clearly defined organizational mission and standards
3. Supportive and innovative organizational climate
4. Simple, lean management staff
5. Service posture of management toward employee
6. Manager-as-developer of people
7. Management remains close to the action
8. Intelligent use of human intelligence
9. Teamwork
10. Traditional hierarchal structure replaced by
"networks"
11. Empowerment given to the people
12. Education and Training
13. Eighty percent of defects are management controllable
14. Statistical methods used to solve problems
15. Quality improvement never ends
16. Quality improvement is everyone's responsibility.

(in Spanbauer & Hillman, 1987, p.14)

Chaffee (1993) suggested that the characteristics of quality improvement-oriented leaders should include the following:

1. Inquire
2. Listen and respond
3. Use data
4. Focus on processes
5. Cooperate

6. Expand the market
7. Invest in human capital
8. Satisfy the customer

Leffel et al. (1991) claimed that the responsibilities of leadership for Total Quality Management in higher education include the following:

1. Define where we are and what we look like
2. Define where we are going and how we will move along the road of continual improvement, and disseminate this vision broadly
3. Project and demonstrate by example university values that emphasize quality
4. Inspire, motivate and value all personnel in orchestrating concerted action along the road to TQM
5. Remove organizational barriers between institutional units and levels of the hierarchy that impede cross-functional teams
6. Incorporate learning, problem solving, and risk taking as strong elements of an institutional culture that seeks TQM
7. Celebrate success-- and celebrate them again. (p.64)

Lewis (1992) contend that central school administrators should perform the following leadership actions to demonstrate their support for total quality management:

1. Approve a budget for total quality management.

2. Provide adequate time for total quality management, including attending quality meetings, providing training and visiting benchmarking schools or organizations.
3. Join national professional quality associations.
4. Organize a quality steering committee.
5. Conduct stump speech.
6. Retain a total quality consultant.
7. Create a strategic vision and quality policy.
8. Tie recognition to total quality.
9. Put quality first on a board agenda.
10. Get teachers to support quality in the classroom.
11. Have leadership involvement in total quality activities.

The U.S. General Accounting Office (1991) reported that the organizations that successfully pursued total quality management all had one thing in common---strong top management quality leadership. Their senior management led the way--modeled--the building of quality values into all operations. The 1991 United States General Accounting Office Report to the United States House of Representatives (United States General Accounting Office, 1991) listed features which contribute to improving quality, four focused on the leadership behaviors of top management:

1. Management led the way in disseminating TQM values throughout the organization.
2. Management nurtured a flexible and responsive corporate culture.
3. Management developed corporate attention focusing on meeting customer quality requirements.
4. Management systems supported fact-based decision-making. (p.29)

Findings of research implemented by Rath and Strong Consulting (Fortune, 1992) proved that Total Quality Management works only when the CEO visibly backs it. The research identified eight key quality leadership behaviors chief executive officers must have:

1. Work with employees to decide what the company should be.
2. Focus quality effort on customer service, not on cost cutting.
3. Show willingness to change everything.
4. Set up pilot programs where employees learn how to solve problems.
5. Let workers make changes they suggest.
6. Reward employees for improving the way the company serves its customers.
7. Keep workers informed on the success or failure of the quality program.

8. Stay actively involved throughout the quality effort.

To measure performance on different dimensions of quality management, Flynn et al. (1990) developed a unique instrument which was tested with 712 Japanese and U.S. workers and was found to have strong reliability and validity. The five items which fall under the "top management support for quality" dimension are of particular interest for this study.

1. All major departments heads within our plant accept their responsibility for quality.
2. Plant management provides personal leadership for quality products and quality improvement.
3. The top priority in evaluating plant management is quality performance.
4. All major department heads within our plant work towards encouraging participation.
5. Our top management encourages employee involvement in the production process.

In a study of the leadership habits required to build strong relationships between managers and employees in TQM implementation, Harbidge House (1984), a Boston consultant company, found leaders who build strong relationship with subordinates always behaved in the following ways:

1. Provides clear direction
2. Encourages open communication

3. Coaches and supports people
4. Provides objective recognition
5. Establishes ongoing controls
6. Selects the right people to staff the organization
7. Understands the financial implications of decisions
8. Encourages innovation and new ideas.

After reviewing the literature of quality management, Dowling (1992) concluded that the following quality behaviors of senior managers may be required to facilitate commitment to quality in their subordinates:

1. They understand and focus on process management including interdepartmental interfaces.
2. They set and communicate clear goals.
3. They encourage in-process presentation, rather than end of the line inspection.
4. They monitor product and service performance and operationalize congruent evaluation and reward systems.
5. They understand the resources required to produce a defect-free product or service and allocate appropriate resources.
6. They understand the statistical techniques used to measure quality performance.
7. They personally receive and review quantitative reports on product and service performance.

8. They require attendance at training classes on quality and quality measurement techniques.
9. They involve customers and suppliers in determining product specifications.
10. They personally attend and frequently lead meetings on the subject of quality. (p.39-40)

Finally, in his study of the quality in the room air conditioning industry in Japan and the U.S., Garvin (1988) found that in organizations with superior quality performance, their senior or top management provided active quality leadership behaviors such as the following:

1. They are willing to take time from their busy schedule to attend quality meetings.
2. They get involved in addressing quality issues with subordinates.
3. They take responsibility for quality and heighten their organizations' sensitivity to quality.
4. They insist on quantitative and systematic measures relating to quality performance.
5. They encourage quality improvement with proper incentives.
6. They develop systematic goals and similar visions on quality improvement.
7. They develop quality information systems by which information is detailed and reported to high levels

in the organizations.

Based on the literature presented, it can be concluded that the following leadership behaviors can be considered as the behaviors of total quality leadership the top management or administrators have to perform:

1. They actively walk around every department of the organization to understand the happenings of the system and the people.
2. They convey a clear mission statement that emphasize quality.
3. They communicate openly and sensitively with individuals of the organization.
4. They take time to participate in quality meetings or other quality related activities.
5. They have a clear idea about the application and interpretation of statistical quality control techniques.
6. They review and discuss the performance reports of quality with other personnel.
7. They provide personal feedback about subordinates or other personnel's quality improvement work.
8. They position their leadership toward quality clearly to gain subordinate's trust.
9. They offer a budget for letting personnel have training and education to learn about TQM.

10. They personally participate in the quality training and education activities to learn about TQM.
11. They involve internal customers, e.g. students, staff, faculty; and external customers, e.g. employers, parents, to determine the quality specifications of the products or service.
12. They establish a quality team or assign quality personnel to coordinate the activities related to the TQM implementation.
13. They prioritize quality as the first requirements of their services and products.
14. They take responsibility for the failures or mistakes that happens in the organizational system.
15. They share their TQM effort with other organizations.
16. They provide objective recognition or rewards for acknowledging subordinate's efforts on improving quality.
17. They promote networking among institutional units.
18. They work with the quality team or quality personnel to plan and decide activities of their TQM program.
19. They establish a quality information system to keep themselves and other individuals of the organization informed about the success and failure of the quality efforts.

20. They encourage and accept new ideas or innovations for changes for quality.
21. They allocate appropriate resource, e.g. money, workforce, facilities, required to make the TQM progress.
22. They empower their subordinates to try to take charge of their work.
23. They encourage cooperation and teamwork across departments and functions.
24. They see TQM as a long-term improvement process rather than a short-term innovation.
25. They personally act as spokespeople for quality.

Summary

This section of the literature review of total quality management was based primarily on the related literature from the field of education and the area of business and industry. The evolution of total quality management was first presented to provide an overview of the historical development of the concepts and theories of total quality management. Garvin's four eras of the quality movement -- inspection, statistical quality control, quality assurance and strategic quality management -- were used to organize the different developmental characteristics of total quality management evolution stages. Theories and approaches of total quality

management were presented focusing on the propositions of Deming, Juran and Crosby. A discussion of Deming's 14 points, Juran's trilogy, and Crosby's 14 steps provided a theoretical foundation for the principles of total quality management.

The implementation of total quality management started around the 1980s. The development of total quality management in education was discussed. A presentation of the modified principles of total quality management for education and the efforts in pursuit of total quality in education were given.

Following the presentations of historical evolution, principles and theories, and development in education of total quality management, a discussion of total quality leadership was presented. Studies and research of total quality leadership were reviewed and synthesized to provide a framework for the total quality leadership behavior portion of the study.

CHAPTER III

METHODOLOGY

Introduction

This chapter delineates the methodology which was used to achieve the purpose and objectives of this study. An indepth discussion of each of the following research procedures is provided: (a) population, (b) research design, (c) instrumentation, (d) data collection, and (e) data analysis. A list of the timeline and major tasks followed to complete the study is provided in Appendix A.

Population

The population for this study consisted of the presidents and the administrators or faculties responsible for TQM implementation in the 120 four-year universities and colleges in America that had implemented principles of TQM in their administration function as of May, 1993. These institutions were identified by the American Society for Quality Control (ASQC). A complete list of the institutions, name, address,

telephone number of the contacted responsible TQM implementation personnel or faculty for each school is reported in the October, 1993 issue of Quality Progress (Horine, Hailey & Rubach, 1993b).

Beginning from 1991, in order to monitor the quality management efforts of universities and colleges as they pursue total quality improvement, the American Society for Quality Control started to conduct annual surveys of the colleges or universities that might have implemented TQM or offered courses related to quality management in their schools. Each year, a complete list of the colleges and universities that respond to their survey will be provided in the October issue of the Quality Progress journal.

The latest list of the universities and colleges that were involved in total quality management was provided in the October, 1993 issue of Quality Progress journal. In May, 1993, the American Society for Quality Control sent out 425 surveys to institutions which were identified as members of various TQM networks or quality consortiums. Additional surveys were also mailed to higher-education executive officers in each state to ask for their assistance to forward the survey to schools actively involved in TQM. A total of 139 four-year universities and colleges responded to the survey. Among the 139 institutions, 120 universities and colleges in America were identified as having implemented

principles of TQM in their administration function (Horine, Hailey & Rubach, 1993b).

The presidents targeted for this study were the 120 presidents of the 120 four-year universities and colleges that were identified by the American Society for Quality Control. However, rather than surveying directly the 120 presidents, information on leadership styles and performance of the total quality leadership behaviors of the presidents of the 120 four-year institutions was obtained by surveying the responsible TQM implementation personnel or faculty of the respective president of each institution. The responsible personnel or faculty for TQM implementation of each respective president of each institution were the subjects for this study.

The target and accessible populations for the study were the same because a census method was used. All of the 120 responsible administrators or faculty members for TQM implementation of the 120 four-year universities and colleges identified by the American Society for Quality Control were surveyed.

Research Design

The objectives of the study were to determine:

1. The demographics of the responsible personnel or faculty for TQM implementation in four-year higher education

institutions that have implemented principles of TQM.

- a. Gender
 - b. Age
 - c. Ethnicity
 - d. Number of years working/teaching in the institution
 - e. Level of education degree
 - f. Major specialty area
 - g. Current position as an administrator or a faculty member
 - h. Familiarity with the principles of TQM
 - i. Length of time of TQM implementation
2. The leadership styles, consideration or initiating structure, of presidents as perceived by the responsible TQM implementation personnel or faculty in the four-year institutions that have implemented TQM.
 3. The perceptions of the responsible personnel or faculty of TQM implementation about their presidents' performance of total quality leadership behaviors in four-year higher education institutions that have implemented TQM principles.
 4. The relationship between the consideration leadership style and the performance of the total quality leadership behaviors of presidents as perceived by the responsible personnel or faculty for TQM implementation in four-year colleges and universities that have implemented TQM.

5. The relationship between the initiating structure style and performance of the total quality leadership behaviors of presidents as perceived by the responsible TQM implementation personnel or faculty in four-year colleges and universities that have implemented TQM.
6. The relationship between the demographic variables of the responsible faculty or personnel of TQM implementation and their perceptions of their presidents' consideration leadership style in four-year institutions that have implemented principles of TQM.
7. The relationship between the demographic variables of the responsible faculty or personnel of TQM implementation and their perceptions of their presidents' initiating structure leadership style in four-year institutions that have implemented TQM.
8. The relationship between the demographic variables of the responsible TQM implementation personnel or faculty and their perceptions of their presidents' performance of total quality leadership behaviors.
9. The difference between the responsible personnel and faculty for TQM implementation about the presidents' performance of total quality leadership behaviors.

To achieve the objectives of this study, a combination of descriptive and correlational measures were employed. According to Gay (1987), "A descriptive study determines and

reports the way things are... Typical descriptive studies are concerned with the assessment of attitudes, opinions, demographic information, conditions, and procedures" (p.189). Objectives one to three were achieved by applying the descriptive methodology.

"Correlational research involves collecting data in order to determine whether, and to what degree, a relationship exists between two or more quantifiable variables... The purpose of a correlational study may be to determine relationships between variables, or to use relationships in making predictions" (Gay, 1987, p.230). This research methodology was undertaken to achieve the fourth to eighth objectives.

A survey questionnaire was determined to be an appropriate means for collecting data for this research. According to Ary, Jacobs and Razavieh (1985), advantages of survey questionnaires are that the format is conducive to framing responses for ease in statistical analysis, it is self-administered and it is appropriate for a large number of subjects. The independent variable was the perceptions of the responsible TQM implementation personnel or faculty of their presidents' leadership styles in the four-year universities and colleges that have implemented total quality management in their administration function.

The extraneous variables were the demographics of the responsible personnel or faculty of TQM implementation. These demographic variables included gender, age, number of years working in the institution, major specialty area, familiarity with the principles of TQM, current position and length of time of TQM implementation.

The dependent variable was the perceptions of the responsible TQM implementation personnel or faculty of their presidents' performance of total quality leadership behaviors. To better understand the study, a model, presented in Figure 5, was developed to reflect the most logical arrangement of the relationships among the variables.

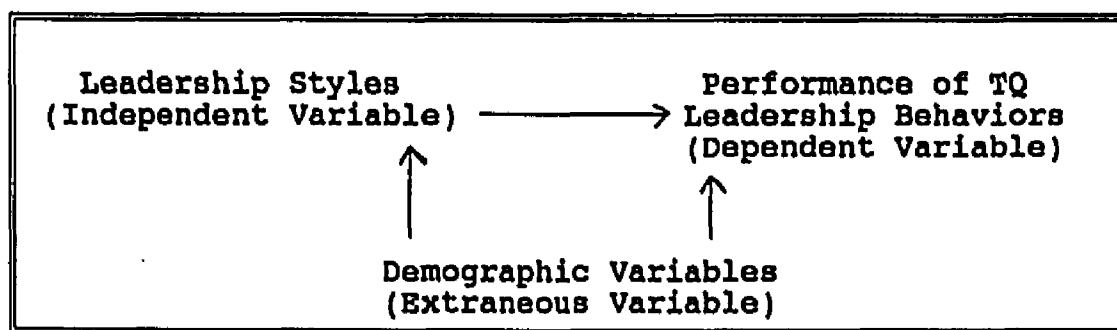


Figure 5. Relationships among the study variables.

Instrumentation

Two research instruments were used for this study. The Leadership Behavior Description Questionnaire (LBDQ), was used to collect data about the perceived leadership styles of the

presidents. The other questionnaire, designed by the researcher and named as the Total Quality Leadership Behaviors Questionnaire (TQLBQ), was used to collect data about the perceived total quality leadership behaviors of the presidents. A personal information questionnaire was also used to collect data about demographic characteristics. Examples of the instruments are provided in Appendix B.

Leadership Behavior Description Questionnaire (LBDQ)

The Leadership Behavior Description Questionnaire, or the LBDQ (see Appendix B), was developed by the researchers of the Personnel Research Board, The Ohio State University, as one project of the Ohio State Leadership Studies.

In order to develop an instrument to measure leadership styles, researchers of the Ohio State Leadership Studies compiled a list of about 1,800 descriptions of leadership behaviors. This list was reduced to 150 statements which the team of researchers agreed were appropriate examples of the important leader functions shown in the managerial literature. Using the 150 leadership behaviors statements, Hemphill and Coons (1957) constructed the original form of the LBDQ.

Most of the early development work of the LBDQ was involved in the research conducted in the military as well as in school settings. Halpin and Winer (1957) administered this questionnaire to samples of 300 air force personnel who were asked to provide their perceptions of their 52

supervisors. The questionnaire responses were factor analyzed to determine which behavior items were highly intercorrelated and to identify meaningful clusters of related items. The analysis showed that the subordinates perceived their leaders' behaviors primarily in terms of two distinct dimensions of leadership styles, namely, initiating structure and consideration. Initiating structure and consideration accounted for approximately 34 to 50% respectively of the common variance. (Yukl, 1989; Halpin, 1957; Halpin & Winer, 1957).

After his administration of the instrument to staff and faculty of 18 departments in a liberal art college, Hemphill found, based on his analysis of the respondents' description of their departments heads, that consideration and initiating structure were two fundamental dimensions of leader behaviors (Hemphill, 1955). In a subsequent study, on the basis of analysis of the responses of 249 military personnel, the correlation between the scores on the two categories was found to be .38 (Halpin, 1957). According to Halpin, initiating structure and consideration were separate and distinct dimensions of leader behaviors. The two leadership style categories were broadly defined to describe different leadership behaviors:

Initiating Structure: refers to the leader's behavior in delineating the relationship between himself/herself and the members of his/her group and in endeavoring to establish well-defined patterns of organization, channels of communication, and the ways of getting the job done.

Consideration: refers to behavior indicative of friendship, mutual trust, respect, and warmth in the relationship between the leader and the members of the group. (p.1)

Based on the analysis of the results from the initial studies, the original questionnaire was revised and reduced to 40 statements that were constructed to measure the two main dimensions of leadership behavior: initiating structure and consideration (Hemphill & Coons, 1957).

The LBDQ is composed of 40 short, descriptive statements of ways in which leaders may behave. It provides a technique whereby followers or group members of a leader can describe the leader's patterns of leadership behavior. A five-point Likert-type scale was used for rating the responses to the items. Respondents provide their perceptions of the frequency of their leader's engagement in each type of behavior by checking one of five adverbs: always, often, occasionally, seldom, or never (Halpin, 1966; Halpin, 1957). Typical items of the LBDQ are as follows:

1. He lets group members know what is expected for them.
2. He is friendly and approachable. (Bass, 1990, p.512)

Of the 40 items of the LBDQ, only 30 are scored. Fifteen items are for initiating structure and 15 items are for consideration. Ten unscored items have been retained in the questionnaire to keep the conditions of administration comparable to those used in standardizing the questionnaire. The score for each dimension is the sum of the scores assigned to responses marked on each of the 15 items in the dimension. The possible range of scores on each dimension is 0 to 60 (Halpin, 1957).

Bass (1990) noted that the LBDQ has a relatively high validity. The descriptions of initiating structure and consideration are highly stable and consistent from one situation to another. That means that no matter whether the instrument is administered in education, the military, industry or business, it yields a high validity. The descriptions of the LBDQ maintain high internal consistency as the basis for its construction. Items on the initiating structure behavior scale, independent of the consideration items, correlate highly with all the other initiating structure scales. Distinct from the items of the initiating structure scale, items of the consideration scale correlate highly only with items on the consideration scale. Halpin (1957) reported that in several studies, between-vs-within group analysis of variance has been used to check the agreement among respondents in describing their respective

leaders. The analysis results of all the studies showed that there has been a consistent agreement among the respondents in describing their leaders.

The reliability of the LBDQ is relatively high according to Bass (1990) and Halpin (1957). Bass (1990) suggested that the Cronbach's alpha reliabilities for scores on both dimensions were high, with .81 for initiation structure and .93 for consideration. Halpin (1957) reported that, after calculating the reliabilities of both factors by using the split-half method, the reliability of the initiating structure score was estimated at .83 and for consideration was at .92.

The LBDQ is one of the most used leadership questionnaires. It has been utilized by researchers in conducting studies related to leadership styles or behaviors in many situations. The LBDQ has been revised and expanded by behavioral researchers over the years, however, consideration and initiating structure are still the two major measures to determine a leader's leadership style. Consideration and initiating structure are the most frequently cited leadership style dimensions in the literature (Eagly et al., 1992; Bass, 1990; Hollander & Offermann, 1990; Yukl, 1989). Thus, results from this study should be relevant for a large portion of leadership research.

The LBDQ is firmly established and appears to have a legitimate theoretical framework. According to the manual of

the LBDQ, its validity and reliability have been tested in many studies. The LBDQ can be hand scored and administration is easy. The scope of the questionnaire is broad, dealing with interest in various areas like education, armed forces, industrial, business and other settings (Bass, 1990; Yukl, 1989; Bryman, 1986; Halpin. 1957). Because the scales of the LBDQ are broadly applicable to research, and it is more widely used in many academic fields than other leadership style questionnaires, it is considered an appropriate instrument for both communicating and understanding and as a useful resource for training and developing individuals' leadership.

Over the years, the LBDQ has been used extensively to measure leadership styles in education, industry, the military, government, business and different types organizations. Although developed around 1950, the LBDQ is still used widely by people in identifying leadership styles of leaders (Hollander & Offermann, 1990; Hall & Hord, 1987). As Halpin (1966) stated,

By measuring the behavior of leaders on the Initiating Structure and the Consideration dimensions, we can determine by objective and reliable means how specific leaders differ in leadership style... The Leader Behavior Description Questionnaire offers a means of defining these leader behavior dimensions operationally. (p.88)

Total Quality Leadership Behavior Questionnaire

There was no instrument which exactly met the needs of the study for measuring the performance of total quality

leadership behaviors. Therefore, an original questionnaire, namely the Total Quality Leadership Behavior Questionnaire (TQLBQ) (see Appendix B) was developed by the researcher.

There are two portions to the questionnaire, totalling 28 questions. The first portion consists of 20 items which focus on measuring the perceptions of the responsible personnel or faculty for TQM implementation about school president's performance of the total quality leadership behaviors. The questions of the first portion are five-point, Likert-type scales. The second portion has 8 items designed to collect the demographic information of the respondents. The 8 items require the respondents to select a response from among the several optional answers developed by the researcher or fill in the blanks to provide their appropriate answers.

The items of the questionnaire were developed by using the information and data gained from theories of total quality management and studies of total quality leadership behaviors. The development of the contents of the instrument represents a synthesis of Deming's 14 points (1986), Juran's trilogy (1988; 1979), Crosby's 14 steps (1984), elements of Kaizen (Imai, 1986), Bostingl's four pillars of total quality management (1992b), Langford's modified points for continuous improvement of education (1992), Glasser's principles of quality school (1990), Kaufman and Eahn's quality management plus (1993), the leadership criteria of the Malcolm Baldrige

Award (Shenkat, 1993), and studies and research findings of Garvin (1988), the Conference Board (1991), Darling (1992), Leffel et al. (1991), the U.S. General Accounting Office (1991), Rath and Strong Consulting company (Fortune, 1992), Flynn et al. (1990), Harbidge House consultant company (1984), Dowling (1992), Peters (in Spanbauer & Hillman, 1987), Chaffee (1993), and Lewis (1992).

Validity and Reliability

Validity and reliability are extremely important for quantitative instrumentation. Since the LBDQ has been considered as a standard questionnaire and its validity and reliability have been well established, validity and reliability checks were completed for the TQLBQ only. Three steps were followed to establish the validity and reliability of the TQLBQ. First, face and content validity of the TQLBQ were checked by a panel of experts. Second, content and construct validity of the instrument were checked during a field test. Third, data and information on the reliability of the instrument were collected and analyzed for the survey participants.

In order to establish face and content validity, a panel of experts consisting of professors who are knowledgeable of total quality management and research design at The Ohio State University was used to advise and improve the questionnaire (see Appendix C). The panel's purpose was to ensure items

measure what they were designated to measure, items would be interpreted the same, items did not reflect undue biases, and instructions were clear. Based on the recommendations of the panel of experts the instrument was rewritten and modified.

Following face and content validity checks through a panel of experts, content and construct validity were checked through a field test. Six assistant vice presidents and one quality improvement administrator for the Business Administration Executive Committee of The Ohio State University participated in the field test. The Ohio State University has been implementing the principles of total quality management during recent years (Jagtiani, 1994). Business Administration is a division within The Ohio State University, and the entire division is implementing total quality management. A cover letter, the TQLBQ and a self-addressed, stamped envelope were hand-delivered to the field test participants. The participants were requested to respond within 12 days. The final return rate for the field test was 71%, with 5 of 7 participants returning questionnaires. Suggestions made by the field test participants, after reviewing for content and construct validity, were used to revise and modify the final instrument.

The reliability of the TQLBQ was completed through the data gained from the survey participants. Cronbach's coefficient alpha was run to determine the internal

consistency of the items of the questionnaires. Cronbach's alpha for the summated test items for the performance of total quality leadership behaviors was .97. Such a high Cronbach's alpha showed that the TQLBQ had extremely high reliability.

With the establishment of the validity and reliability, the TQLBQ, together with the LBDQ, were administered to the responsible personnel and faculty for TQM implementation in the four-year institutions that have implemented TQM as indicated in Table 3.

Table 3

Administration of Instruments

Instrument	Instrument Type	Respondent	Respondent Size
LBDQ	40-item, 5-point, Likert-type scale	Responsible personnel or faculty for TQM implementation	120
TQLBQ	20-item, 5-point, Likert-type scale	Responsible personnel or faculty for TQM implementation	120
Demographic Information	8-item, circle answer & fill in the blanks	Responsible personnel or faculty for TQM implementation	120

Data Collection

A mail survey approach was used to collect data for this study. According to Fowler (1988), typical response rates to mail survey without the use of appropriate follow-up procedures are likely to be less than 30%. Therefore, Dillman's "total design method" for follow-up, which is to use strict follow-up procedures at set intervals after the initial questionnaire mailing, was applied for follow-up procedures in order to maximize response rate.

Creative incentives were enclosed in the mail package in order to increase return rate. For the initial mailing, a clear bag with two OSU pens and a thank you card was enclosed. For the second survey mailing, a blackberry tea bag decorated with smile face stickers and lace was enclosed. The following time schedule and procedures was followed for data collection.

August 13, 1994 -- An initial survey package was mailed to the entire census (N=120) of the responsible personnel or faculty for TQM implementation as identified by the American Society for Quality Control. Each subject in the population was assigned a three-digit code number for identification purpose. Each survey instrument was coded. This provided a mechanism to identify non-respondents and to facilitate follow-up.

The survey package which each subject received included:

1. A cover letter co-signed by the doctoral advisor of the researcher and the researcher (Appendix B).
2. The LBDQ instrument (Appendix B).
3. The TQLBQ instrument (Appendix B).
4. A clear bag with two Ohio State University pens and a thank you card.
5. A stamped, pre-addressed return envelope.

August 24, 1994 -- A reminder letter, co-signed by the doctoral advisor of the researcher and the researcher, was mailed to notify participants to return questionnaires before deadline.

September 05, 1994 -- First date all instruments were due to the researcher.

September 06, 1994 -- Second survey package was mailed to non-respondents for first follow-up.

Each non-respondent received a packet of materials which included:

1. A cover letter co-signed by the doctoral advisor of the researcher and the researcher (Appendix B).
2. The LBDQ instrument.
3. The TQLBQ instrument.
4. A blackberry tea bag decorated with smile face stickers and lace.
5. A stamped, pre-addressed return envelope.

September 20, 1994 -- Second date all instruments were due to the researcher.

September 22, 1994 -- Second follow-up by telephone contact requesting return of the instruments was made to non-respondent through the phone calls.

October 05, 1994 -- Final date all instruments were accepted by the researcher.

Table 4 summarizes the data collection schedule and procedures:

Table 4

Summary of Data Collection Procedures

Mailing Date	Type of Contact
August 13	Letter, Instruments
August 24	Reminder letter
September 06	Reminder letter, Instruments
September 22	Telephone contact

Data Analysis

For the statistical analysis of the data, the Statistical Analysis System (SAS), as provided by the Instruction and Research Computer Center at The Ohio State University, was utilized. Appropriate statistics were used to analyze, organize and summarize the data for each of the objectives.

For objectives 1, 2, and 3, descriptive statistics were used to organize and summarize the demographic information and the scores on the LBDQ and the TQLBQ. Relative frequencies of categories, cumulative frequencies, percentages and cumulative percentages were used to organize frequency tables to report the distribution of the values of the demographics and the LBDQ and TQLBQ scores.

For objectives 4 and 5, analysis using Pearson Product Moment Correlation Coefficients were conducted on association between the LBDQ scores and the TQLBQ scores. Correlation coefficients, levels of significance, as well as means and standard deviation were provided through the analysis.

For objectives 6, 7, 8, and 9, to find the relationship between the demographic variables and the perceived leadership styles and performance of total quality leadership behaviors, the Pearson Product Moment Correlation Coefficients as well as a step-wise analysis of variance, was used. The Pearson Product Moment Correlation Coefficients were used to report the established relationships among the demographic variables and the dependent and independent variables. A step-wise analysis of variance helped to find the amount of influence of demographics on the scores of the TQLBQ. In this analysis, sums of squares, means squares, F values, levels of significance, R-squares and degrees of freedom were provided.

The conventions by Davis (1971), as shown in Table 5, were used in describing the measures of association or relationship for Pearson Product Moment Correlations.

Table 5

Conventions Used to Describe Measures of Association

Coefficient	Description
.70 or higher	Very Strong Association
.50 to .69	Substantial Association
.30 to .49	Moderate Association
.10 to .29	Low Association
.01 to .09	Negligible Association

CHAPTER IV

FINDINGS

Introduction

This research was conducted to investigate how the leadership styles of college presidents are related to their performance of total quality leadership behaviors as perceived by the responsible personnel or faculty for TQM implementation in four-year higher education institutions that have implemented the principles of total quality management. To present the findings of the research, this chapter is divided into five sections: (a) population response; (b) demographics of the respondents; (c) leadership styles and total quality leadership behaviors performance; (d) demographics and leadership styles; (e) demographics and total quality leadership behaviors performance. Data are presented in narrative format followed by statistical documentation.

Population Response

By the cut-off date of October 5, 1994, 92 responsible faculty and personnel for TQM implementation had responded.

This response represented a 76.67% rate of return. Of the 92 sets of instruments returned, 16 were discarded before analysis because of incomplete data. As the respondents stated, the reasons for them to submit incomplete questionnaires were that they did not work with their presidents close enough, they did not interact with their presidents, they did not know their presidents enough, they just implemented TQM in their college or department rather than in the whole university or college, or they did not implement TQM long enough to provide any information. Thus, a set of 76 usable instruments for a 63.33% return rate was obtained for the study. A summary of the population response is provided in Table 6.

Table 6

Questionnaire Response Rate

Activity	Response	
	n	Percent
Number of Questionnaires Returned	92	76.67
Number of Usable Questionnaires	76	63.33
Number of Non-Respondents	28	23.33
Number of Questionnaires Mailed	120	

N=120

The response rate from the initial mailing, the first and second follow-up mailing is shown in Table 7. The initial

mailing brought in 48 responses. This was 40% of the population. The first follow-up brought in 39 responses or 32.5% of the total population. These two mailings accounted for 72.5% of the responses. The second and final follow-up brought in 5 responses or 4.16% of the population. The total number of responses was 92. The total cumulative percent of the returned questionnaires was 76.67%.

Table 7

Questionnaire Mailing and Response Rate

Mailing	Number of Responses	Percent of Questionnaires Returned	Cumulative Percent of Questionnaires
Initial Mailing	48	40.00	40.00
First Follow-up	39	32.50	72.50
Second Follow-up	5	4.17	76.67
Total	92	76.67	

Comparison of Early Respondents and Late/Non Respondents

To determine if important differences existed between early respondents and late respondents, or non-respondents that could bias the study results, a comparison of selected demographic data between the early respondents (those received on or prior to September 5th) and late respondents (those received on or after September 6th) was done. After comparing

the demographic information for the respondents and non-respondents, it was concluded that there was no substantial difference between the two groups as indicated in Table 8.

Table 8

Comparison of Early Respondents and Late/Non Respondents

Demographic Data	Early Respondent Mean	Late/Non Respondent Mean
Years of Working in the Institution	13.45	15.61
Degree of Familiarity with TQM Principles	4.64	4.58
Length of TQM Implementation	2.02	2.84

Demographic Information

The demographic information provided by the responsible personnel and faculty for TQM implementation included: gender, age, ethnicity, number of years working in the institution, current position as faculty or administrator, highest education level, major specialty area, familiarity with the principles of TQM, and length of time of TQM implementation.

Gender

Table 9 provides a summary of the gender of the responsible personnel and faculty for TQM implementation. Of

the population of the responsible personnel and faculty for TQM implementation, 57 (or 77%) were males and 17 (or 23%) were females.

Table 9

Gender Distribution of the Responsible Personnel and Faculty for TQM Implementation

Gender	Frequency	Percent
Male	57	57.0
Female	17	23.0
Total	74	100.0

Age

In classifying the population by age, it was discovered that approximately 73% of the respondents were 46 years of age and above. The highest category for the responsible personnel and faculty for TQM implementation was 51 years of age and above, with 47.3% represented. There were only 4.1% classified in the 35 years of age and below age bracket. Table 10 presents a summary of the respondents by age classification.

Table 10

Age Distribution of the Responsible Personnel and Faculty for TQM Implementation

Age Classification	Frequency	Percent
35 and Below	3	4.1
36-40	11	14.9
41-45	6	8.1
46-50	19	25.7
51 and Above	35	47.3
Total	74	100.0

Ethnicity

Table 11 reveals that 68 (or 93.2%) of the respondents were Caucasian. The other ethnic groups counted only about 1.4% to 2.7% of the population. There were two Asians, one Hispanic, one Native American and one African American in the population.

Table 11

Ethnicity of the Responsible Personnel and Faculty for TQM Implementation

<u>Ethnicity</u>	<u>Frequency</u>	<u>Percent</u>
African American	1	1.4
Asian	2	2.7
Caucasian	68	93.2
Hispanic	1	1.4
Native American	1	1.4
Total	73	100.0

Years of Working/Teaching in the University/College

The distribution of the respondents by years of working or teaching in the university or college revealed that 31 (or 42.5%) of the responsible personnel or faculty for TQM implementation have been working in their university or college for under 10 years. The majority (53.4%) of the respondents have been working or teaching in their university or college from 11 to 30 years. Three respondents have been working or teaching in their university or college from 31 to 40 years or more. Table 12 provides a summary of these data.

Table 12

Number of Years the Responsible Personnel or Faculty for TQM Implementation have been Working/Teaching in the University/College

<u>Number of Years at University/College</u>	<u>Frequency</u>	<u>Percent</u>
1 - 10	31	42.5
11 - 20	24	32.8
21 - 30	15	20.6
31 - 40	2	2.7
Over 40	1	1.4
Total	73	100.0

Current Position

Table 13 presents a summary of the current position of the responsible personnel or faculty for TQM implementation. Faculty counted for approximately 52.1% of the population. The present positions of these responsible faculty for TQM implementation were professor, associate professor, and assistant professor in different fields. Thirty five (or 47.9%) of the respondents were currently holding a position as an administrator. The present positions for the administrator category included director, dean, associate dean, assistant dean, special assistant to the president, coordinator, vice president and assistant vice president in different areas. Except working as a responsible personnel for TQM

implementation, almost all respondents held another position as a faculty member or an administrator.

Table 13

Current Position of the Responsible Personnel or Faculty for TQM Implementation

Current Position	Frequency	Percent
Faculty	38	52.1
Administrator	35	47.9
Total	69	100.0

Degree

Of the 72 responsible personnel and faculty who responded to this survey, 77.7% (or 56) of them possessed a doctoral degree. Thirteen of the respondents held masters degrees and 3 respondents possessed a bachelors degree as indicated in Table 14. All the responsible personnel and faculty for TQM implementation had B.S./B.A.'s but almost all had higher degrees also.

Table 14

Degree Distribution of the Responsible Personnel and Faculty for TQM Implementation

Degree	Frequency	Percent
B.S./B.A.	3	4.2
M.S./M.A./M.Ed./MBA	13	18.1
Ph.D./Ed.D./J.D.	56	77.7
Total	72	100.0

Major Specialty Area

Twenty-two (or 31.9%) of the responsible personnel and faculty for TQM implementation reported their major area of specialty was engineering related. Responses in the engineering category included: industrial engineering, mathematics, statistics, electronic engineering and mechanical engineering. Twenty respondents possessed a specialty area related to business. Responses in the business category included: marketing, human resource development, management of business administration, accounting and business operation management. Nine respondents reported their major area of specialty to be education related. Responses in the education category included: curriculum, educational leadership and administration, business education, vocational education and marketing education. Eight (or 11.6%) of the respondents'

major specialty areas were mainly administration and management science. The major specialty area of 10 of the respondents was under the "Other" category. The responses in the "Other" category included: communication, psychology, law, geology, quality, applied history, counseling, biology and medical technology. Table 15 presents a summary of the respondents' major specialty areas.

Table 15

Major Specialty Area of the Responsible Personnel and Faculty for TQM Implementation

Major Specialty Area	Frequency	Percent
Business	20	29.0
Engineering	22	31.9
Education	9	13.0
Administration & Management	8	11.6
Others	10	14.5
Total	69	100.0

Familiarity with the Principles of TQM

As indicated in Table 16, the majority of the respondents (91.7%) reported that their familiarity with the principles of TQM was very high (70.8%) to high (20.9%). Only 8.3% of the respondents considered their familiarity with the principles of TQM was moderate. All of the responsible personnel and

faculty for TQM implementation considered their degree of familiarity with the principles of TQM was at least moderate or higher.

Table 16

Familiarity with the Principles of TQM of the Responsible Personnel and Faculty for TQM Implementation

<u>Familiarity with the Principles of TQM</u>	<u>Frequency</u>	<u>Percent</u>
To a Very Small Degree	0	0
Not Very Much	0	0
Moderately	6	8.3
To a High Degree	15	20.9
To a Very High Degree	51	70.8
Total	72	100.0

Length of Time of TQM Implementation

Table 17 reveals that 78.4% of the university and colleges have been implementing the principles of TQM in their administration function from several months to 3 years. Most of the schools (47%) have been implementing TQM from 2 to 3 years. Nine of the universities and colleges have been implementing TQM for about 4 to 5 years. Only 2 schools have been implementing TQM from 6 to 7 years.

Table 17

Length of Time of TQM Implementation in the University or Colleges

Length of Time of TQM Implementation	Frequency	Percent
0 - 1	22	32.4
2 - 3	32	47.0
4 - 5	12	17.7
6 - 7	2	2.9
Total	68	100.0

Leadership Styles and Total Quality Leadership Behaviors Performance

Leadership Style

The leadership styles of the presidents as perceived by the responsible personnel and faculty for TQM implementation is displayed in Figure 6. A measure of the respondents' scores of their presidents' leadership styles showed that the mean score for the consideration dimension was 51.72, and for the initiating structure dimension was 50.62. Determination of low or high on each dimension was based on the score which was below or above the respective mean score of each dimension.

Eighteen (or 40.9%) of the respondents perceived their presidents' leadership styles as high consideration/high initiating structure. This group of the respondents perceived

their presidents demonstrate high levels of friendship, mutual trust, respect, and warmth in the relationship between themselves and their followers (consideration leadership behavior dimension). They also rated their presidents high in terms of the behaviors of delineating the relationship between themselves and their followers and of endeavoring to establish well-defined patterns of organization, channels of communication, and the ways of getting the job done (initiating structure leadership behavior dimension).

On the other hand, 12 respondents considered their presidents' leadership styles as low consideration/low initiating structure. These TQM implementation personnel and faculty members considered their presidents behave low on both of the two leadership behavior dimensions. This means that they considered their presidents demonstrate low on the behavior of mutual trust, friendly relationship, consultative and open manner (consideration dimension) as well as the behavior of directing, planning and stressing task accomplishment and organizing work patterns (initiating structure dimension).

Nine respondents perceived the leadership styles of their presidents as high consideration/low initiating structure, and 5 (or 11.4%) of the respondents perceived the leadership styles of their presidents as low consideration/high initiating structure. That is, 9 respondents perceived their

presidents focus more of their leadership behavior on problem solving, friendly relationship, mutual trust and open communication (consideration dimension) rather than on task accomplishment, directing and planning, and organizing patterns of works (initiating structure dimension). In contrast, 5 (or 11.4%) of the respondents considered their presidents were more task-oriented, focusing on task accomplishment, planning and directing and organizing the patterns of work (initiating structure dimension) instead of the establishment of friendship, mutual trust, respect and open communication (consideration dimension).

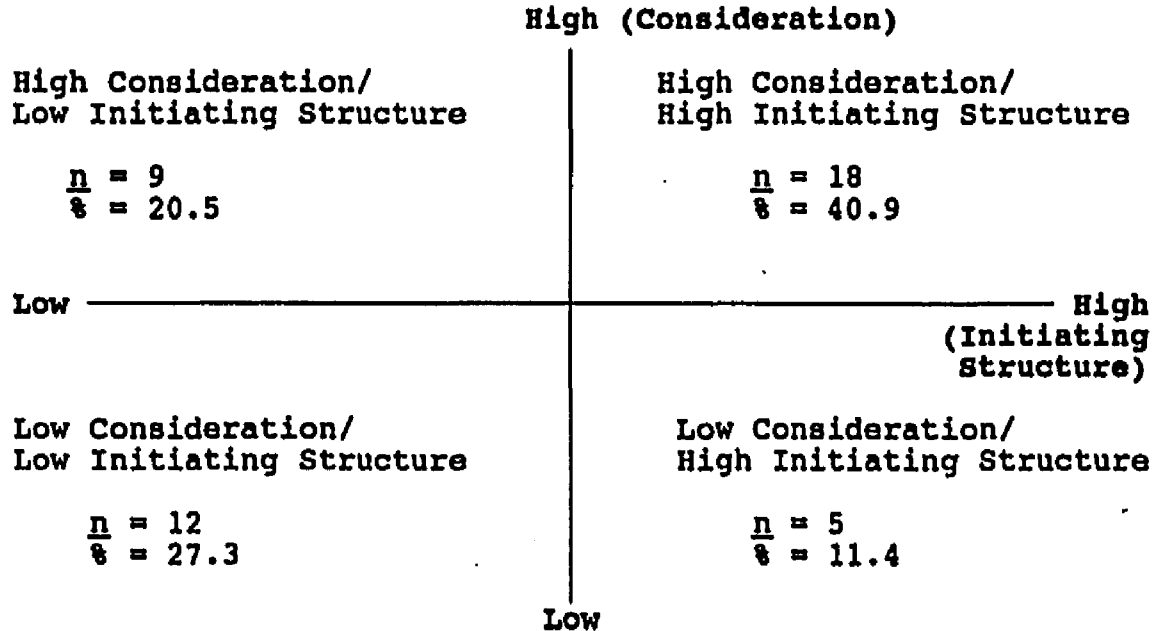


Figure 6. Leadership styles of the presidents as perceived by the responsible personnel and faculty for TQM implementation ($n=44$).

Performance of Total Quality Leadership Behaviors

Table 18 provides a summary of the perceptions of the responsible personnel and faculty of TQM implementation about their presidents' performance of total quality leadership behaviors. The mean score for the overall total quality leadership behavior performance was 2.74. This mean score indicated that the TQM implementation personnel and faculty perceived their presidents occasionally performed the total quality leadership behaviors.

The mean score and standard deviation of each of the 20 question items are also shown. An overview of the scores of the 20 total quality leadership behavior statements revealed that the differences among the means of the 20 quality leadership behaviors statements were small. The top 3 high and low scored quality leadership behavior statements were marked. With mean scores from 3.42 to 3.07, it was perceived by the respondents that their presidents occasionally performed the following quality leadership behaviors: empowers administrative heads of colleges and departments to make their own decisions and plans for quality improvement; encourages input on ways to improve the administration of the institution from faculty, staff, students, and other interested groups; and incorporate the suggestions made by staff, personnel and students to improve quality of administrations.

On the other hand, with mean scores from 2.14 to 2.34, the quality leadership behaviors which the respondents perceived their presidents seldomly performed were: takes personal responsibility for the quality improvement efforts on the campus; ensures that there is a systematic procedure to implement and examine quality improvement efforts; and ensures that the elimination of barriers that prevent teams or individuals from achieving quality performance is one of the primary functions of management.

Table 18

The Presidents' Performance of Total Quality Behaviors as Perceived by the Responsible Personnel and Faculty for TOM Implementation

Total Quality Leadership Behaviors	Mean	Std. Dev.
Overall Performance	2.74	0.99
1. Our president ensures that adequate funds are provided to implement quality improvement activities in the institutions.	2.72	1.29
2. Our president ensures that the goals of quality improvement fit with the overall mission of the institution.	2.99	1.32
3. Our president takes his/her time to participate in quality improvement related activities (e.g. meetings, training activities, seminars, and conferences).	2.68	1.38
4. Our president shows his/her appreciation for quality improvement efforts (e.g. provides compensations, meaningful feedback, shows concerns about improving quality).	2.66	1.24

Table 18. (Continued)

Total Quality Leadership Behaviors	Mean	Std. Dev.
5. Our president encourages administrators and personnel to form teams or to cooperate with one another to improve quality.	2.97	1.38
6. Our president ensures that staff development activities provide adequate training and development opportunities for staff, faculty, and other personnel.	2.90	1.16
* 7. Our president encourages input on ways to improve the administration of the institution from faculty, students, and other interested groups.	3.18	1.17
8. Our president encourages the use of statistical measurement to help identify and solve problems.	2.46	1.26
9. Our president encourages the use of information and data collected by faculty, staff and students to make decisions and implement changes.	3.04	1.22
* 10. Our president incorporates the suggestions made by staff, personnel and students to improve quality of administration functions.	3.07	1.05
* 11. Our president empowers administrative heads of colleges or departments to make their own decisions and plans for quality improvement.	3.42	1.19
12. Our president ensures the establishment of a quality council, committee or team to initiate and coordinate the strategy of quality improvement efforts.	2.49	1.54
13. Our president ensures that quality improvement is a long-term process rather than a short-term innovation.	2.82	1.51

Table 18. (Continued)

Total Quality Leadership Behaviors	Mean	Std. Dev.
14. Our president ensures that the information of quality improvement is shared among people throughout the school system.	2.62	1.26
* 15. Our president takes personal responsibility for the quality improvement efforts on our campus.	2.14	1.26
* 16. Our president ensures that the elimination of barriers that prevent teams or individuals from achieving quality performance is one of the primary functions of management.	2.34	1.13
* 17. Our president ensures that there is a systematic procedure to implement and exam quality improvement efforts.	2.16	1.14
18. Our president ensures that pilot quality improvement programs are set up for staff or personnel to try and learn to solve problems.	2.61	1.33
19. Our president positions himself/herself toward quality clearly to gain people's trust.	2.49	1.34
20. Our president encourages networking with other institutions or business organizations to share and learn about quality improvement.	2.77	1.38

* The top 3 high and low scored quality leadership behavior statements.

**Relationship between Leadership Styles and the
Performance of Total Quality Leadership Behaviors**

**Leadership Styles in the Performance of Total Quality
Leadership Behaviors**

Table 19 presents means and standard deviations of presidents' performance of total quality leadership behaviors and their leadership styles as scored by the responsible personnel and faculty for TQM implementation. The leadership style of high consideration/high initiating structure had the highest mean score of 3.46. The second highest score was 2.93 for the leadership style of high consideration/low initiating structure. The leadership style of low consideration/high initiating structure had a mean score of 2.85. The leadership style of both low consideration and initiating structure had the lowest score of 2.10.

Table 19

**Means and Standard Deviation of Presidents' Performance of
Total Quality Leadership Behaviors to their Leadership Styles**

Leadership Style	n	Mean	Std. Dev.
High Consideration/ High Initiating Structure	15	3.46	0.89
High Consideration/ Low Initiating Structure	8	2.93	1.14
Low Consideration/ High Initiating Structure	5	2.85	0.53
Low Consideration/ Low Initiating Structure	11	2.10	0.62

Relationship of the Leadership Styles to the Performance of Total Quality Leadership Behaviors

A summary of the relationship of leadership style to the performance of total quality leadership behaviors is provided in Table 20. A correlation of .48 for consideration and .52 for initiating structure revealed that there was a significant ($p < .05$) strong relationship between the two dimensions of leadership style, consideration and initiating structure, and the total quality leadership behavior performance score of the presidents. The strong, positive correlation indicated that the presidents' performance of total quality leadership behaviors tended to increase as they rated higher on both consideration and initiating structure leadership style dimensions.

Table 20

Relationship of Leadership Style to the Presidents' Performance of Total Quality Leadership Behaviors

	Leadership Style			
	Consideration		Initiating Structure	
	r	p	r	p
Performance of total Quality Leadership Behaviors	.4806	.0015	.5235	.0004

* Significant at the $p < .05$ level.

Demographic Variables and Leadership Styles

Relationship Between Demographic Variables and Presidents' Leadership Styles

Presented in Table 21 is the correlation between the demographic variables of the respondents and their perception of their presidents' leadership styles. Only the variables which were statistically significant are included in the table.

There was a moderate ($r = .4674$) relationship between the current position of the respondents and their perception about the consideration dimension of their presidents' leadership styles. An examination of this positive, significant correlation revealed that administrators tend to perceive the consideration leadership style of their presidents higher than faculty members.

There were two demographic variables, current position as administrator or faculty, and the length of time of TQM implementation in the university or college, associated with the initiating structure dimension of leadership style. The relationship between the respondents' current position and the initiating structure leadership style was moderate ($r = .4691$) and significant. The positive correlation indicated that the respondents whose current positions are administrators tend to rate their presidents higher on this dimension, whereas the faculty members tend to perceive their presidents lower on this dimension of leadership style.

There was a moderate relationship between the length of time of TQM implementation in the institution and respondents' perception about the initiating structure dimension of leadership style. The significant and positive relationship showed that the longer the university or college implements the principles of TQM on their campus, the responsible personnel and faculty tended to perceive their presidents' initiating structure of leadership styles higher.

Table 21

Relationship Between Demographics of the Responsible Personnel and Faculty for TQM Implementation and the Leadership Styles of the Presidents

Respondent Demographics	Leadership Style			
	Consideration		Initiating Structure	
	\bar{r}	p	\bar{r}	p
Current Position as Administrator or Faculty Member	.4674 *	.0016	.4691 *	.0015
Length of Time of TQM Implementation			.3965 *	.0085

* Significant at the $p < .05$ level.

**Demographic Variables and Performance of
Total Quality Leadership Behaviors**

Relationship Between Demographics and Total Quality Leadership Behaviors Performance

The correlation between the demographic variables of the responsible personnel and faculty for TQM implementation and their perception of their presidents' performance of total quality leadership behaviors are displayed in Table 22. Only the demographic variables that were significant at the established level ($p < .05$) are reported.

The relationship between the current positions of the responsible personnel and faculty for TQM implementation and their perception of their presidents' performance of total quality leadership behaviors was substantial ($r = .526$) and significant ($p < .05$). An examination of the positive and strong correlation revealed that respondents with current positions as administrators tended to perceive their presidents' performance of total quality behaviors higher than faculty respondents.

The relationship between the respondents' familiarity with the principles of TQM and their perception of their presidents' performance of total quality leadership behaviors was strong ($r = -.5399$) and significant ($p < .05$). The negative correlation indicated that the respondents tended to perceive their presidents' performance of total quality

leadership behaviors lower as their familiarity with the principles of TQM increased.

There was a relatively strong, positive correlation ($r = .7105$) between the length of time of TQM implementation in the university or college and the respondents' perception about their presidents' performance of quality leadership behaviors. The longer the university or college had implemented the principles of TQM, the higher these responsible personnel and faculty for TQM implementation perceived their presidents' performance of the total quality leadership behaviors.

Table 22

Relationship Between Demographic Variables and Performance of Total Quality Leadership Behaviors

Respondent Demographics	Performance of Total Quality Leadership Behaviors	
	r	p
Current Position in the University/College as Faculty or Administrator	.5259*	.0440
Familiarity with the Principles of TQM	-.5399*	.0377
Length of Time of TQM Implementation	.7105*	.0213

* Significant at the $p < .05$ level.

Table 23 presents the result of a step-wise comparison of the personal factors of the respondents and their perceptions of their presidents' performance of total quality leadership behaviors. A step-wise analysis of variance was used because of the proportionately large number of demographic variables. The demographic variables considered in the step-wise analysis were the respondents' gender, years of age, ethnicity, years of working/teaching in the institution, current position as an administrator or a faculty member, level of educational degree, major specialty area, familiarity with the principles of TQM, and the length of time of TQM implementation in the university or college.

As can be surmised from Table 23, the demographic variable of current position as administrator or faculty was the only variable that had a significant impact on the presidents' performance of total quality leadership behaviors. Current position as administrator or faculty explained 40.8% of the variance in the presidents' performance of total quality leadership behaviors at $p < .05$ level of significance. There was a significant difference in the respondents' scoring of their presidents' performance based on whether they were faculty members or administrators.

Table 23

Step-Wise Comparison of Presidents' Performance of Total Quality Leadership Behaviors to the Demographics of the Responsible Personnel and Faculty for TOM Implementation

Step	Variable	R ² for Model	DF for Model	DF Error	F for Model	PR>F for Model
1	Current Position as Administrator or Faculty	.4083	1	65	44.86	0.000

Comparison of the Perceptions of Total Quality Leadership Behaviors Performance between Administrators and Faculty Members

A comparison of the respondents' personal characteristics of current position as administrators and faculty members and their perceptions of their presidents' total quality leadership behaviors performance is presented in Table 24. The respondents whose current position was administrator perceived the performance of their presidents much higher (with a mean score of approximately 3.35) than the respondents whose current position was faculty member (with a mean score of approximately 2.267). There was a difference, about 1.2 points, between administrators' and faculties' perceptions of their presidents' performance of total quality leadership behaviors. Administrators considered their presidents occasionally or often perform the total quality leadership behaviors, while faculties considered that their presidents

seldom perform those total quality leadership behaviors.

Table 24

Comparison of the Perceptions about Presidents' Total Quality Leadership Behaviors Performance between Administrators and Faculty

Perceptions of Presidents' Performance	N	Mean	Std. Dev.
Administrator	33	3.4515	0.8443
Faculty	36	2.2680	0.8180

Summary

In this chapter, the research results were presented in a narrative format followed by statistical documentation. The data are presented in statistical format for the variables under investigation. These variables include presidents' performance of total quality leadership behaviors, leadership styles, and the demographics of the TQM implementation responsible personnel and faculty. Major research procedures used in the analysis were frequency and central tendency analysis, Pearson Product-Moment Correlation Coefficient and step-wise analysis of variance. Further interpretations of the findings, a summary of the study, and conclusions and recommendations are presented in Chapter V.

CHAPTER V

SUMMARY, CONCLUSIONS and RECOMMENDATIONS

Introduction

The purpose of this chapter is to draw conclusions and recommendations from the study and present these within the context of the study design and results obtained. Three sections comprise the chapter. The first section provides the backdrop for presenting the study conclusions by summarizing the study purpose, objectives, methodology and interpreting the results.

In the second section, the research objectives posed in Chapter I provide the framework for presentation of study conclusions. Conclusions formulated are based upon the study findings and interpretations.

The final section addresses recommendations of the study. Recommendations are drawn from the study results, and conclusions formulated.

Summary

Purpose and Rationale

The general purpose of this study was to explore the relationship between the leadership styles of top level educational administrators and their performance of total quality leadership behaviors. More specifically, the purpose was to investigate how the leadership styles of the presidents in four-year higher education institutions are related to their performance of total quality leadership behaviors as perceived by the responsible personnel and faculty for TQM implementation.

Studies related to quality management have shown that the leadership behaviors of quality of top-level management are a key element in the implementation of TQM and leadership style is an important factor that affects the performance of managers or leaders of total quality leadership. Despite the findings of the importance of leadership styles on management's quality leadership behaviors, as well as top-management quality leadership, to the success of TQM implementation, little research was found to assess top management's specific and different leadership styles and their performance of the total quality leadership behaviors. Study results describing the presidents' leadership styles and total quality leadership behaviors, the demographics of the responsible personnel and faculty for TQM implementation, and

the relationships among these variables are important for a number of reasons. First, the empirical research information gained from the study enriches the body of knowledge on leadership styles and quality management. Second, such data specifying presidents' leadership styles and performance of total quality leadership behaviors and delineating the demographics of the responsible personnel and faculty for TQM implementation can be applied for those universities and colleges that wish to develop the performance of the persons in TQM related positions. Third, the description of the variables provides a framework for the development of curriculum for education and training of the presidents, administrators and faculties for TQM performance.

Research Objectives

Three major sets of research objectives were used to guide the study. The first set was directed toward describing the personal factors of the responsible personnel and faculty for TQM implementation. The demographics collected were: gender, age, ethnicity, number of years working/teaching in the institution, current position as administrator or faculty, level of educational degree, major specialty area, familiarity with the principles of TQM, and length of time of TQM implementation in the university/college.

The second set of objectives was directed toward assessing the leadership styles and total quality leadership

performance of the presidents as well as the relationships between presidents' leadership styles and their performance of total quality leadership behaviors. The third set of objectives was related to the relationships among personal factors and leadership styles and total quality leadership performance.

Methodology

To obtain data concerning the research objectives, a mail survey method was used. The population studied consisted of university administrators and faculties responsible for TQM implementation (N= 120) whom were identified by the American Society for Quality Control.

A field-tested and revised instrument named the Total Quality Leadership Behaviors Questionnaire (TQLBQ) together with the Leadership Behaviors Description Questionnaire (LBDQ) (standard instrument) was mailed to the population involved in the study. Responses were obtained from 92 of the 120 subjects, which was approximately a 77% return rate. Of the 92 sets of questionnaires returned, 16 were discarded because of incomplete data for a 63% usable response rate.

The demographic data obtained from the TQM administrators and faculty members were used to compare respondents and non- or late-respondents on selected personal characteristics. An examination of the comparison revealed that there were no major differences between early and late respondents. Data

were collapsed for early and late respondents.

The data obtained through the two instruments, TQLBQ and LBDQ, were merged at The Ohio State University Computer Center. The data were coded and analyzed through the use of a statistical package for the social sciences (SAS) available at The Ohio State University Instructional Research Computer Center (IRCC). Descriptive statistics were used to summarize, organize, and describe the data. Thus, means, standard deviations, frequencies, percentages, and cumulative percentages were computed to obtain descriptive information on the demographics of the responsible personnel and faculty for TQM implementation as well as the perceived leadership styles and total quality leadership performance of the presidents.

Pearson Product Moment Correlation Coefficients were computed to describe the relationships among the leadership styles, performance of total quality leadership behaviors and demographic factors. A step-wise analysis of variance was conducted to analyze the amount of variance of the demographics in the performance of total quality leadership behaviors.

Findings and Interpretations

Demographic Information

Of the population of the responsible personnel and faculty for TQM implementation who responded the survey, 57 or

77% were males and 17 or 23% were females. The TQM personnel and faculty ranged in age from below 35 to 51 and above with 73% of the population between the ages of 46 to 51 and above. The majority (68 or 93.2%) of the respondents were Caucasian. Other races only accounted for about 1.4% and 2.7% of the population. The responsible personnel and faculty appeared to be well educated: 96.8% had completed the master's degree (M.S./M.A./M.Ed./MBA) and 77.7% had completed a doctorate degree (Ph.d./Ed.D./J.D.).

The specialty areas of the respondents tended to be varied, including areas related to business, engineering, education, administration, management, and others. Twenty-two or 31% of the respondents' specialty areas were related to engineering. These engineering related areas included industrial engineering, mathematics, statistics, electronic engineering and mechanical engineering. The specialty areas of 29% of the respondents were business related. The business related areas included marketing, management of business, human resource development, accounting and business operation management. Specialty areas of 39.1% of the respondents were under the categories relating to education, administration, management and others. Specific areas under these three categories included: curriculum, educational leadership, educational administration, vocational education, business education, marketing education, science of management or

administration, communication, psychology, law, geology, quality, applied history, counseling, biology and medical technology.

The majority (75.3%) of the responsible administrators and faculty have been working or teaching in their colleges or universities from 1 to 20 years. Other respondents (25.7%) have been working or teaching in their institutions from 21 to 40 years and longer. Thirty-eight or 52.1% of the population held a current position as an administrator, while 47.9% of the respondents held a current position as a faculty member.

All of the responsible administrators and faculty considered their familiarity with the principles of TQM to be moderate or higher. Of the total respondents, 70.8% considered they had a very high degree of familiarity with the principles of TQM. The majority of the respondents (79.4%) considered their university or college has been implementing the principles of TQM from several months to 3 years. Only 14 (or 20.6%) of the respondents considered the length of time of TQM implementation in their university or college from around 4 to 7 years.

The demographic data present a general profile of the responsible personnel and faculty for TQM implementation. The findings reveal that the majority of the responsible personnel and faculty for TQM implementation were male, Caucasian, above 46 years of age and well-educated (with Ph.D degree). This

could be explained by the observation of Monk (1993) that in higher education, white, middle-age, well-educated male are the dominant group. This group of elites takes charge of the functioning of the school system, including the tasks of TQM implementation.

Most of the respondents have been working or teaching in their universities or colleges from 1 to 20 years and thus they have a clear idea about their school systems and are considered capable to coordinate and plan their TQM programs. On the other hand, compared to other administrators or faculty who have been working or teaching in the institutions for over 20 years, they are more flexible and open to bring in new ideas and to make new changes.

Almost all of the responsible personnel and faculty for TQM implementation perceived themselves as having a very high degree of familiarity with the principles of TQM, although their major specialty areas were different and varied. The major specialty areas of about 60% of the TQM implementation personnel and faculty were under engineering and business categories. There were about 40% of the respondents under the categories of education, administration and others, and their areas of major specialty were extremely different. The finding that the majority of the responsible personnel and faculty had their major specialty areas in engineering or business related fields may be explained by the fact that the

conceptual framework of the theory of quality management was originated from the area of engineering and was then modified and developed by practitioners in the business area (Garvin, 1988). In fact, most institutions offered their quality management related courses in engineering or business departments or started their implementation of TQM programs in the business and engineering schools (Horine et al., 1993b). Administrators or faculty members with specialty areas in these two areas may have more access and opportunities than others to teach, learn or practice the principles of TQM. However, even if they did not specialize in the business or engineering related areas, almost all (91.7%) of the TQM responsible personnel and faculty considered themselves very familiar with the principles of TQM. This implies that the responsible personnel and faculty for TQM implementation must have taken training or otherwise learned a great deal about total quality management.

Administrators and faculty members each accounted for about half of the total respondents. Administrators worked in various, administration areas, and faculty members taught in various disciplines as well. The majority (79.4%) of the institutions have been implementing TQM from several months to 3 years. The length of time of TQM implementation in the universities or colleges ranged from 0 to 7 years. The findings are consistent with the research results of the

American Society for Quality Control (Horine, 1993b). Most of the universities surveyed were still in the early stages of TQM implementation and were trying to involve not only administrators but also faculty members in the TQM implementation process.

Leadership Styles and Performance of Total Quality Leadership Behaviors

The perceptions of the responsible personnel and faculty for TQM implementation of their presidents' leadership styles were varied. Eighteen (or 40.9%) of the respondents perceived their presidents' leadership styles as high consideration/high initiating structure. This means that these respondents rated their presidents high on both of the leadership behavior dimensions: consideration (referring to behavior indicative of friendship, mutual trust, respect, and warmth in the relationship between the leader and his/her followers), and initiating structure (referring to the leader's behavior in delineating the relationship between himself/herself and his/her followers and in endeavoring to establish well-defined patterns of organization, channels of communication, and the ways of getting the job done).

Twelve considered their presidents' leadership style as low on both consideration and initiating structure leadership dimensions. This means that the 12 respondents perceived their presidents to be low on the behaviors of friendship, mutual trust, respect, open communication, and warm

relationship (consideration dimension) and low on the behaviors of endeavoring to establish well-defined patterns of organization, channel of communication, and directing the ways of getting works done (initiating structure dimension). Five perceived their presidents' leadership style as high on consideration and low on initiating structure and 9 perceived their presidents as low consideration/high initiating structure leadership style.

The average score for presidents' performance of total quality leadership behaviors was 2.74, with a standard deviation of 0.99. The responsible personnel and faculty perceived their presidents seldom or occasionally perform the total quality leadership behaviors.

With a score of 3.46, presidents with the leadership style of high consideration/high initiating structure tended to gain the highest score of total quality leadership performance. This means that the presidents who scored high on the consideration leadership behavior and on the initiating structure leadership behavior performed most effective on the total quality leadership behaviors. With a score of 2.93, presidents with a leadership style of high consideration/low initiating structure were rated second on total quality leadership performance. Presidents with a leadership style of low consideration/high initiating structure were rated third, with a score of 2.85 for their performance. With a score of

2.10 for their performance of total quality leadership behaviors, presidents with a leadership style low on both leadership dimensions were rated the lowest.

There was a significant relationship between the presidents' performance of total quality leadership styles and consideration as well as initiating structure leadership style dimensions. The strong, positive correlation indicated that as the presidents scored higher on both the consideration and initiating structure leadership style dimensions, their performance of total quality leadership behaviors tended to be higher.

All four combinations of the consideration and initiating structure dimensions were represented in the presidents by the responsible personnel and faculty for TQM implementation. This result is generally the case when using the LBDQ because it has been developed to test the various leadership styles among the leaders in various organizations. However, the results suggest that there may be an imbalance among the frequency distributions of the four leadership styles. More of the respondents perceived the leadership style of their presidents was high consideration /high initiating structure than other leadership styles. This can be interpreted by the proposition made by Johnson (1993) that in order to perform the different quality leadership behaviors in the TQM implementation process, leaders would transform their

leadership style to be effective and appropriate to perform the behaviors of quality and make their TQM program a success. Thus, the finding implies that in the TQM implementation process, the presidents of institutions with TQM programs would tend to modify their leadership styles to be both people- and task-oriented in order to perform the total quality leadership behaviors. The responsible personnel and faculty perceived their presidents more toward the leadership styles of high on both consideration and initiating structure dimensions instead of other leadership styles.

In agreement with the research results of Horine et al. (1993b) and observations of Cornesky et al. (1991), the presidents of universities or colleges have not performed total quality leadership behaviors sufficiently. Lack of top management supportive leadership was still considered one of the major barriers for institutions that have implemented TQM programs. Feigenbaum (1994) noted that universities and colleges have not had serious mainstream leadership for education in quality, even though higher education quality will come about only through the personal leadership of university presidents, and all other administrators and faculty.

The scores of presidents' performance of total quality leadership behaviors were different based on the difference of their leadership styles. The strong, positive relationships

between the presidents' performance of total quality leadership behaviors and consideration and initiating structure leadership behavior dimensions were consistent with the study findings of Darling (1993) and Spanbauer (1994). These published studies suggested that there is a strong relationship between leadership styles and leaders' performance of total quality leadership behaviors. As indicated by Spanbauer(1994), based on his own experiences and study results, presidents in higher education institutions should ensure that their leadership behaviors combine both technical skills (which is the same as the initiating structure leadership behavior) and human relationship skills (which is the same as the consideration leadership dimension) in order to effectively lead their institutions toward TQM success.

The experts in quality improvement, such as W. Edwards Deming, J.M Juran and Philip Crosby, agree on the importance of top management's ability to demonstrate leadership oriented to both human and task concerns in the quality improvement process. The review of Wall and Zeynel (1991) of the ideas of these three quality experts indicated that a successful quality improvement effort requires that top management on the one hand take initiative to set the overall direction, plan strategically the quality improvement procedures and organize the steps for implementation, and on

the other hand, empower their followers to generate their ideas, entrust themselves with their followers, encourage open communication among people, and respect the ideas made by the followers. It is important for the leaders to lead and get involved in the quality improvement efforts, and it is critical for the leaders to fully address human needs and concerns in the TQM implementation process.

The findings of the relationships between the presidents' leadership styles and their performance of total quality leadership behaviors supports Wall and Zeynel's (1991) review of the ideas of the three quality experts. The presidents with leadership styles rated high on both consideration and initiating structure dimensions would likely be the most effective and appropriate for performing total quality leadership behaviors because this leadership style focuses highly on both the human and task aspects. In contrast, the presidents who scored low on consideration and low on initiating structure would likely have more difficulty performing total quality leadership behaviors because they would need to modify and change their leadership style in order to perform the total quality leadership behaviors.

Demographic Characteristics and Leadership Styles and Performance of Total Quality Leadership Behaviors

There were two demographic variables that had significant, moderate to strong correlations with the perceived leadership styles of the presidents. The current

position of the respondents tended to have strong, positive relationship with both the initiating structure and consideration leadership style dimensions. Further examination of the correlation revealed that administrators tend to perceive their presidents higher on both leadership style dimensions. There was a moderate, positive correlation between initiating structure and the length of time of TQM implementation in the institution. The relationship indicated that the longer the university or college implemented the principles of TQM, the higher the responsible TQM personnel rated the initiating structure leadership style dimension of their presidents.

Three of the personal factors of the responsible personnel and faculty tended to have significant, moderate to strong relationships with the perceived performance of total quality leadership behaviors. These personal factors included current position as administrator or faculty member, familiarity with the principles of TQM, and the length of time of TQM implementation in the institution. The results of a step-wise comparison of the respondents' demographic characteristics and their perceptions of their presidents' performance of total quality leadership behaviors revealed that the personal factor, current position as administrator or faculty, had a significant impact on the respondents' perceptions of their presidents' performance. Current

position as administrator or faculty explained 40.8% of the variance in the perceived performance of the presidents. A comparison of the perceptions of the presidents' performance between administrators (with a score of 3.45) and faculty (with a score of 2.27) indicated that responsible TQM administrators tended to perceive their presidents' total quality leadership behavior performance much higher than faculty members.

There were positive, moderate relationships between the current position of the respondents and their perceptions of the consideration and initiating structure leadership behavior dimensions as well as a positive, moderate relationship between the length of time of TQM implementation in the institutions and the perceived initiating structure leadership behavior dimension. These relationships can be interpreted as showing that the respondents whose current positions are administrators may more clearly understand and appreciate all of the dimension of the roles of their presidents than faculty. Additionally, the respondents with current positions as administrators may have more contacts or interactions with their presidents than respondents who are faculty members and this may help explain the higher ratings of their presidents' leadership styles on both of the leadership behaviors dimensions.

There was a negative, significant relationship between demographic characteristics, familiarity with the principles of TQM, and the respondents' perceptions of their presidents' performance of quality leadership behaviors. As the responsible personnel and faculty for TQM implementation obtained more knowledge about the principles and theories of total quality management, they may have expected more supportive leadership behaviors of quality from their presidents. They tended to score their presidents lower when their presidents' actions or behaviors were not directing their institution to make a success of fulfilling expectations of quality.

The strong, positive relationship between the length of time of TQM implementation in the institution and presidents' performance of total quality leadership behaviors can be interpreted by Thor's (1993) assertion that TQM implementation is a process not an event, and it takes time for individuals to change their attitude toward the process. As a college president, Thor insisted that it is a highly personal task to make oneself change and embrace TQM in ones' thinking and behaving. The longer the institutions have implemented the principles of TQM, the better their presidents performed the leadership behaviors of total quality.

The personal factor, current position as an administrator or faculty, was determined to be the variable that explained

approximately 41% of the variance in the respondents' perceptions of their presidents' performance of total quality leadership behaviors. A comparison of the mean scores of the administrators and the faculty members indicated that the administrators rated the performance of their presidents higher than faculty members. The study results are in agreement with the findings of Partin (1992) who found that administrators perceived the performance and effectiveness of their presidents' leadership behaviors more favorably in the TQM implementation process than faculty members. Compared to faculty members whose main function is still academic, administrators tended to be more optimistic and less skeptical about quality improvement efforts in their institutions (Leffel, 1991). Lewis and Smith (1994) contended that there is still a barrier between the administrative and academic side in higher education regarding the perceptions of the values of quality improvement. In general, administrators tended to appreciate more the values of quality improvement and the changing efforts of their presidents than faculty.

Conclusions

1. The majority of the responsible personnel and faculty for TQM implementation were male, Caucasians, ranging in age from 46 to 51 years old and above, and working/ teaching in their institutions for about 1 to 20 years.

2. The responsible personnel and faculty for TQM implementation appeared to be well educated. Over 90% of them possessed a masters degree and most had a higher degree.
3. The major specialty of the responsible personnel and faculty for TQM implementation was varied, covering at least 20 discipline areas.
4. The responsible personnel and faculty were highly familiar with the principles of total quality management.
5. Most of the presidents were perceived to have a leadership style of high consideration/high initiating structure. That is, most of the presidents were perceived to demonstrate the behaviors indicative of friendship, mutual trust, respect, and warmth in the relationship with their followers (consideration leadership dimension) and the behaviors in delineating the relationship between themselves and their followers and in endeavoring to establish well-defined patterns of organization, channels of communication, and ways of getting the work done (initiating leadership dimension).
6. Regarding the presidents' performance of total quality leadership behaviors, it was perceived by the responsible personnel and faculty for TQM implementation that their university presidents seldom, or occasionally, performed the total quality leadership behaviors.

7. The leadership style of high consideration/high initiating structure was identified as the most effective leadership style for president to perform total quality leadership behaviors. Presidents with the leadership style of high consideration/high initiating structure tended to perform quality leadership behaviors more than presidents with other leadership styles.
8. Administrators and faculty members differed significantly in their ratings of their presidents' performance of total quality leadership behaviors. The responsible TQM personnel with current positions as administrators tend to perceive their presidents' performance higher than faculty members.
9. The two leadership style dimensions, consideration and initiating structure, correlated positively with the presidents' performance of total quality leadership behaviors.
10. The demographic variable, familiarity with the principles of TQM, correlated negatively with the respondents' perceptions of their presidents' performance of total quality leadership behaviors.
11. The personal factors, current position as a administrator or a faculty member, correlated positively with the respondents' perceptions of their presidents' performance of total quality leadership behaviors.

12. The demographic variable, current position as administrator or as a faculty member, had a significant impact on the perceptions of the presidents' performance. The demographic variable, current position as administrator or as a faculty member, explained proportionately 41% of the variance in the respondents' perceptions of the presidents' performance of total quality leadership behaviors.

Recommendations for Practice

1. Universities and colleges that implement the principles of total quality management may use the Total Quality Leadership Behaviors Questionnaire (TQLBQ) to assess the quality performance of their presidents or top-level administrators. With slight modification, the TQLBQ can be utilized to assess the quality leadership behaviors of the administrators and faculties who are involved in TQM implementation.
2. Universities and colleges that implement the principles of TQM may use the TQLBQ to obtain data relating to their presidents or any responsible TQM administrators and faculties. Based on the information gained through the TQLBQ, the university and college can plan in-service training or education activities to develop the performance of top level administrators.

3. Findings of the study suggest that the personnel or faculty who are in charge of TQM implementation come from varied specialty areas. When selecting responsible personnel and faculty for TQM implementation, the university or college should not exclude persons with any particular specialty area so that they will not overlook any potentially effective, creative people who could become good TQM implementers.
4. The leadership style of high consideration/high initiating structure was found to be the most effective leadership style for the presidents to perform total quality leadership behaviors. Presidents, or top-level administrators, should develop their less highly rated leadership style dimension or modify their patterns of leadership behaviors in order to demonstrate quality leadership behaviors. Hence, the success of quality management efforts for the university or college will be increased.
5. Presidents of the universities and colleges with TQM implementation have performed total quality leadership behaviors only to a limited degree. To make quality management efforts a success, presidents or top-level administrators should acquire and perform quality leadership behaviors.

6. Total quality management implementation is a long-term process. The longer universities or colleges implement the principles of TQM, the better the presidents can perform total quality leadership behaviors.
7. University presidents should involve faculty members more in the process of the total quality management implementation. Faculty members should be involved to an extent that it would narrow the gap between what presidents or top-level administrators communicate to faculty about TQM implementation and what faculties think is actually being implemented.

Recommendations for Further Research

1. When replicating this study, on-site visits to the institutions and personal interviews with the subjects rather than mailed questionnaires would deepen the scope of the research findings.
2. Conduct future studies using various leadership style instruments (e.g. Hersey, & Blanchard's Leader Behavior Analysis II (LBA II) to determine whether or not the results obtained in this study would be similar with a different assessment instrument. Studies conducted with different leadership style instruments would determine the extent to which the results of this study are congruent with other instruments which measure the same constructs.

3. Further research should be conducted exploring the relationships of other independent variables such as the variables relating the culture of the institutions, the situational factors of the working environment, and the structure of the administration system associated with the performance of total quality leadership behaviors.
4. The present study focused on the process of TQM implementation in the institutions. It is recommended that others conduct outcome or output studies to determine the benefits TQM programs can bring to the institution and individuals in it.
5. Conduct future research to examine why the presidents with the leadership style of high consideration and high initiating structure obtained higher ratings of the performance of total quality leadership behaviors than those with other leadership styles.
6. Replicated the study covering broader geographic regions and populations to obtain a substantial data base for university presidents' performance of total quality leadership behaviors and leadership styles. A broader data base would make the instruments generalizable to a larger number of presidents of colleges and universities and improve the capabilities of the instrument as a tool for professional development or evaluation.

APPENDIX A
TIMELINE AND MAJOR TASKS

**A List of the TimeLine and Tasks for
Completing the Dissertation**

<u>TimeLine--Date Week of</u>	<u>Tasks</u>
08-05-1993	Research topics generated
09-25-1993	Research topics and questions developed
10-10-1993	Research area & topic decided
10-30-1993	Proposal developed (1st draft)
12-10-1993	Proposal developed (2nd draft)
02-01-1994	Proposal developed (3rd draft)
04-28-1994	Proposal developed (4th draft)
05-31-1994	Committee meeting/proposal approval
07-27-1994	Field testing of the instrument
08-13-1994	Initiating survey mailing
08-24-1994	First reminder letter mailing
09-06-1994	First Follow-up
09-22-1994	Second follow-up by phone
10-05-1994	End of survey
10-06-1994	Run data/Tabulate surveys
11-05-1994	Turn in Doctoral Draft Approval Form to grad. school
11-17-1994	Committee meeting/Oral defense of dissertation
12-02-1994	All paper work turn into graduate school

APPENDIX B
CORRESPONDENCE AND INSTRUMENTS

Dear Survey Participants:

I am a doctoral student of the Comprehensive Vocational Education Program of the Ohio State University. I am now in the process of conducting research on assessing university/college presidents' leadership styles and their performance of total quality leadership behaviors as perceived by the responsible faculty or personnel for TQM implementation. The purpose of this letter is to solicit your participation in a field test for reviewing my instrument for data collection.

Enclosed is the instrument, the Total Quality Leadership Behaviors Questionnaire, that I am planning to send to participants in my study (Which are the responsible personnel or faculty for TQM programs implementation in four-year higher education institutions that have implemented the principles of TQM).

I would appreciate your reviewing the instrument from a critical perspective (i.e. review the representation of the desired content, wording of the items, inclusion and/or omission of relevant areas or ideas and appropriateness for the chosen population). You may provide your comments under each question item.

Please return the materials with your comments or suggestions in the self-addressed, stamped envelope. It would be greatly appreciated if you could return the information by August 12, 1994.

Thank you in advance for your time, consideration, and professional assistance.

Sincerely,

Cheng-Chiou Huang
Ph.D. Candidate
Comprehensive Vocational Education
The Ohio State University

Dear

We would like to solicit you to participate in a study we are conducting. The purpose of the study is to determine your perception of your president's leadership styles and total quality leadership behaviors. The aim of the study is to look at the relationship of the presidents' leadership styles and their performance of total quality leadership behaviors as perceived by you, the responsible personnel or faculty for TQM program implementation.

Your response to the questionnaires is critical to the success of this study. The estimated time for completion of the questionnaires is 15 to 20 minutes. All information requested in the questionnaires will be kept in strict confidence. The code number, plainly displayed in the right hand corner of the questionnaires, is for follow-up only. No individual data will be singled out. Your anonymity is guaranteed.

Please return the completed questionnaires in the self-addressed, stamped envelope before Monday, September 05, 1994. Your prompt response is important. If you have any questions as you complete the questionnaires, please call or fax Cheng-Chiou at (614) 421-1499.

Thank you for your willingness to assist with the study. A small gift, two Ohio State University pens, is enclosed to appreciate your kindness and assistance.

Sincerely,

Cheng-Chiou Huang
Ph.D. Candidate
Comprehensive Voc. Ed.
The Ohio State University

Dr. Frank C. Pratzner
Associate Professor
Technology Ed./
Comprehensive Voc.Ed.
The Ohio State University

Dear

About 12 days ago, you received a package of questionnaires from Cheng-Chiou Huang and Dr. Pratzner of the Ohio State University. You were solicited to provide your perceptions about your president's leadership styles and performance of the total quality leadership behaviors by completing and returning the questionnaires.

Up to this time, your response has not been received. We need your HELP! It would be very grateful if you could take about 20 minutes of your time to complete the questionnaires.

We would appreciate receiving the completed questionnaires by Monday, September 05, 1994. If you have returned the questionnaires, please accept our sincere appreciation for your professional assistance. If you have any questions as you complete the questionnaires, please call or fax Cheng-Chiou at (614) 421-1499.

Thank you for your time and consideration.

Warm Regards,

Cheng-Chiou Huang
Ph.D. Candidate
Comprehensive
Vocational Education
The Ohio State University

Dr. Frank C. Pratzner
Technology Education/
Comprehensive Vocational
Education
The Ohio State University

Dear

About 25 days ago, we mailed a survey to you seeking your input about the performance of total quality leadership behaviors and leadership styles of your president. As of today, your completed questionnaires have not been received.

We are writing to you again because of the significance each questionnaire has to the usefulness of the study. So far, we have achieved a 39% return rate....BUT for results of the study to be statistically generalizable, we need a 70% RETURN RATE.

We realize this is a busy time of the year to be asking for 20 minutes of your time. Please make yourself a cup of tea on us and complete the questionnaires. Your answers will be treated in strict confidentiality. Questionnaires are coded for follow-up only.

In the event that your questionnaires have been misplaced, a replacement is enclosed. A self-addressed, stamped envelope is enclosed for your convenient return of completed questionnaires before Tuesday, September 20, 1994. If you have any questions, please call or fax Cheng-Chiou at (614) 421-1499.

Thank you very much for your time and professional assistance.

Warm regards,

Cheng-Chiou Huang
Ph.D. Candidate
Comprehensive
Vocational Education
The Ohio State University

Dr. Frank C. Pratzner
Technology Education/
Comprehensive Vocational
Education
The Ohio State University

TO WHOM IT MAY CONCERN:

We grant permission to Cheng-Chiou Huang to include the Leader Behavior Description Questionnaire in her dissertation in accordance with the attached Statement of Policy.

Sincerely yours,

A handwritten signature in cursive script that reads "Arleen Robinson". The signature is written in black ink and is positioned above the printed name.

Arleen Robinson

ahr

enclosure

The Total Quality Leadership Behavior Questionnaire

Part I. Total Quality Leadership Behavior Performance of University/College Presidents

Direction: Please use the following response scale and Circle the Letter to indicate your perception or experience about the degree to which your president complies with the following statements.

RESPONSE SCALE: A= Always
B= Often
C= Occasionally
D= Seldom
E= Never

Item Number	Statement	Always					Never				
		A	B	C	D	E	D	E			
1.	Our president ensures that adequate funds are provided to implement quality improvement activities in the institutions.	A	B	C	D	E					
2.	Our president ensures that the goals of quality improvement fit with the overall mission of the institution.	A	B	C	D	E					
3.	Our president takes his/her time to participate in quality improvement related activities (e.g. meetings, training, and conferences).	A	B	C	D	E					
4.	Our president shows his/her appreciation for quality improvement efforts (e.g. provides compensations, meaningful feedback, shows concerns about improving quality).	A	B	C	D	E					
5.	Our president encourages administrators and personnel to form teams or to cooperate with one another to improve quality.	A	B	C	D	E					
6.	Our president ensures that staff development activities provide adequate training and development opportunities for staff, faculty and other personnel.	A	B	C	D	E					
7.	Our president encourages input on ways to improve the administration of the institution from faculty, staff, students and other interested groups.	A	B	C	D	E					
8.	Our president encourages the use of statistical measurement to help identify and solve problems.	A	B	C	D	E					

Item Number	Statement	Always			Never	
		A	B	C	D	E
9.	Our president encourages the use of information and data collected by faculty, staff and students to make decisions and implement changes.	A	B	C	D	E
10.	Our president incorporates the suggestions made by staff, personnel and students to improve quality of administration functions.	A	B	C	D	E
11.	Our president empowers administrative heads of colleges or departments to make their own decisions and plans for quality improvement.	A	B	C	D	E
12.	Our president ensures the establishment of a quality committee, council or team to initiate and coordinate the strategy of quality improvement efforts.	A	B	C	D	E
13.	Our president ensures that quality improvement is a long-term process rather than a short-term innovation.	A	B	C	D	E
14.	Our president ensures that the information of quality improvement is shared among people throughout the school system.	A	B	C	D	E
15.	Our president takes personal responsibility for the quality improvement efforts on our campus.	A	B	C	D	E
16.	Our president ensures that the elimination of barriers that prevent teams or individuals from achieving quality performance is one of the primary functions of management.	A	B	C	D	E
17.	Our president ensures that there is a systematic procedure to implement and exam quality improvement efforts.	A	B	C	D	E
18.	Our president ensures that pilot quality improvement programs are set up for staff or personnel to try and learn to solve problems.	A	B	C	D	E
19.	Our president positions himself/herself toward toward quality clearly to gain people's trust.	A	B	C	D	E
20.	Our president encourages networking with other other institutions or business organizations to share and learn about quality improvement.	A	B	C	D	E

Part II. Demographics Information

Directions: Please provide your demographic information by Circling the Number of the appropriate answer to each of the following questions or Filling in the Blanks provided.

A. What is your gender?

1. Male
2. Female

B. What is your age range at your last birth date?

1. 35 and Below
2. 36-40
3. 41-45
4. 46-50
5. 51 and Above

C. What is your ethnicity?

1. African American
2. Asian
3. Caucasian
4. Hispanic
5. Native American
6. Other _____

D. How many years have you been working/teaching in the university/college?

Years _____ Months _____

E. What is(are) your current position(s) in the university/college?

F. What were your major specialty area(s)?

Degree	Major Specialty Area(s)
1. BS/BA	_____
2. MA/MS	_____
3. PhD/EdD	_____
4. Other	_____

G. The degree to which you feel about your familiarity with the principles of TQM?

1. To a very small degree
2. Not very much
3. Moderately
4. To a high degree
5. To a very high degree

H. How long has your university or college implemented the principles of TQM?

Years _____ Months _____

_____. Thank you for completing the survey. If you wish to have a copy of the study summary, please check the space.

PLEASE NOTE

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Leader Behavior Description Questionnaire

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APPENDIX C
PANEL OF EXPERTS

Frank C. Pratzner, Ph.D.
Associate Professor, Comprehensive Vocational Education
The Ohio State University
Columbus, Ohio

James E. Sage, Ph.D.
Associate Professor, Comprehensive Vocational Education
The Ohio State University
Columbus, Ohio

Kevin J. Freer, Ph.D.
Assistant Professor, Educational Studies, Adult Education
The Ohio State University
Columbus, Ohio

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