THE RELATIONSHIP BETWEEN LEADER BEHAVIOR AND THE WORK ENVIRONMENT

DISSERTATION

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By
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* * * * *

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DEDICATION
To my parents,
Paul and Rosemary Seiter,
who provide space, support and stability
ACKNOWLEDGEMENTS

I would like to thank many people whose contributions, direct and indirect, led to the completion of this dissertation.

My thanks go to my colleagues and friends. Lynn and Chuck Willett, Charlie Newman and Karen Okeafor were supportive and helpful throughout the process. Drs. Willett, Newman and Okeafor were especially helpful during the instrument development phase. I must also thank David Palumbo for his support and patience. Pam Scholz never gave up hope.

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Trish Burtch, my typist, worked quickly and maintained a sense of humor.

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CHAPTER I
INTRODUCTION

Educational organizations are complex and, like all complex organizations, they can be observed from a variety of perspectives, using a variety of models (Scott, 1981; Perrow, 1970). Scott, for example, suggests organizations can be studied as rational, natural or open systems and studied to isolate either commonality or diversity. To study educational organizations from the commonality perspective, researchers choose to look for similarities in institutional structures, goals, technologies or leadership. From a diversity perspective, researchers look for differences which might explain an institution's growth and stability or its problems.

Although the "organizations-are-people" perspective is usually considered too simplistic, organizations are made up of people, and internal organizational problems are often exemplified by participants' interactions with one another (Perrow, 1970). As the organizational participants interact, the nature and quality of their relationships create an internal environment or social climate. In an educational organization, this social climate can be that of a classroom, an academic unit, a
school, school system, college or university. In each instance, however, social climate is a reflection of the participants' perceptions of the environment. This perception is sometimes considered an individual attribute, related to each participant's values, beliefs and actions. Social climate has also been considered to be an organizational characteristic, the aggregate of all interactions, pervasive enough to influence organizational effectiveness.

Educational organizations can be defined as social climates, but they are also formal organizations with identifiable leaders and elements of a bureaucracy: division of labor, staff roles, a hierarchal ordering of offices and rules of procedure (Bidwell, 1965). The leader or administrator, through his or her actions, can influence the attitudes and actions of other participants, the social climate and ultimately the productivity or success of the organization. Many researchers have therefore studied the behavior of the leader in the organizational setting in an attempt to define effective organizations.

Researchers who have focused on leader behavior have often labeled it the independent or predictor variable, influencing outcome measures such as subordinate satisfaction or student test scores. Researchers have not, however, found consistent relationships between leader
behavior and other factors. Specific leader behaviors do not appear to be equally effective across all situations (Yukl, 1981; Howell and Dipboye, 1982). Many researchers have therefore developed contingency models and situational theories of leader effectiveness. These situational theories include moderator variables or contingencies in the work environment which appear to influence a leader's effectiveness in a particular situation and to mediate the leader behavior-organizational outcome relationship.

Yukl's Multiple Linkage Model (1981) of leader effectiveness is one example of a contingency model, designed to allow the systematic examination of leader effectiveness that Yukl recommends. In Yukl's model, the intervening environmental variables are group and individual characteristics (e.g., Subordinate Effort and Group Cohesiveness and Teamwork) which are influenced by leader behavior, and they in turn influence group performance. Yukl also discusses three types of situational variables which influence intervening variables: organizational characteristics (e.g., the formal reward system); the constraints on leader behavior which influence the intervening variables; and situational variables which affect the value participants place on intervening variables. Many other researchers (Fiedler, 1971; House, 1971; Hersey and Blanchard, 1977) have also
developed contingency models in an attempt to explain the relationships between leader behavior and other organizational variables. Yukl says that while "situational theories are complex, imprecisely formulated and difficult to test...they are useful for suggesting potentially important variables to investigate" (p.169). The theories are not, he adds, definitive explanations of leader effectiveness.

Many investigators have used unidirectional contingency models in leadership research; leader behavior is the causal variable, influencing the work environment and work group productivity. Such one-way linear models may, however, be too simplistic. There is some indication that interactive or indirect causal models may be better models for examining the relationships among administrative behavior, situational variables and end result variables such as productivity. Hersey and Blanchard (1977), for example, view leader effectiveness as the end result variable rather than the causal variable. Miskel (1977) says that a principal's performance is contingent upon various characteristics of the school environment; the environment therefore influences administrative behavior. Walberg (1982) says that the assumed administrator-to-environment causality may be reversed or at least circular. Indicating an indirect relationship between leader behavior and outcome,
Scott (1981) says that professionals such as university faculty members are granted considerable autonomy and discretion in performing their professional tasks. Weick's loose coupling concept (1976), which indicates that educational subunits are autonomous elements, is a further indication that few direct cause-effect relationships exist. Because of the apparent complexity of organizational phenomena, current leadership research is often based on interactive contingency models and on the premise that static trait or task approaches cannot define good leadership across all situations.

PURPOSE OF THE STUDY

This study is designed to (1) provide a description of each of the variables in the study: the community college work environment, the behavior of the first-line academic administrator (chairperson, coordinator or dean) and the educational effectiveness of the academic unit, as perceived by faculty members, and (2) investigate the relationships among the variables. The study is based on the propositions that work environment is related to leader behavior, educational effectiveness is related to the work environment, and leader behavior is related to educational effectiveness.

The three variables in the study are operationalized by three separate instruments, combined into a questionnaire which was mailed to community college
faculty members. The work environment, as measured by the Work Environment Scale or WES (Moos and Insel, 1981), has three dimensions: Relationship, Personal Growth, and System Maintenance and System Change. Leadership is measured by the Leader Behavior Description Questionnaire (LBDQ). The LBDQ, developed by Halpin and his associates (Bass, 1981) has two subscales, Consideration and Initiating Structure, simply defined as the leader's person-orientation and task-orientation. The effectiveness of the educational program, as measured by the Educational Effectiveness Opinionnaire (EEO), has two dimensions: Student Achievement and Faculty Commitment.

To ascertain effective leader behaviors for a particular environment, researchers often include outcome measures in their models, suggesting that a congruence between the behavior of the leader and the requirements of the situation influences organizational effectiveness. House's (1971) End-Result variables are subordinate effort and satisfaction; Likert's End-Result variables (in Yukl, 1981) include high productivity, high quality of work and low absenteeism; Ellett and Walberg (in Walberg, 1982) measure effectiveness by the student outcomes of attendance, learning and achievement. The measures of organizational effectiveness are not arbitrary; they are instead indications of the researcher's interests and the type of organization being studied. More important,
however, is the general consensus that relationships among leader behavior, the work environment and organizational outcomes are at least complex, if not interactive.

Each variable in this study, considered individually, is complex. The role of the administrator, for example, is a dual role. If administrators are to reinforce organizational expectations and empathize with individual members (Getzels et al., 1968), they must act as both colleague and supervisor, balancing equity and hierarchy. The work environment, too, is complex and comprised of several factors. It is, according to Moos (1976), the personality of the organization, but it is an aggregate personality, where individuals retain their own expectations and values as well as adopting certain values of colleagues and peers (Perrow, 1970). Expectations of individuals external to the organization may also influence the participants' perceptions of the work environment (the open systems model in Scott, 1981). The variety of outcomes desired by organizational participants (goal diversity) makes it difficult to establish criteria for assessing outcomes such as educational effectiveness. Cohen, March and Olsen (1972) say that all organizations are characterized by goal diversity or problematic preferences. Ellett and Walberg (in Walberg, 1982) point out goal diversity in education: basic skills and test scores versus alternatives to academic achievement such as
humanistic education and socialization skills. The purpose of this study is to examine these complex variables and their interrelationships in the community college setting, using the EEO as the measure of outcome.

**SIGNIFICANCE OF THE STUDY**

In an educational organization, bureaucracy and professional autonomy often appear to exist simultaneously, creating a complex, if not contradictory work environment. The academic administrator, for example, is both a representative of the bureaucracy (as defined by Weber, 1947 in Scott, 1981) and a faculty colleague. The work environment itself can be alternately interpreted as a summary variable, an output variable, a causal variable or a mediating variable. As a summary variable, the work environment reflects the extent to which the potentially contradictory forces of bureaucracy and autonomy have been reconciled. As an output measure, the work environment is viewed as a product of participants' interactions, leader behavior and educational effectiveness. As a causal variable, the work environment influences leader behavior and educational effectiveness. As a mediating variable, the work environment influences the effect of leader behavior on outcomes. Because of its pervasive nature, the work environment appears to be of critical importance in the study of educational organizations, their leadership and their effectiveness.
If faculty members believe they can function effectively within the institution's bureaucratic structure and if they believe effective education is a characteristic of their department, it would seem logical to assume that they would rate their work environment and leader behavior highly. However, because faculty members are individuals and because the community college setting may have some unique characteristics, it is important in this study to isolate the work environment characteristics which community college faculty members appear to associate with effective education and effective leadership.

Educational effectiveness is likely to be associated with a positive and professionally stimulating work environment; therefore, this study may have implications for the improvement of educational effectiveness in the community college setting by identifying the characteristics of a stimulating work environment. In a general sense, this study may contribute to the literature of leader behavior and organizational climate. In this study, the two-factor definition of effective leadership applies applicable. As a step in the process of theory-building and hypothesis-testing, this study may contribute to the literature involving contingency models, models used to assess the importance of or contribution of various factors in predicting the success of an
organization. This study is designed to provide some insight into the questions of what environmental characteristics and leader behaviors appear to stimulate community college faculty members and encourage them to move toward higher levels of performance.

Understanding more about the relationship of the variables in this study may assist academic administrators who are interested in improving the work environment of their academic unit and in enhancing the likelihood of desired outcomes. The study's recommendations may also prove beneficial to educational administration specialists who select and train administrators, suggesting the study has both a practical and conceptual significance for education professionals.

THE MODEL AND HYPOTHESES

The work environment of an educational organization can be interpreted as an organizational or an individual variable and holistically defined as the participants' individual or collective perceptions of the work place. The educational environment in research studies has been treated as (1) a characteristic of an individual classroom or subunit; (2) a function of the administrator's or teacher's behavior, or (3) a situational or moderator variable influencing such outcome measures as teacher morale or student achievement. While many studies have used a linear model, this study is based on an interactive
model, illustrated on the following page; each variable in the model is directly related to the other two variables. The study focuses on specific selected dimensions of those variables, described by faculty members, to investigate the relationships among the work environment, leader behavior and educational effectiveness.

The Hypotheses

In contingency or situational theories of leadership, intervening variables influence the effect of leadership on productivity (Bass, 1981; Howell and Dipboye, 1982; Yukl, 1981). This study is similarly based on a situational model, presented as Figure 1, but the relationships are interactive. From the linear perspective, leader behavior could be labeled as the independent variable; work environment, the intervening variable; educational effectiveness, the outcome variable. However, relationships appear to be more complex than a linear perspective would suggest. For example, Scott (1981) discusses the problems of professionals within organizational work environments where bureaucratic demands conflict with expectations of autonomy. Simon (1957) discusses bounded rationality and suggests that an individual's actions and decisions are "bounded" or influenced by the environment. Moos (1976) believes the social climate of any setting is the critical element in human behavior. Researchers have described the work
THE WORK ENVIRONMENT, LEADER BEHAVIOR AND EDUCATIONAL EFFECTIVENESS: AN INTERACTIVE MODEL

Figure 1
environment in various terms and from various perspectives, (James and Jones, 1974; Halpin, 1966), including some or all of the work environment components which Moos and Insel include in the WES.

Social climate research is often focused on the interaction between the individual and the environment. There is also evidence that leader behavior has an influence on individuals and on the work environment. The participants' perceptions of leader behavior, of Consideration and Initiating Structure, have been linked the leader's actual behavior (Bass, 1981) and to participants' perceptions of the work environment (Moos, 1976).

Individual characteristics and environmental factors appear to be mediating variables between leader behavior and employee satisfaction or productivity. House (in Bass, 1981), for example, found that the more autonomous the subordinate, the more Initiating Structure correlated with the outcome measures of satisfaction and performance. Kerr and Jermier (in Howell and Dipboye, 1982) report that leader behavior can influence subordinate satisfaction and performance, but not in all situations. Characteristics of the subordinate, the task and the organization are mediating variables in the relationship. Madron, Craig and Mendel (1979) contend that the level of morale can be used to identify college or university departments with
organizational problems. They found that administrator behavior in a university department is the best predictor of morale. Kerr et al. (1974, in Stogdill, 1974) report that situational variables (subordinates' need for information, their job level, their expectations for leader behavior and their perceived organizational role) influence whether Initiating Structure or Consideration yields satisfaction and productivity. In a laboratory study (Weed, Mitchell and Moffitt, 1976, in Bass, 1981), leader Consideration led to a pleasant working condition.

Ellett and Walberg (in Walberg, 1982) also found a relationship between leader behavior and the environment. They report that

Of all the variable relationships examined (in their study), the strongest and most frequent were those between teachers' perceptions of characteristics of the school environment and their assessments of the behavior of the principal. In schools where the principal is perceived by teachers as frequently and effectively performing important behaviors in the school environment, teachers' attitudes toward a variety of work-related dimensions are positive and often show strong connections with student outcomes (p. 158).

There also appears to be a relationship between some of the intervening variables listed in Yukl's Multiple Linkage Model (1981) and selected subscales from Moos and Insel's ten WES subscales (1976). Yukl and Insel and Moos appear to be discussing similar constructs.

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Yukl maintains that leader behavior influences the intervening variables, variables which appear to be similar to Insel and Moos' work environment subscales. The intervening variables in turn influence organizational outcomes. In general, the indication of relationships between leader behavior and diverse other variables in the environment provides the conceptual support for the development of a hypothesis:

H1: Leader behavior is positively related to the work environment.

Organizational participants may have different perceptions of the organizational climate, but Evan (in Tagiuri, 1968) reports that perceptions of the climate do have behavioral consequences which influence group performance. Cummings and Schwab (1973) report that employee motivation influences performance. A logical extension of their theory is that, to the extent that the work environment is motivational, work environment is related to faculty performance and educational effectiveness.

Ellett and Walberg (in Walberg, 1982) indicate relationships similar to those proposed in this study.
They hypothesize that the principal's behavior, which has its primary impact on teachers' perceptions and behaviors in the school environment, then indirectly influences students and student outcomes through its effect on teachers. They believe that a basic research concern in educational administration should be the establishment of relationships between suggested principal competencies and meaningful criterion variables in the school environment. Their model is designed to conceptualize the relationships among principal behavior, the social-learning environment and student outcomes.

Moos (in Walberg, 1979) found that individuals who have a greater degree of control or responsibility and who perform better perceive the environment as more positive than individuals who have little control or responsibility and who perform poorly, suggesting a relationship could exist between the work environment and educational effectiveness. McClure (in Moos and Insel, 1981) asked teachers to complete the Work Environment Scale (WES) to isolate problem areas in their work environment. He concluded that improving the work environment may be an important step toward improving the learning environment. Simek (in Moos and Insel, 1981) found that radio stations which were rated as successful by station managers had environments which participants rated high on the characteristics of peer cohesion, independent
decision-making, work pressure and motivation.

Moos also applied Holland's (1977) empirically-supported personality theory, developed earlier, to work environments (Moos, 1976). Holland maintains that individuals of a particular personality type are most successful in an occupation with the same modal personality types (e.g., realistic people as engineers or enterprising people as bankers); Holland recommends a person-environment congruence as a requisite for individual satisfaction and success. Moos found that the WES discriminates among Holland's six occupational setting and personality types. Hence, the WES may prove helpful in determining the extent of person-environment congruence in a work setting, a congruence which has implications for the prediction of educational effectiveness.

The emergence of positive relationship in this study between work environment and educational effectiveness would have implications for improving both the environment and the educational effectiveness of an institution or department. This implication suggests a necessity for the second hypothesis.

H2: The work environment is positively related to educational effectiveness.

Yukl (1981) and Ellett and Walberg (in Walberg, 1982) both indicate that leader behavior is influenced by en
results, although earlier models (Likert, 1961; House, 1971; Fiedler, 1967) do not include this feedback component. Productivity or effectiveness has more often been included in a linear model as a product of leader behavior.

Bass (1981) also suggests that effective outcomes modify leader behavior. He cites several studies (Katz, Maccoby and Morse, 1950; Barrow, 1975; Bass, Binder and Breed, 1967) where researchers found that leaders become more task-oriented when production falls, but they become more employee-centered when subordinate performance increases. Likert (in Bass, 1981) used path analysis to demonstrate that leadership contributes directly and indirectly to productive efficiency. Among several thousand workers in Likert's study, productivity was higher when there was supervisory pressure for production.

The leader's perceptions of efficiency and of subordinate expectations are based on feedback from the work environment. Howell and Dipboye (1982) include this feedback component in their leaderless theory of leader behavior. They suggest that the effectiveness of the leader's group influences not only the leader's behavior but also the subordinates' assignment of leadership traits to the leader. Getzels, Lipham and Campbell (1968) say that leaders' roles are defined in terms of other participants' role expectations. Katz and Kahn (1978)
discuss a role set concept where peer, subordinate and superordinate expectations for the leader influence leader behavior. Stogdill (1956) says that leaders will either tend to do what they are expected to do or tend to be expected to do what they do. From these perspectives, leader behavior would appear to be influenced by the perceptions and expectations of departmental faculty as well as the administrator's perceptions of educational effectiveness in the department.

Wofford (1971), in a study of managerial behavior, situational factors, productivity and morale, analyzed managerial behavior and effectiveness without considering situational influences. He found that leader behavior dimensions accounted for 40 percent of the variance in productivity. He concludes that

It is possible to establish a conceptual framework to include situational variables and managerial behavior dimensions, and to refute the position of theorists who contend that the study of managerial behavior is futile because situational influences negate behavioral effects (p.16).

Bass (1981), reviewing the literature, concludes that both relations orientation and task orientation are associated positively with group performance and that, in a majority of circumstances, both types of leadership are optimal for productivity. The relationship between productivity and leader behavior leads to a hypothesis.

H3: Educational effectiveness is positively
related to leader behavior.

**DEFINITION OF TERMS**

The following definitions are provided to improve the clarity and consistency of the terms used in this study.

_**Academic administrator** and _**department head**_ are terms which refers to the first-line administrator who has the title of department chairperson, coordinator or dean depending on the organizational structure and size of each institution. This individual, regardless of title, is both an administrator and an instructional leader. Lombardi (in Grable, 1973) says that a good department chairperson must assure faculty loyalty, maintain a good relationship with higher level administrators and reconcile the role dichotomy of supervisor and colleague. This individual is responsible for class scheduling, resource allocation and curriculum planning.

_**Bureaucracy**, according to Max Weber (in Scott, 1981), is the most efficient organizational structure, characterized by a hierarchal ordering of offices, standardized roles or job descriptions and a selection of personnel based on technical qualifications. In a modern bureaucracy, Simon's (1957) "administrative man" is common, one motivated in part by self-interests and making decisions after becoming aware of only some of the possible options or choices.

_Contingency theories_ of leadership include
situational variables which influence the relationship between leader behavior and outcome measures. The relationship between leader behavior and situational factors may be reciprocal.

**Department** is the term used to describe the smallest academic unit at each of the institutions, a classification based on content area. The term division is also used, but the term department was chosen because it is more familiar than division and academic unit.

**Educational effectiveness** is a measure of a faculty member's perception of the students' level of achievement and the faculty's level of commitment. The concept was measured using the Educational Effectiveness Opinionnaire (EEO), developed for this study.

**Leader behavior** is measured by the Leader Behavior Description Questionnaire and is therefore defined by the LBDQ. It is a description of the extent to which the academic administrator is concerned with individuals and with the task itself, as perceived by faculty members in the department. Leader behavior includes those activities which enhance relationships and facilitate the achievement of organizational goals.

**Work environment** is the term used for the social climate of the work setting, reflecting the consensus of faculty members within a department about the extent to which participants are concerned, friendly and supportive;
the extent to which self-sufficiency and goal achievement exist; the extent to which the organization functions smoothly and predictably.

LIMITATIONS OF THE STUDY

The extent of external validity is of concern in this study. The study's population is restricted to full-time, college parallel faculty members in one state's community colleges. Thus, the findings may not be generalizable to part-time faculty members, technical or basic skills faculty members, or faculty members in four-year or other types of two-year institutions. The sample for the study is limited to faculty members in four of the eight community colleges in the state, and these faculty members may not be representative of faculty members in the state's other community colleges or of faculty members in community colleges in other states. While the institutions in the study have similar organizational structures, the first-line academic administrators have slightly different job responsibilities; therefore, the faculty members' expectations for the leader may differ. Comparing LBDQ results from somewhat dissimilar settings or organizations necessitates caution in interpretation.

Research studies involving the work environments and leadership, especially in community colleges, are few. Consequently, the conceptual framework for this study relies on theories and findings drawn from other settings;
their application to this study might not be appropriate. Thus, the lack of prior research specific to the community college setting is a limitation of the study.

The use of self-report inventories, especially high inference measurement instruments such as attitude scales, is a controversy in survey research. In addition, Guion (1973) charges that researchers cannot agree about whether climate is an organizational or an individual attribute. The accuracy of individual perceptions and the honesty of responses are added concerns of researchers using self-report inventories. Additionally, definitions of leader behavior, the work environment and educational effectiveness are limited to the instruments used to measure these variables, further subjecting the study to the limitations of instrument research.

The Educational Effectiveness Opinionnaire (EEO) did not have established construct validity before it was included in the study. It had only content validity. The results of factor analysis done after data collection are, however, reported in Chapter III. As a further limitation, the EEO is predicated on two assumptions: (1) faculty members in community colleges have an accurate sense of how their students compare with students in four-year institutions, and (2) faculty members believe they should be responsive to diverse students' academic needs. While the EEO is a relatively untested instrument, it has the
advantage of having been specifically designed for this study.

The final limitation of the study is the response rate of 68.7%. While such a response rate is not uncommon in survey research, the similarity between respondents and nonrespondents remains unknown.

SUMMARY OF THE CHAPTERS

In Chapter I, the problem is introduced and the three variables which are the basis of the study are defined. Also included in the chapter are a theoretical framework and the conceptual model for the study; the hypotheses; a definition of terms, and the limitations of the study.

Chapter II is a review of the selected literature applied to this study to provide a conceptual framework. The areas of literature summarized in this chapter are Work Environment and the WES, Leader Behavior and the LBDQ, and Organizational Effectiveness and the Community College Setting.

In Chapter III, the investigator describes the methodology used in the study. Included are a discussion of survey research, a review of the theoretical framework, a description of the sample, a summary of the questionnaire administration and an explanation of the instrumentation including the development of the Educational Effectiveness Opinionnaire (EEO). The statistical analysis procedures required by the study and
reported in Chapter IV are listed at the end of the chapter.

In Chapter IV, the results of the data analysis are presented. The investigator first reports central tendencies for the three variables. Three correlational matrices are then presented to report the relationships of variables in the study. Faculty characteristics are summarized. The chapter concludes with the results of the multiple regression analysis, the statistical method used to explain sources of variance.

In Chapter V, the investigator summarizes the results of the study, presents conclusions and recommends directions for future research.
CHAPTER II
REVIEW OF SELECTED LITERATURE

INTRODUCTION

The literature reviewed in this chapter is organized into three categories, an organization designed to provide a definition of the study's variables and the hypothesized relationships among them. The sections are Work Environment and the WES; Leader Behavior and the LBDQ; and Organizational Effectiveness and The Community College Setting.

Researchers who have investigated the relationships between leader behavior and organizational outcomes have not found a simple, causal relationship between them; leader behavior has not been consistently related to the typical outcome measures of subordinate effort, performance or satisfaction (Kerr and Schriesheim, 1974; Yukl, 1981; Bass, 1981). As a result, various contingency theories have been developed (e.g., Fiedler, 1967; Yukl, 1981; Hersey and Blanchard, 1977) in an attempt to identify the aspects of a situation which influence or mediate the leader behavior-organizational outcome relationship. In addition, many researchers believe that it is important to understand the situation or work environment characteristics before one can select the
appropriate leader behaviors to facilitate productivity and to improve organizational effectiveness in that setting (Wofford, 1971; Yukl, 1981; Bass, 1981).

House (1971), for example, has examined the mediating effects that subordinate expectancies and valences, the task characteristics, the work environment and characteristics of subordinates have on subordinate effort and satisfaction. He suggests, in his Path-Goal theory of leadership, that the leader needs to provide the coaching and incentives which are not otherwise provided by the organization or work group. Kerr and Jermier (1978) suggest that formal leadership may even be redundant for a self-motivated work group with a clearly defined task. Effective leadership, then, appears related to the characteristics of the organization, the participants, the task and the work environment. In general, leader behavior cannot be studied in isolation, apart from the work environment, measures of outcome or other organizational variables.

THE WORK ENVIRONMENT AND THE WES

The work environment is the social climate of the work place and hence falls under the general rubric of social climate. The social climate perspective assumes that environments, like people, have unique personalities which can be described with accuracy and detail (Moos, 1976). The social climate is also assumed to have a
significant impact on the people functioning in it.

The study of individuals in their environments and the influence of the environment on individuals can be traced back to the seminal work of Henry Murray and Kurt Lewin. Murray (1938, in Moos, 1974) first conceptualized the dual forces of personal needs and environmental press. The individual has personal needs which Murray believes characterize personality; the environment potentially satisfies or frustrates these needs. Murray's needs-press model for studying behavior is based on the interaction between personality needs and environmental press. In Lewin's theory of motivation, climate is the essential functional link between the person and the environment, the dynamic that links human behavior to environmental stimuli. According to Lewin, climates are scientifically describable facts and empirical realities. He said (1951, in Litwin and Stringer, 1968, p. 36) that the psychological field within which individuals function includes the specific items of "particular goals, stimuli, needs, social relations and the general characteristic of atmosphere." The environment or the climate characteristics provide the motivation for individuals to behave in a particular way. Later researchers, building on the theories of Murray and Lewin, have developed instruments to measure social climate and models to apply to climate research studies.
For example, Pace and Stern (1968, in Tagiuri & Litwin, 1968) based their College Characteristics Index on Murray's needs-press model but expanded Murray's environmental press to include the social demands of the situation. They interpret the perceived climate as a measure of the general atmosphere of a setting; they hypothesize that the consensus of students who characterize their college environment results in a measure of environmental climate, a climate which exerts a directional influence on student behavior. Their purpose in developing the CCI was in part to operationalize Murray's needs-press model.

Getzels and Thelen (1960) characterize classrooms as social systems with particular climates. Climate, in their model, develops as a result of the teacher's transactional style, the way in which the teacher manages to balance the role requirements of the situation and the personal needs of individuals. Litwin and Stringer (1968) base their climate model on the McClelland-Atkinson model of motivation; individuals are motivated by needs for achievement, for affiliation and for power. Climate, for Litwin and Stringer, is the "cumulative sum of expectations and incentives" (p. 38) across motivational needs. Climate is an intervening variable, mediating between organizational system factors and participants' motivational tendencies.
Halpin and Croft (1963) developed the Organizational Climate Description Questionnaire (OCDQ) which allows them, based on participant responses, to categorize climates as one of six climate types arranged on a continuum: Open, Autonomous, Controlled, Familiar, Paternal and Closed. The OCDQ has eight subscales, four of which focus on group behavior and four of which focus on the leader's behavior. The leader characteristics are aloofness, thrust, consideration and production emphasis. The group characteristics are disengagement, hindrance, esprit and intimacy. Both the leader and group characteristics (OCDQ subscales) can be categorized under the two-factor leader behavior description of Consideration and Initiating Structure (person-orientation and task orientation), the factors of the Ohio State leadership scale (LBDQ). Halpin, who was involved in the Ohio State Leadership Studies, says that organizational climate is, to a great extent, a function of the interpersonal relations of faculty, motivated by social needs and task accomplishment requirements.

The Social Climate Scales

Rudolf Moos (1974, 1979) developed a series of social climate scales, all of which have discrete subscales, subscales which are then clustered into the same three dimensions of Relationship, Personal Growth and System Maintenance and System Change; Moos (in Walberg, 1979)
says the scales have been empirically derived across diverse settings and therefore have an applicability to all settings.

Social climate is described as a set of perceptually based attributes (Jones and James, 1979; Moos, 1974), and although multidimensional, climate appears to have a central core of dimensions such as the three dimensions (Relationship, Personal Growth and System Maintenance and System Change) which underlie all of Moos' social climate scales. Moos believes that all social climates can be described in terms of these three dimensions and that the social climate dimensions hold well for scales developed by other researchers. In 1974, Moos and Insel compared the social climate scales to instruments developed by other researchers and found similarities. Litwin and Stringer (1968), for example, characterize an achievement-oriented environment as one permeated by a sense of excitement about personal goal accomplishment, fostering individual exploration, emphasizing personal responsibility, viewing the individual as a member of the team, and providing recognition and reward for excellent achievement. This description, according to Moos (1974), is similar to the Personal Growth Dimension of the social climate scales. Litwin and Stringer believe that educational environments should be high on achievement orientation, with an affiliation-oriented component characterized by warm,
supportive relationships and considerable freedom to facilitate the development of interpersonal sensitivity (Moos' Relationship dimension).

Stern's Organizational Climate Index, according to Moos (1974), has two dimensions (Closeness and Group life) which appear related to the Relationship dimension; three of Stern's dimensions (Intellectual Climate, Personal Dignity and Achievement Standards) reflect Personal Growth; the last two, Orderliness and Impulse Control, appear to be System Maintenance and System Change dimensions. The similarity of these broad categories gives a convenient theoretical framework to climate research, according to Moos.

Insel and Moos compared the social climate scales' dimensions with those of eight other climate instruments including Walberg's Learning Environment Inventory (1969), Halpin and Croft's Organizational Climate Description Questionnaire (1963) and Pace's College and University Environment Scale (1969). They conclude that the social climate scales' three dimensions allow "an adequate and reasonably complete picture of the environment to emerge" (p. 186). Moos' area of interest is the social climate, and he believes similarities exist which cross social settings and instruments.

Moos and his associates have developed several social climate scales including the Work Environment Scale (WES),
the University Residence Environment Scale and the Family Environment Scale, all of which have the same three dimensions and therefore having general utility for investigating person-environment interactions. From a broader perspective, Moos says that environmental systems are comprised of the physical setting, organizational factors, the human aggregate or the characteristics of individuals, and the social climate. The social climate is the major mediator, influencing the other three components of the setting. Jones and James (1979) agree that individual perceptions of the work climate may be parsimoniously summarized by a few dimensions that describe a wide range of environments.

Moos defines the Relationship dimension as the extent to which individuals are involved in the setting, support and help one another and express themselves freely and openly. The Personal Growth or goal orientation dimension involves the basic goals of the setting, its underlying purposes. The System Maintenance and System Change dimension measures the extent to which the environment is orderly and clear in its expectations, maintains control and is responsive to change.

**Aggregate Data**

Respondents describing the same environment often do so with high levels of agreement, which suggest that each respondent has experienced common situational conditions
which he or she then describes in a similar way (Insel and Moos, 1974; Jones and James, 1979). James and Jones (1974), in a review of the literature, discuss an area of concern which exists despite respondent agreement: the extent to which organizational climate duplicates other organizational and individual domains. They discuss two perspectives or approaches to the study of organizational climate, the perceptual measurement-individual attribute approach and the perceptual measurement-organizational attribute approach, both of which use questionnaires to measure the climate of the work place. The difference between the two perspectives is whether to interpret climate as an individual or organizational characteristic. Miskel, et al. (1983) say that studies are needed to link organizational processes to individual attitudinal processes and to attribute climate to the individual or the organization. Both sets of processes are studied concurrently, a difficulty because investigators have to couple psychological and organizational levels of theory. Jones and James (1979) found that participants in subunits of similar functional type in one organization (subunits on ships in the US Navy) appear to describe climate similarly, suggesting that descriptions of climate are related to subunit function; respondents in different departments on the same ship described the work environment differently. James and Jones conclude that
aggregation of responses from relatively homogeneous subunits appears feasible, but they recommend that individual differences continue to be investigated.

The Work Environment: Its Relationship to Other Variables

While the work environment of an organization as described by organizational participants can be interpreted as either an individual or an organizational characteristic, researchers have found consistent and significant relationships between perceptions of the work environment and other variables of interest. In addition, the basic logic and conceptualization of multidimensional environment with a limited number of dimensions appears consistent across scales designed to describe environments. However, according to Insel and Moos (1974), there is no well defined ideal environment that can meet everyone's requirements. Appropriate leader behavior and the ideal environment are situation-specific and vary from one individual to another.

Appleby and Nunnery (1980) investigated the community college department chairperson's motivation and leadership style as a determinant of organizational climate. They were especially interested in the community college setting because few studies of managerial motivation and organizational climate had been done in educational settings and those, for the most part, had been done in K-12 settings. They reasoned that if leadership style made
a significant contribution to organizational climate, they could suggest practical applications for the selection and training of department chairpersons. They found, however, that less than 8% of the variance in organizational climate could be accounted for by the leader's need for power, affiliation and achievement.

Characteristics of individuals in therapeutic settings appear to have an influence on their perceptions of climates. Using Moos and Insel's Work Environment Scale in a community mental health center, Amante and Van Houten (1976, in Moos and Max, 1977) found significant differences in employee perceptions based on years of work at the center and sex of the respondent with women reporting more autonomy and peer cohesion. Pank and Robinowitz (1975, in Moos, 1977) found personality to be a factor in perceptions of the treatment environment as described by patients. Severely maladjusted patients perceived more staff control. Wetzel (1976, in Moos, 1977) used Moos' Work Environment Scale and Family Environment Scale in a study of clinically depressed working women. He concludes that incongruence between personal disposition and the work environment is a possible cause of depression.

Astin and Holland (1961) used the Environment Assessment Technique (EAT), based on Holland's six modal personality types, to investigate the relationship between
individual characteristics and the social climate. They determined that social climate is dependent upon the nature of the members. "If we know the character of the people in a group, we know the climate the group creates" (p. 308). Hearn and Moos (1976), using Moos' University Residence Environment Scale in residence halls where students had the same major or who were in the same category according to Holland's typology, found social environments which were as Holland would predict. For example, in residence halls with social science majors as residents, the predicted climate would be high on Independence and Emotional Support. Feldvebel (1964) suggests characteristics of teachers may be important predictors of the organizational climate of a school or department.

Kavanaugh (1975) found a clear relationship between individual needs and respondents' descriptions of their ideal leader and work environment. Managers in the study described a preference for the High Consideration-High Initiating Structure leader (LBDQ), but individual differences did appear to influence expectations for leader behavior and the desired organizational climate.

While some researchers define (Lawler et al., 1974) organizational climate as the employee's subjective impression of the climate and related to perceptions of outcome variables, Lawler notes that climate research has
indicated that aspects of the work environment as perceived by individuals are consistently related to the interpersonal style of the leader, interpersonal relations among peers, the nature of the job and the structure of the organization and its reward system, clearly organizational characteristics. Toler (1972), who used the Organizational Climate Description Questionnaire in eight community colleges, found no differences by department or institution in general but did find some differences between departments for the Open, Autonomous, Familiar and Closed profiles, as described by faculty members.

Winteler (1981), in a review of the literature on academic environments, reports that the department appears to be the most important factor in the teaching-learning environment. Departments appear to differ on the quality of student-faculty relationships and on the faculty's interest in students and teaching, and they appear to have a distinct atmosphere, the result of academic area and the preferences and style of faculty. In his own study, Winteler found social science faculty members to be more people-oriented and student-centered. Among natural science faculty members, relationships were less personal. Winteler suggests Holland's person-environment congruence theory was operating and influencing faculty satisfaction. Drexler (1977) found that departmental effects on climate were weaker than organizational effects, suggesting that
organizational climate is an organizational, rather than an individual, group or departmental attribute. Gavin (1975), finding that personal and organizational variables account for small but significant amounts of variance in organizational climate, concludes that organizational climates do not merely reflect organizational and individual differences.

Schriesheim (1980) found work group characteristics play an important role in determining leader-subordinate interactions. Bass and Valenzi (1974, in Hunt and Larsen, 1974) found that a leader may use a variety of leadership styles, reflecting work group preferences, organizational factors, and task characteristics, three variables which they define as the environment. They also found a directive leadership style related to work unit effectiveness and satisfaction. Jones and James (1979) failed to identify significant relationships between climate scores and subunit context, but they did find some indication that organizational characteristics and group processes mediate the influence of subunit context and structure on climate perceptions.

Moos (1979) says that the study of classroom learning environments lacks a conceptual base, resulting in isolated findings and no consistent body of knowledge; however, Moos and Max (1977) cite studies which have indicated that social climate is a mediating variable
among personality variables, classroom environment and student outcome measures. Ellett and Walberg (in Walberg, 1982) found that teacher attitudes mediate between the principal's behavior and the social environment of learning. They used the School Survey, developed as a measure of teacher morale and work satisfaction, which includes the subscales of Supervisory Relations and Colleague Relations (similar to Moos and Insel's WES Relationship Dimension) and Educational Effectiveness. Sullins (1981) says that community college leadership is the maintenance of an institutional climate that fosters faculty commitment and pride in one's work. Walker (1981) says the community college organizational climate is influenced by the interaction between administrators and faculty. Pond (1973, in Moos, 1977) found teachers derived satisfaction from their perceptions of overall school climate but not from the climate of their classrooms. Mitchell (1980) recommends that negative community college work environments be identified and improved, as poor work environments are counterproductive, wasting individuals' time and energy.

Moos categorized classroom environments using the Classroom Environment Inventory (CEI) into a 6-factor typology, based on the three climate scale dimensions (1979). He relates climate scores on the CEI to student achievement, involvement and satisfaction. In general, it
would appear that social climate measures in an educational setting discriminate between environments and are useful for describing, comparing and evaluating educational environments. In addition, the perceived environment appears to be the real environment for students (Winteler, 1981) and for faculty members (Gaff and Wilson, 1971) because people act on the basis of their perceptions. The work environment is apparently related to leader behavior and outcome measures (Pollock and Breuder, 1982; Hemphill, 1949) and to individual perceptions and differences (Benoit and Smith, 1980; Stecklein and Willie, 1982; Litwin and Stringer, 1968).

**LEADER BEHAVIOR AND THE LBDQ**

Scientific leadership research, which began only in the 20th century, can be categorized under one of four approaches: power-influence approaches, trait approaches, behavior approaches and situational/contingency approaches (Yukl, 1981). The trait approach is an attempt to identify the traits or characteristics of effective leaders. The leader behavior approach, a research effort centered around the Ohio State University Leadership Studies and the Michigan Leadership Studies in the 1940's and 1950's (Kerr et al. 1974; Yukl, 1981; Bass, 1981), is an attempt to find the behaviors which distinguish between effective and ineffective leadership, with effectiveness most commonly measured as the extent to which the leader's
group accomplishes its task or achieves its goal. The Ohio State Leadership Studies are described by Kerr et al. (1974) as one of the most comprehensive research programs in industrial psychology and organizational behavior.

The first phase of the Ohio State research program was the development of a questionnaire to measure leader behavior. Hemphill (1949) said leadership is what an individual actually does in a situation, the "behavior of an individual who is involved in directing group activities" (p. 96). The researchers therefore compiled a list of 1800 examples of leader behavior, reduced to 150 items for the preliminary instrument. The questionnaire results were factor analyzed to determine the relationship of items and to identify any underlying factors or clusters of items. Two factors, Consideration (C) and Initiating Structure (IS), were identified: Consideration is a relations orientation, the extent to which the leader is concerned about group members, pursues a human relations approach and tries to maintain friendly, supportive relations with subordinates. Initiating Structure is the level of task-orientation and reflects the leader's concern with achieving the group's goals. The 150-item questionnaire was then shortened to the 40-item Leader Behavior Description Questionnaire (LBDQ), designed to measure Consideration and Initiating Structure.

The next step in the Ohio State Leadership research
was a series of correlational field studies to determine whether the leader's use of C and IS could be related to leader effectiveness. The dimensions of C and IS were observed to vary independently, indicating that in general the effective leaders are high on both dimensions (Scott, 1981; Yukl, 1981; Bass, 1981). After more than three decades of research using the LBDQ or one of its forms, a High C-High IS leader is in general the most effective, but not in all situations. Neither behavior category is consistently related to performance, although Consideration is usually related to satisfaction (Stogdill, 1974; Kerr and Sch riesheim, 1974).

Situational variables modify the effects of leader behavior on productivity; effective leadership cannot be specifically defined across all settings. This finding is congruent with the early thinking of the Ohio State research team. Fleishman (in Kerr et al., 1974) said in 1953 that leadership is to a great extent situational. Hemphill and Stogdill, also members of the research team, had noted earlier that effective leadership in one situation is not necessarily effective leadership in another situation. Later contingency theories of leadership have included a variety of situational variables in an attempt to determine more specifically the relationships between leadership, the environment and productivity.
Participant Expectation

Stogdill, et al. (1956) said that the expectations of superiors, subordinates and peers specify appropriate leader behavior for the individual in a specific position; participants function more as an integrated unit when the leader behavior conforms to their expectations. Johnson and MacBeth (1979), in a study of physical education faculty members and department chairs, found that whether administrators are perceived as successful or not depends on the faculty's perceptions of what an administrator's role should be. Bass (1981) notes that followers in a wide variety of groups consider it legitimate for the leader to influence matters of task performance and the work environment. At higher levels, participants interpret structure as innovation and coordination, rather than a push for production. In general, Bass reports that satisfaction and Consideration appear to be related, but correlations between Initiating Structure and subordinate satisfaction and productivity vary depending upon the instruments used, the personnel, the goals of the organization and subordinates' expectations.

Fleishman and Harris (1962 in Yukl, 1981) found a curvilinear relationship between subordinates' voluntary turnovers and written grievances and the leader's Consideration (C) and Initiating Structure (IS). High ratings on Consideration correlated with low turnover and
grievance rates while high structure ratings correlated with high turnover and grievance rates. Certain critical levels of C and IS appear to exist, after which there is little effect, suggesting participants expect or tolerate certain levels of both factors.

Kavanaugh (1975) investigated the relationship between subordinate expectations and leader behavior; he found that employees do not necessarily prefer freedom and self-actualization opportunities. Their preferences for an organizational climate and and for leader behavior were related to personal expectations.

Kerr et al. (1974), in review of the literature, concluded that the disparate or inconsistent results of research using the LBDQ appeared related to situational variables and subordinate characteristics. In high pressure situations like combat, economic recession or time pressure, for example, structure is related to satisfaction. The subordinates' need for direction is also an important variable; those who are competent want less task structuring. When discrepancies exist between observed and expected Consideration and Initiating Structure, the level of discrepancy is negatively related to performance. However, low Consideration, even if expected, does not result in satisfaction or performance (Kerr et al., 1974).

The Impact of the Organization
Leadership style appears to be related to organizational characteristics and supervisory practices. Stanton (1960, in Bass, 1981) found supervisors in a profit-oriented firm with authoritative policies favored more structure, while supervisors in a firm which stressed participation and employee well-being as well as profits favored more consideration. Miskel (1977) found that superordinate and subordinate perceptions of principals' leader behavior are related, suggesting agreement at different organizational levels. Bass and Valenzi (1974, in Hunt and Larson, 1974) categorized organizations according to the system input characteristics: intragroup conflict, the amount of organization, and management characteristics, characteristics which they found made a difference in management style-unit effectiveness characteristics. They found, for example, that when an organization is disorganized, participants are more satisfied with directive leadership. Bowman (1964 in Bass, 1981) found principals perceived themselves as delegating authority and exercising responsibility when they described their superiors as high on Consideration but not on Initiating Structure.

Fleishman et al. (1955, in Bass, 1981) found that supervisors working under time constraints received higher ratings from their own supervisors if they exhibited more Initiating Structure while the reverse was true for
supervisors in service departments, suggesting that the subunit's function in the organization has an impact on leadership. In other studies reported by Bass, role conflict seems to influence the subordinates' perceptions of leader effectiveness. Conflicting expectations for the leader held by subordinates, superordinates and self influence the behavior which is then described from three separate perspectives. The leader's influence with higher authorities has also been found to influence the impact of C and IS on performance and satisfaction (Pelz, 1952 in Bass, 1981).

Kerr and Jermier (1978) suggest that situational variables and participant characteristics may render leader behavior ineffectual, unnecessary and redundant, no matter how it is defined. Their situational variables are those characteristics of the subordinates, the task or the organization that ensure subordinates understand the task and are motivated. A cohesive work group, for example, substitutes for both supportive leadership and directive leadership (Consideration and Initiating Structure). Professionals such as university professors, according to Kerr and Jermier, do not require supportive or directive leadership. In one study, Kerr and Jermier used a survey research approach with police officers to investigate the individual, task and organizational variables which act as substitutes for leadership. They found that guidance and
task structuring do not need to come from the formal leader, but can come from other work group participants. A closely-knit work group can neutralize the need for a leader.

Attribution and Leadership

Attribution appears to influence participants' perceptions of the leader; participants' descriptions of leader behavior appear to vary systematically with other variables. Stogdill et al. (1956, p. 7) said that "leaders either tend to do what they are expected to do, or tend to be expected to do what they do."

Butterfield and Powell (1981), in a laboratory experiment, manipulated participants' beliefs about the group performance in an attempt to assess the contribution of group performance on descriptions of leader behavior while controlling for leadership style. The High C-High IS leadership style was associated with group performance, but managers exhibiting identical styles were described differently, depending on group performance. Mitchell et al. (1977) found evidence in three separate studies that perceptions of good group performance resulted in higher ratings for the leader's behavior and situational favorableness, measured by the LBDQ and Fiedler's Situational Favorableness instrument. The researchers concluded that the attributional process was a confounding variable and noted that the directionality of the
relationship of variables remained unclear. Rush, Thomas and Lord (1977) found LBDQ-XII scores were apparently influenced by information about the quality of group performance and the implicit theories about leadership held of respondents. Bentz (in Stogdill, et al., 1956) found less discrepancy between the ideal and reported behavior of department heads in departments which were perceived as well administered. Mitchell, Larson and Green (1977) also found that perceptions of leader behavior and situational characteristics were influenced by perceptions of performance.

Green and Mitchell (1979) say that attribution theory can be used to describe and understand the causes of leader behavior in leader-member interactions. In their model, member behavior is interpreted by the leader and attributed to a cause; leader behavior is a response to that causal factor. For example, if the leader concludes that a subordinate does not understand the task, that leader will conclude that more Initiating Structure is required.

Leadership and Climate

Miskel (1977) reported that the principal is perceived as effective if the interpersonal climate in a school is positive. Other studies appear to confirm the relationship between climate and leadership. Hengstler et al. (1981), for example, found a positive correlation
between faculty member's ratings of the department's quality and ratings of the department chair. Departmental quality was in part defined as satisfaction with the academic environment. Faculty ratings appeared to be a useful criterion to evaluate a department or department head in the Hengstler study. Litwin and Stringer (1968) believe that a theory of motivation and climate can explain why the same individual performs differently in a different setting. They conclude that climates can be achievement-, affiliation-, or power-oriented and that leaders can create the necessary environment to improve motivation and performance.

Baumgartel and Sullivan (1975, in Miskel, 1977) suggest that complex and interactive variables influence the outcomes of administrative activity. They developed the Situational Description Questionnaire to measure administrative practices and the interpersonal climate, the variables they believe influence outcomes. Ogilvie and Sadler (1979) found that perceptions of school effectiveness are closely linked to perceptions of the school's organizational climate, especially those dimensions of climate which focus on the principal's leader behavior. The schools which teachers considered effective had principals which teachers described as supportive, considerate, industrious and communicative.

In a school setting, Keeler and Andrews (1963, in
Bass, 1981) found Initiating Structure was positively related to staff cohesiveness, but Consideration was not. Bass also reports a study by Wall (1970) where teachers in ineffective schools wanted principals to demand more reconciliation and more integration of the group. Teachers also wanted principals to initiate more structure. Couglan and Cooke (1974), in a review of literature, conclude that teacher morale is related to student achievement. 

Leadership, Faculty Performance and Student Achievement

The study of leader behavior is particularly useful when leader behaviors are related to organizational climate and organizational outcomes. In critiques of the literature (Kerr and Schriesheim, 1974; Bass, 1981; Yukl, 1981), authors report neither C or IS has been found consistently related to subordinate performance or satisfaction; however, principals' LBDQ scores, reported by teachers, have been significantly and positively related to students' examination scores (Keeler and Andrews, 1963 in Bass, 1981).

Hills (1963) used the LBDQ in a study of principal behavior, teacher morale, teacher satisfaction, teacher confidence in the principal's leadership, teacher assessment of the principal's effectiveness and the superintendent's assessment of the principal's effectiveness. All criterion variables except the superintendent's assessment were related to a High C-High
IS leadership style.

In a study of junior college deans, Carson and Schultz (1964) used the LBDQ to describe the perceived and expected leader behavior of the dean, as described by department heads, the presidents of the institutions and student leaders. The results indicate a role conflict for the dean, because expectations vary among groups. Student leaders and department heads both expect more Consideration and Initiating Structure than they perceive exists, suggesting a need for the deans to emphasize both factors. Greenfield and Andrews (1961) found that students, teachers and principals describe teacher behavior somewhat differently, although there is a significant level of agreement. Initiating Structure was a better predictor of student achievement than was Consideration, and group ratings of teachers and students were more significant in predicting student achievement than was the principal's rating of the teacher's leadership.

Bhella (1982) examined the relationship between principal behavior and teacher morale, theorizing that if administrators can improve morale of teachers, student achievement might improve. A relationship had been established between teacher morale and student achievement in other studies (Coughlan and Cooke, 1974). In general, teachers in this study rated their principals high on
concern for people and production. These ratings were related to the morale subscales of rapport with principals and curriculum issues but not with satisfaction with teaching. Satisfaction with teaching was not related to either dimension of administrative behavior.

In college departments with reputations for being well administered, faculty members rate the chairperson above average on Consideration and Initiating Structure, descriptions that more nearly meet the behavior expected of the ideal chairperson as described by faculty members (Hemphill, 1955).

Rasmussen (1976) found a significant relationship between the principal's leader behavior and student performance when student socioeconomic background was controlled. Some support was found for the interpretation that different leadership behaviors are appropriate in different situations.

In experimental research where levels of Consideration and Initiating Structure and/or other situational variables are controlled, the levels of C and IS, performance or satisfaction apparently do vary systematically (Gilmore, et al., 1979; Dawson, et al., 1972). A college-level psychology instructor (Dawson et al., 1972) systematically varied his teaching styles with four classes. One group experienced high Consideration and high Initiating Structure, another experienced high C
and low IS, a third experienced low C and high IS, and the fourth group experienced low C and low IS. The researchers concluded that productivity was greater for the High C-High IS group of students.

Ellett and Walberg (in Walberg, 1982) constructed a theoretical model which they believe depicts the circularity of causal relationships between the principal's behavior and student outcomes. (See Figure 2 on the following page.) Mediating variables are the factors associated with cognitive, affective and behavioral characteristics, termed mediating because they intervene between the principal's functioning and student outcomes. Solid lines represent a direct theoretical impact; broken lines represent the effect of the consequences of principal behavior or subsequent behaviors and the effect of other factors on the principal's behavior.

Ellett and Walberg's theoretical model was used as the basis of a large-scale field test. Principals, teachers, students, central office personnel and an outside observer completed questionnaires designed to measure the variables of interest: the school environment, leader behavior and educational outcomes. The School Survey, a 14-dimension instrument, was used to measure school environment characteristics. Dimensions include supervisory relations, colleague relations and
ELLETT AND WALBERG'S THEORETICAL MODEL

1. Principal Behavior
   (a) Perception
   (b) Intent
   (c) Behavior

2. Teacher Behavior
   (a) Perception
   (b) Intent
   (c) Behavior

3. Student Behavior
   (a) Perception
   (b) Intent
   (c) Behavior

4. Parents and others
   (a) Perception
   (b) Intent
   (c) Behavior

5. Student Outcomes
   (a) Attendance
   (b) Learning
   (c) Achievement

MEDiating VARIABLES WITHIN THE SCHOOL
MEDiating VARIABLES OUTSIDE THE SCHOOL

Figure 2
educational effectiveness. The results, according to the authors, are not definitive, but they support the hypothesized relationships presented in the theoretical model. The strongest and most frequent relationships were those between teachers' perceptions of the environment and their assessments of the principal's behavior. Ellett and Walberg say a basic research concern is establishing relationships between principals' performance and meaningful criterion variables in the school environment.

Critiques of the LBDQ

The most frequent criticisms of the LBDQ are that the High C-High IS leadership style is too simplistic and that the two-factor definition fails to account for situational variables (Kerr et al., 1974; Bass, 1981). Kerr et al. also note the frequent criticism that the two factors may not be independent and may even be negatively correlated if respondents cannot consider the two dimensions separately or if leaders cannot behave in such a way as to be perceived high on both Consideration and Initiating Structure.

Stogdill (1974) reports similar results for a democratic/autocratic leadership theory. Neither democratic nor autocratic leadership appears related to productivity. However, in small, interaction-oriented groups, members appear more satisfied with democratic leadership. Autocratic leadership is more related to
satisfaction in large, task-oriented groups. Bass (1981), in his review of leader behavior literature, reports several studies where Consideration and Initiating Structure are related to satisfaction, group cohesiveness and perceived unit effectiveness, but they are not consistently related to productivity.

Despite criticism of the two-factor theory underlying the LBDQ, many other researchers have used similar conceptualizations. Fiedler's (1967) Contingency Theory is similar to the LBDQ two-factor theory in that Fiedler's High LPC (least preferred coworker) leader has as a primary motive the development of close, interpersonal relationships. The Low LPC leader focuses on task objectives. Hersey and Blanchard (1977) present two broad categories of leadership, relationship behavior and task behavior, which are similar to Consideration and Initiating Structure. They emphasize the importance of flexible, adaptive leader behavior, responsive to the nature of the task and to subordinate characteristics, the situational variables in their model. Blake and Mouton's Managerial Grid (1964) is based on a two-factor theory of person- and task-orientation. Bass and Valenzi (1974, in Hunt and Larson, 1974) note that two dimensions of leadership consistently appear in leadership analyses. Getzels and Thelen (1960) present a model of leadership where the transactional leader, sensitive to both the
requirements of the role (nomothetic) and the needs of the individual (idiographic) is the most effective leader. Guba and Getzels (1957) note that organizational effectiveness is represented by the relationship between the nomothetic dimensions's expectations and behavior; efficiency is represented by the relationship between idiographic needs and behavior.

Most leader behavior research, including research using the LBDQ, has been correlational research which cannot examine causality or directionality. Kerr and Schriesheim (1974) believe the causality issue is being dealt with through longitudinal studies and other designs. While more needs to be learned, there is increasing evidence that subordinate performance appears to cause Consideration and that a reciprocal causality exists between Consideration and subordinate satisfaction (Kerr and Schriesheim, 1974). The psychometric problems with the LBDQ scales still exist: inadequate control for agreement response, scores contaminated by social desirability and leniency, evidence that the scales include behavior dimensions other than Consideration and Structure, and disparate forms (LBDQ, LBDQ-XII, LOQ and SBDQ) of the Ohio State leadership scales. Schriesheim et al., (1976) noted, for example, that Initiating Structure on the Supervisor Behavior Description Questionnaire (SBDQ) was more punitive and autocratic than on the LBDQ. Schriesheim and
Denisi (1980) examined inherent instrument bias in the LBDQ and the Michigan Four-Factor Leadership Questionnaire; their results led them to speculate that leader behavior questionnaires may be closer to personality testing than performance testing.

In defense of the LBDQ, Kerr et al., (1974) say that the scales are theoretically meaningful, have been factor analyzed and are descriptive of behaviors which raters can agree on. Additionally, numerous studies have resulted in normative data. Despite the fact that leader behavior researchers have developed a variety of instruments and typologies, a commonality appears to exist among the scales, and a two-factor theory appears useful for examining leader behavior.

ORGANIZATIONAL EFFECTIVENESS AND THE COMMUNITY COLLEGE SETTING

Moos' (1976) area of concern is the individual. He says that social ecology is a field of study designed to understand the impact of the environment on the individual with the value-oriented goal of facilitating individual growth. However, research which deals with organizational effectiveness measures organizational output, organizational processes or organizational structures (Scott, 1981). Organizational effectiveness is an organizational characteristic; the work environment may be either an individual characteristic or an organizational
characteristic.

Assessing organizational effectiveness is difficult because organizational effectiveness is a multidimensional concept. Virtually every phase, process or outcome variable has been used as a criterion (Scott, 1981; Miskel et al., 1983); variations in theoretical perspectives, in time horizons and in the level of analysis and diversity among participants and constituents result in divergent views of what an organization is and should be doing (Scott, 1981).

Many different writers have discussed problems associated with evaluating educational organizations and organizational subunits. Cameron (1978) says that the two main problems of assessing organizational effectiveness are the selection of the type of criteria and the sources or originators of criteria. Some researchers (e.g., Pennings and Goodman, 1977) rely on the dominant coalition to generate criteria; other researchers recommend external constituencies (Perrow, 1961); a third group recommends a broad range of constituencies (Katz and Kahn, 1978). In educational organizations, it is difficult for any constituency to specify concrete, measurable goals and outcomes because of the nature of outputs like personal growth and knowledge acquisition.

Goal diversity also presents a problem for researchers interested in effectiveness in all educational
organizations. In addition, Cameron (1978) lists other problems: evaluation creates skepticism and defensiveness; adequate records are rarely available; studies look at efficiency measures like a balanced budget instead of effectiveness measures; and measures of effectiveness may not even be applicable in organized anarchies (Cohen and March, 1974) and loosely-coupled systems (Weick, 1976). From Weick's perspective, some subunits may be effective while others are not. Etzioni (1960), who defines effectiveness as the optimum distribution of organizational resources among various needs, says that a goals model of organizational effectiveness is flawed because of the difference between publicly stated and private goals.

Scott (1981) says that organizational effectiveness can be evaluated based on outcomes, processes or structure. An outcome in an educational organization would be a change in knowledge or insight. From this perspective, student achievement, defined in some specific way, would be equated with effectiveness. The educational process can be evaluated, based on conformity to standards of good practice, although the selected standards may not have been evaluated. Evaluation of structure is a measure of the capacity to perform, equated with the degrees faculty members hold or the number of books in the library. Professional personnel would prefer to be
evaluated, according to Scott, on process. Clients prefer outcome measures and process measures. Accreditation teams often evaluate structure. The different preferences and viewpoints of various constituencies complicate evaluation.

The teacher or the professional in a bureaucracy is sometimes placed in a paradoxical, conflicting role because of specified outcome measures (Corwin, 1973; Bidwell, 1965). Bidwell says working toward a specified outcome may contradict the exercise of professional judgement and autonomy. Corwin says that disobedience is sometimes necessary to improve proficiency and best serve the client.

Two criteria for organizational effectiveness are the quality and perceived quality of the graduates (Caplow, 1964; Miskel, 1977), which Caplow labels achievement, one of his four criteria for organizational effectiveness. Friedlander and Pickle (1968, in Scott, 1981) found low and sometimes negative correlation coefficients among performance criteria, suggesting it is difficult to simultaneously respond to a variety of demands. Evaluating an educational organization's output is also difficult because of the ambiguity of standards of desirability. Scott (1981) recommends using relative standards, comparing one institution to another doing similar work.

In a study of six higher education institutions,
Cameron (1978) used an inductive approach to generate criteria for effectiveness. She culled 130 variables from the literature, interviewed members of the dominant coalition (Thompson, 1967) and did a factor analysis to identify underlying factors. Nine dimensions emerged including student academic development, professional development and quality of the faculty, student career development, and faculty and administrator satisfaction. Two instruments were developed to assess institutional effectiveness: a measure of perceptions and an objective measure. Cameron reports each institution was found to vary uniquely across the nine effectiveness dimensions. Some institutions appeared very homogeneous, with effectiveness criteria scores the same for subunits and the entire institution.

Cameron developed specific outcome measures for higher education institutions. She, like other researchers (Hanson, 1979; Miskel et al., 1980; Campbell et al., 1977; Hoy, 1982) believes educational organizations are different from other types of organizations. Hoy says the ambiguity of goals, unclear technology, uncoordinated activities and loosely connected structural elements make educational organizations "strikingly different" (p. 3). He believes closed system theories including the Getzels-Guba model are inadequate to explain educational organizations. Some researchers (Friedlander and Pickle,
1968, in Scott, 1981; Caplow, 1964) have argued for a universality of criteria for effectiveness which cross organizations, criteria which are applicable to all. The Educational Effectiveness Opinionnaire (EEO)

The effectiveness instrument developed for this study has only two subscales, but the subscales are approximations of or related to other definitions, subscales and instruments proposed by other investigators. The EEO subscales are Faculty Commitment (FC) and Student Achievement (SA). Miskel et al. (1983) defines school effectiveness as the faculty's evaluation of the school's productivity (SA), adaptability and flexibility (FC). Cameron's typology includes student academic development (SA) and the professional development and quality of the faculty (FC). Jones and James (1979) developed measures of effective performance which included the quality of work (FC) and readiness to fulfill commitments (FC). In addition, faculty perceptions of effectiveness appear to be related to student achievement (Perkins, 1976; Hengstler et al., 1981). Rugg et al. (1981) found members of an academic discipline agree on the importance of the institutional goals of instruction, intellectual pursuits and research.

The Community College Setting

The American community college has been characterized as an institution which has expanded its role, admitted a
diverse student population, hired faculty members from many backgrounds and reached out to serve its community (Cohen and Brawer, 1982; Monroe, 1977). These institutions are open-door institutions which Monroe says promise universal, free, open-door postsecondary education. They are teaching and community service institutions. Baldrige et al. (1978) say these relative newcomers, the public open-door community colleges, comprise the fastest-growing segments of higher education. They offer associate degrees for both transfer and terminating students. By comparison, faculty members in these institutions are less likely to have a doctoral degree or to publish than faculty in four-year institutions, and students have lower SAT scores than students in other types of institutions.

Community College Effectiveness

If faculty morale or satisfaction are viewed as output measures (Bridges, 1982; Hunt and Larsen, 1974; Yukl, 1981), community colleges appear to be effective (Cohen and Friedlander, 1980). Mitchell (1980) says, however, that morale, although indicative of a positive work environment, should not preclude or substitute for productivity or efficiency. Studies which have examined the relationship between faculty satisfaction and student achievement have not produced consistent results, so a measure of satisfaction cannot substitute for a measure of student achievement. Hartnett and Centra (1977) found no
departmental characteristics to account for the outcome variable of student achievement, but students' perception of the quality of student-faculty interaction was related to student achievement.

Effectiveness, according to Greenfield and Andrews (1961), is defined in terms of the goals of a given system of education, both short-term and long-term, because different goals may be equally appropriate and different patterns of behavior equally effective for reaching the same goal. According to Wenrich and Eakin (1978), community college missions and goals vary from institution to institution. In contrast, Falk (1979) found agreement between faculty members and chairpersons concerning the role of the chairperson, and Miskel et al. (1979) found that schools perceived as effective had specific characteristics (e.g. more participative organizational processes) which appear unrelated to goals or mission statements.

Despite the criteria problems associated with evaluating higher education institutions, administrative behavior, the work environment and educational effectiveness appear to be related and interactive variables. Ellett and Walberg (in Walberg, 1982) have identified a basic concern for educational research: establishing relationships among the administrator's performance; mediating variables within the school; and
meaningful criterion measures. In other words, the relationships among student achievement, leader behavior and the work environment are yet to be determined.

**RECIPROCAL AND INTERACTIVE RELATIONSHIPS**

Two gaps exist in leadership and contingency theory research. No consistent relationships have been established between the LBDQ subscales and either subordinate satisfaction or performance, and correlational studies do not allow determination of direction or causality. Despite these two flaws, evidence appears to indicate that relationships among the variables of leader behavior, the work environment and organizational effectiveness are interactive. For example, Consideration appears to be influenced by subordinate performance (Yukl, 1981), and relationships between leader Consideration and subordinate satisfaction and performance are less positive when the task is intrinsically rewarding (Kerr et al., 1974).

No one taxonomy is accepted widely enough to provide a clear distinction between leader behavior and the work environment. For example, some of Yukl's (1981) 19 managerial roles appear to duplicate Moos and Insel's (1981) WES subscales: Yukl's Interaction Facilitation and Insel and Moos' Peer Cohesion; Yukl's Autonomy-Delegation and Insel and Moos' Autonomy. These factors can either be classified as leader characteristics or work environment
phenomena. Despite the overlap, there are no obvious, direct parallels between leader behavior and organizational climate typologies; the constructs are discrete variables. Similarly, the mediating variables in one model are measures of output in another model. Yukl, for example, labels subordinate effort as an intervening variable while House (1971) labels subordinate satisfaction an End-Result variable. James and Jones (1974) recommend a "systematic and thoughtful investigation of organizational climate...to ascertain the specific variables, dimensions and constructs to be included and the ways such dimensions supercede or differ from other variables, dimensions and constructs" (p. 1108). They recommend an investigation of the relationships of measures of organizational climate, individual behavior and attitudes, and organizational performance. Similarly, Yukl (1981) recommends the use of interactive models and multiple measures to investigate the effects of one variable upon another. Ellett and Walberg (in Walberg, 1982) say that the causal relationship among academic administrators' behavior, the educational environment and educational outcomes must be better understood before research findings can be applied in educational organizations.
CHAPTER III
METHODS

This study proceeds from a survey research methodology, a methodology used to study large and small populations "by selecting and studying samples chosen from the population to discover the relative incidence, distribution and interrelations of sociological and psychological variables" (Kerlinger, 1973, p. 410).

The variables of interest in this study are community college work environments, the academic administrators' behavior and the educational effectiveness of the academic unit, as perceived by faculty members. The setting for the study is the community college; the population is the full-time, college parallel faculty member in the community college setting. The data were collected using a mailed questionnaire, comprised of three instruments, and the responses were analyzed to test three hypotheses which state that relationships exist among the variables.

H1: Work environment is related to leader behavior.

H2: Educational effectiveness is related to the work environment.

H3: Leader behavior is related to educational effectiveness.
SURVEY RESEARCH

The questionnaire was selected as the method of data collection because it is an efficient tool for obtaining information in ex post facto research. In addition, the specific items on an instrument "objectify, intensify and standardize" the observations of respondents (Van Dalen, 1979, p. 152).

The questionnaire (Appendix C), which was mailed to a sample of full-time, college parallel community college faculty members in a midwestern state (N=275), includes the three instruments which operationalize the variables: The Work Environment Scale or WES (Moos and Insel, 1981), The Leader Behavior Description Questionnaire or LBDQ (Halpin, 1957) and the Educational Effectiveness Opinionnaire or EEO, developed for this study. Each instrument is designed to measure the perceptions of respondents and to place them on a continuum (Kerlinger, 1973). Participants report their perceptions as responses to each item. Responses on each subscale and dimension of each instrument are then summed to provide a measure of the perception.

The three instruments used in this study are designed to generate independent responses: the respondent's choice on each item is unrelated to the responses made to the other items. Items on independent scales theoretically come from a universe of equal attitude value items which,
as an aggregate, accurately measure an individual's perception of an object, event, behavior or construct. Specific items represent the universe of items. The LBDQ and the EEO are summated rating scales, a scaling method which provides a measure of the intensity of the response to each item. The instruments use a Likert-type and Likert scale, respectively. Responses are summed to produce a score. The WES, also comprised of items of equal attitude value, uses a true-false scale, and the respondent must choose from the two alternatives. Responses for several items are combined to measure the respondent's perception. Respondents' scores on the three scales (the WES, LBDQ and EEO) are considered to be valid indications of the respondent's perception of the work environment, the leader's behavior and the educational effectiveness of the department.

THEORETICAL FRAMEWORK

Kerlinger (1973) states that the most important contribution of survey research is discovering interrelationships among the variables of interest. While prior research indicates that the variables of interest in this study are likely to be interrelated, the nature, direction and strength of the relationships are unclear, especially in educational settings. Researchers working from both sociological and psychological perspectives have determined that the attitudes and behaviors of
organizational participants are influenced by the environment and leader behavior. The human relations school of organizations, which grew out of the Hawthorne studies reported by Roethlisberger, Dickson and Mayo, emphasizes the fact that worker behavior and motivation are in part the result of informal group processes within the human environment. From the human relations perspective, leadership is often perceived of as a mechanism for influencing the behavior of organizational participants to improve productivity. Productivity in part appears to be a function of the work environment and leader behavior.

Halpin's leadership research using the LBDQ also indicates a relationship between leader behavior and productivity. Halpin found that the most effective leaders were high on both Consideration and Initiating Structure, the person-orientation and task-orientation components comprising his two-factor theory of leadership. However, these two factors do not appear to explain effective leadership across all situations. As a result, researchers developed contingency theories and models to explain inconsistencies in leadership research (Fiedler, 1967; Yukl, 1981; Ellett and Walberg, 1982). Yukl and Ellett and Walberg also suggest an interactive relationship where productivity influences leader behavior. For example, Ellett and Walberg state that productivity, defined as
student outcomes, influences the principal's behavior. Although productivity appears to influence leader behavior, leader behavior is also influenced by intervening variables or situational factors in the environment (Yukl, 1981). Leader behavior appears in part to be a function of the work environment and productivity.

Moos (1976) isolates social climate as the important intervening variable in all settings. The social climate of the work setting or the work environment is the mediating variable between organizational characteristics such as the size of the organization and the degree of automation and such worker characteristics as satisfaction, motivation, participation, absenteeism and turnover. Moos, from the social climate perspective, states that environments, like people, have unique personalities which can be described with accuracy and detail. Some environments are rigid, autocratic and controlling; others are more supportive. Moos believes that the best social climates are characterized by good relationships among participants, opportunities for personal growth and organizational structures that allow for both consistency and change. In defining the work environment, Moos discusses such components as supervisor support and job characteristics including autonomy and work pressure. Moos' typology indicates that the work environment is in part a function of leader behavior and
job characteristics.

Stern (1970), who studied the college learning environment, also stresses the importance of environment. He suggests that colleges have distinctive and different atmospheres and that congruence between the individual and the environment must be understood to promote effective education. Because effective education is the most important measure of productivity for educational organizations, educational effectiveness appears to be related to work environment and leader behavior.

This study applies leadership research, contingency theories, environmental research and findings from diverse settings to the community college setting in an attempt to describe the work environment of the community college and to determine the work environment's relationship to leader behavior and educational effectiveness.

SAMPLE SELECTION

Survey research allows the investigator to study identified populations by selecting and studying representative samples chosen from the population. Kerlinger defines a representative sample as one which "approximates the characteristics of the population relevant to the research..." (1973, p. 119). A cluster sampling was done for this study where units or subsets, in this case faculty members at four of the eight community colleges in the state, were included in the
study. The sample is not random; however, a random sample would have resulted in an overrepresentation of one geographical and urban area where three of the eight institutions are located. One of those three institutions, a multi-campus institution, was included in the study; the other two were not. Another institution, which has only six full-time faculty members, was omitted because of its size. At another institution, the study was not approved.

College parallel faculty members at the four institutions included in the study appear to be representative of college parallel faculty members in the state, and the four institutions appear to be representative of the eight institutions. College parallel faculty members are defined as those who teach English, social sciences, natural sciences, mathematics, or humanities. The state's higher education coordinating board identifies eight institutions in the state as community colleges, a separate category from that of other two-year institutions. All eight institutions have an organizational structure which divides faculty members by academic area, and the institutions' mission statements indicate similar goals or philosophies. The smallest institution in the study has two academic units or departments. One of the larger institutions has seven departments. Nine departments at two campuses of the multi-campus institution were included in the study. Of
the four community colleges included in the study, two institutions draw students from urban/suburban areas; one institution is located in a small town; the fourth institution is in a rural area. Of the four institutions not included, one is in a small town; two are in or near an urban area; the fourth institution is in a rural area. All geographical areas of the state are represented.

In August, 1983, a letter was sent to the president of each of the four institutions, explaining the study and formally requesting institutional approval. Approval was granted, and the names of the faculty members and academic administrators were obtained. (See Appendix A for the letter to the presidents of the institutions.) The first-line academic administrators also received a letter from the investigator explaining the study, although an administrator had in most cases discussed the study with them before institutional approval was granted. (See Appendix B for the letter.)

RESPONSE RATE

The first mailing, a cover letter and the questionnaire, was sent to faculty members on November 4, 1983, approximately five weeks into the ten-week quarter term at the institutions. (See Appendix C for the cover letter and questionnaire.) A follow-up postcard was sent two weeks later. The first mailing and postcard resulted in a 52.5% overall response rate, varying from 36% at one
institution to 77% at another institution.

The second mailing, a cover letter (Appendix D) and a second copy of the questionnaire, was sent to nonrespondents on January 2, 1984. By January 31, 1984, the second mailing had produced a 68.7% overall response rate, varying from 58.8% at one institution to 81.1% at another institution; 188 of the 275 faculty members responded. Fifteen questionnaires were eliminated because of incomplete responses and missing data. The remaining 173 questionnaires (62.5%) were distributed evenly across the institutions.

INSTRUMENTATION

The questionnaire used for this study is comprised of three instruments and a six-item personal characteristics section. Each of the four components is described below in the order each appears on the questionnaire.

The Work Environment Scale - Real (WES)

The WES is a 90-item True-False instrument designed to assess the participant's perceptions of the social climate of the work setting. It is one of nine social climate scales developed by Moos and his associates at the Social Ecology Laboratory at Stanford University; co-developers of the WES are Rudolf H. Moos and Paul M. Insel.

The theoretical basis for Moos' study of social climates is the Needs-Press theory of Henry Murray (1938
in Moos, 1976). Murray theorized that individuals have needs, and environments offer benefits and harms, which he labels environmental press—beneficial press and harmful press.

The social climate scales are designed to assess the individual's perceptions of environmental press. Moos (1979) says that people are not passively molded by the environment, and environments are not passively molded by people. Instead, there is an interaction. He states that social climate instruments are potentially one of the most useful ways of characterizing environments, because the instruments provide a description of individual perceptions of both the human aggregate and the organizational unit. Most investigations using the WES have been done to define the characteristics of a work environment and to design interventions to alter the environment.

The WES-R, the form used for this study, has ten subscales which comprise three dimensions. The Relationship dimension measures the nature and intensity of relationships, or the extent to which individuals help and support each other. The Personal Growth dimension identifies the extent to which environments allow and foster self-enhancement and personal growth. The System Maintenance and System Change dimension, relatively stable across environments, evaluates clarity of expectations,
orderliness, control and responsiveness to change. The three dimensions and the ten subscales (nine items for each subscale) are listed in Figure 3.

The WES-R was developed from an initial pool of 200 items on Form A, generated from information obtained from structured interviews with employees in diverse work settings. The wording and choice of the 138-item Form B was guided by each item's relationship to the three social-environmental dimensions of Relationship, Personal Growth and System Maintenance and System Change.

Developers applied five psychometric criteria to Form B to select items for the final form, WES-R. They are as follows: (1) "The overall item split should be as close to 50-50 as possible to avoid items characteristic of unusual work settings; (2) Items should correlate more highly with their own subscale than with any other; (3) Each subscale should have an approximately equal number of items scored true and scored false to control for acquiescence response set; (4) The subscales should have low to moderate intercorrelations, and (5) Each item and each subscale should discriminate among work settings." (Moos and Insel, 1981, p. 3). In general, Form R met these criteria.

The internal reliabilities (Cronbach's Alpha) reported for each of the ten WES subscales range from 0.69 to 0.86 (Moos and Insel, 1981), indicating that each subscale's nine items are measuring a separate component
RELATIONSHIP DIMENSION

1. Involvement  
the extent to which employees are concerned about and committed to their jobs

2. Peer Cohesion  
the extent to which employees are friendly and supportive of one another

3. Supervisor Support  
the extent to which management is supportive of employees and encourages employees to be supportive of one another

PERSONAL GROWTH DIMENSION

4. Autonomy  
the extent to which employees are encouraged to be self-sufficient and to make their own decisions

5. Task Orientation  
the degree of emphasis on good planning, efficiency and getting the job done

6. Work Pressure  
the degree to which the press of work and time urgency dominate the job milieu

SYSTEM MAINTENANCE AND SYSTEM CHANGE DIMENSION

7. Clarity  
the extent to which employees know what to expect in their daily routine and how explicitly rules and policies are communicated

WES Subscale Definitions by Dimension
(Continued)

8. Control  
the extent to which management uses rules and pressures to keep employees under control

9. Innovation  
the degree of emphasis on variety, change and new approaches

10. Physical Comfort  
the extent to which the physical surroundings contribute to a pleasant work environment

Figure 3  
WES SUBSCALE DEFINITIONS BY DIMENSIONS
of the environment. The intercorrelations between the subscales are low enough to indicate that the subscales are measuring related but distinct and reasonably independent aspects of the work environment. An average of less than ten percent of the subscale variance is accounted for by intercorrelations. Test-retest reliabilities over twelve months ranged from 0.51 for Supervisor Support to 0.62 for Involvement.

Individual subscale scores on the WES can be converted to standard scores, and a work environment profile for each work unit can be constructed to indicate whether a work environment is above or below the mean on each subscale. (See Table 1.)

Faculty members completing the WES selected from two responses: True and False. Each faculty member received a score on each of the ten subscales, obtained by adding the responses for each of the subscale items (T = 1; F = 0). To provide a value where a response was omitted, a score of .5 was inserted for the missing value. The dimension scores for faculty members in the same department were averaged to obtain department mean scores. (See Appendix H.) In Figure 4, sample items and item numbers are presented.

**Leader Behavior Description Questionnaire – Real (LBDQ)**

The LBDQ was developed as part of the Ohio State University Leadership Studies, a program of leadership
TABLE 1

MEANS AND STANDARD DEVIATIONS OF THE WES SUBSCALES
FOR A NORMATIVE SAMPLE OF GENERAL WORK GROUPS
(N = 1442)

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Number of Items</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involvement</td>
<td>9</td>
<td>5.95</td>
<td>1.41</td>
</tr>
<tr>
<td>Peer Cohesion</td>
<td>9</td>
<td>5.70</td>
<td>1.15</td>
</tr>
<tr>
<td>Supervisor Support</td>
<td>9</td>
<td>5.68</td>
<td>1.38</td>
</tr>
<tr>
<td>Autonomy</td>
<td>9</td>
<td>5.54</td>
<td>1.22</td>
</tr>
<tr>
<td>Task Orientation</td>
<td>9</td>
<td>5.90</td>
<td>1.29</td>
</tr>
<tr>
<td>Work Pressure</td>
<td>9</td>
<td>4.40</td>
<td>1.38</td>
</tr>
<tr>
<td>Clarity</td>
<td>9</td>
<td>5.60</td>
<td>1.29</td>
</tr>
<tr>
<td>Control</td>
<td>9</td>
<td>4.88</td>
<td>1.33</td>
</tr>
<tr>
<td>Innovation</td>
<td>9</td>
<td>4.42</td>
<td>1.54</td>
</tr>
<tr>
<td>Physical Comfort</td>
<td>9</td>
<td>4.89</td>
<td>1.35</td>
</tr>
<tr>
<td>Climate Subscales</td>
<td>Sample Item</td>
<td>Item Number</td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>Involvement</td>
<td>&quot;Faculty members seem to take pride in the organization.&quot;</td>
<td>1, 11*, 21*, 31, 41, 51*, 61, 71*, 81</td>
<td></td>
</tr>
<tr>
<td>Peer Cohesion</td>
<td>&quot;People go out of their way to help a new faculty member feel comfortable.&quot;</td>
<td>2, 12*, 22, 32*, 42, 52, 62*, 72, 82*</td>
<td></td>
</tr>
<tr>
<td>Supervisor Support</td>
<td>&quot;Department heads really stand up for their faculty members.&quot;</td>
<td>3*, 13, 23*, 33, 43*, 53, 63*, 73, 83</td>
<td></td>
</tr>
<tr>
<td>Autonomy</td>
<td>&quot;Faculty members function fairly independently of department heads.&quot;</td>
<td>4*, 14, 24, 34, 44, 54*, 64, 74, 84</td>
<td></td>
</tr>
<tr>
<td>Task Orientation</td>
<td>&quot;Faculty members work very hard.&quot;</td>
<td>5, 15*, 25, 35, 45, 55, 65, 75*, 85*</td>
<td></td>
</tr>
<tr>
<td>Work Pressure</td>
<td>&quot;There always seems to be an urgency about everything.&quot;</td>
<td>6, 16, 26, 36*, 46*, 56, 66*, 76, 86</td>
<td></td>
</tr>
<tr>
<td>Clarity</td>
<td>&quot;Rules and policies are constantly changing.&quot;</td>
<td>7*, 17, 27, 37, 47, 57*, 67, 77, 87</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>&quot;Department heads are always checking on faculty members and supervise them very closely.&quot;</td>
<td>8, 18*, 28, 38, 48, 58, 68, 78, 88*</td>
<td></td>
</tr>
<tr>
<td>Innovation</td>
<td>&quot;There is a fresh, novel atmosphere about this place.&quot;</td>
<td>9, 19, 29, 39*, 49*, 59*, 69*, 79, 89</td>
<td></td>
</tr>
<tr>
<td>Physical Comfort</td>
<td>&quot;The rooms are well-ventilated.&quot;</td>
<td>10*, 20, 30*, 40, 50*, 60, 70*, 80</td>
<td></td>
</tr>
</tbody>
</table>

* indicates reversed polarity items

Figure 4
research begun in the late 1940s. Beginning with a bank of 1800 items, researchers Halpin, Stogdill and their associates constructed an instrument consisting of 40 items. Dipboye (in Buros, 1978) said that the meticulous fashion used in developing the LBDQ "provides a stellar example of how a leadership scale or any instrument should be developed" (p. 1174).

Factor analytic studies of item intercorrelations, done by Halpin and Winer during the 1950's, produced two factors which accounted for 83.0% of the variance in scores (Bass, 1981). The factors were labeled Consideration and Initiating Structure.

Halpin (1957) defines Consideration (C) as those leader behaviors instrumental in developing and maintaining good relationships with subordinates. The behaviors indicate "friendship, mutual trust, respect and warmth between the leader and members of the group." Initiating structure (IS) represents "the leader's behavior in deliniating the relationship between himself and the members of his group, and in endeavoring to establish well-defined patterns of organization, channels of communication, and ways of getting the job done" (p. 1).

The OSU leadership studies had two objectives: to develop an objective measure of leader behavior and to determine the relationship between leader behavior and
other factors such as subordinate performance or satisfaction. Respondents are asked to describe, not to evaluate, leader behavior.

Descriptions of Consideration and Initiating Structure have been found to be highly stable and consistent across situations, indicating the instrument is reliable. Internal reliability coefficients range from about 0.70 to more than 0.80. Items on the Consideration scale correlate highly with other Consideration items, but they are not highly correlated with items on the Initiating Structure scale; items on the Initiating Structure scale are correlated with other IS items, but they are not highly correlated with C items (Bass, 1981), indicating the subscales are measuring related but separate factors.

The LBDQ consists of 40 items; however, only 30 items are scored, 15 for each of the two dimensions. Ten items, which remain in the instrument for standardization, are not scored. Following each item, the faculty members chose from five responses using a Likert-type scale (Always = A, Often = B, Occasionally = C, Seldom = D and Never = E) to indicate the frequency of each type of behavior. For this study, a number was assigned to the letter response (A = 5, B = 4, C = 3, D = 2, E = 1), and the responses were summed for each dimension. The possible range of scores is 15 to 75. To provide a value where a response was omitted,
the respondent's mean score on the subscale's remaining items was inserted. The subscale scores for faculty members in the same department were averaged to obtain department subscale scores (Appendix I).

Mean scores for 64 educational administrators reported in the Manual (Halpin, 1957) are 37.9 for Initiating Structure and 44.7 for Consideration. The standard deviations are 4.4 and 6.0 respectively. The mean scores and standard deviations cannot be construed as norms, in the strictest sense of the word, according to the Manual, but they provide some basis for interpreting the LBDQ scores. In Figure 5, sample items and item numbers for each subscale are presented.

The Educational Effectiveness Opinionnaire (EEO)

The purpose of this study is to determine the relationships among the work environment, leader behavior and educational effectiveness. The Educational Effectiveness Opinionnaire (EEO) is a 15-item instrument designed for this study to operationalize the third variable.

Educational Effectiveness is simply defined as how well faculty members believe students learn what teachers teach and how responsive they believe faculty members are to students' educational needs. The EEO was conceptually designed as two subscales: Student Achievement and Faculty Commitment. Educational effectiveness is operationally
<table>
<thead>
<tr>
<th>Subscale</th>
<th>Sample Item</th>
<th>Item Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiating Structure</td>
<td>&quot;Assigns group members to particular tasks.&quot;</td>
<td>2, 4, 7, 9, 11, 14, 16, 17, 22, 24, 27, 29, 32, 35, 39</td>
</tr>
<tr>
<td>Consideration</td>
<td>&quot;Does little things to make it pleasant to be a member of the group.&quot;</td>
<td>1, 3, 6, 8, 12*, 13, 18*, 20*, 21, 23, 26, 28, 31, 34, 38</td>
</tr>
</tbody>
</table>

**EXAMPLES OF LBDQ ITEMS**

* indicates reversed polarity items.

Figure 5
defined as each respondent's score on the EEO.

Before a program's effectiveness can be evaluated, institutional goals and program objectives must be established. The program's effectiveness is then defined as the extent to which the program achieves its objectives. Broadly stated goals such as "the betterment of each individual" cannot serve as the basis for program evaluation, although the specific program objectives are often based on the more broadly stated goals or mission statements of an institution or program. Often, these program objectives are responses to perceived concerns or problems.

The conceptual basis for the EEO is related to the mission statements of the community colleges and reflects issues or concerns common in the community college literature. One mission of the community college is to provide students with the first two years of baccalaureate education, although there is some decline in the transfer function (McCartan, 1983). Concerns common in the community college literature are how to satisfy the educational needs of a diverse student population and how to prepare transfer students to compete academically after they transfer to a four-year institution. According to McCartan, increasing expectations for students, providing lifelong learning and responding to the needs of nontraditional students remain as goals for the community
colleges. The items on the original form of the EEO were written to assess faculty responsiveness to student needs and the students' levels of achievement. These two subscales reflect the mission statements of the institutions and their concern with meeting the needs of a diverse student population.

The items on the EEO appeared to have content validity: they appeared to represent the universe of the concept of educational effectiveness defined above. After the items were written, two individuals with expertise in instrument development and work experience in diverse educational settings were consulted regarding specific items and procedures for instrument development.

A pre-test survey was then conducted to revise and refine the EEO and to strengthen content validity. The pre-test panel included faculty members from a two-year institution similar to the community colleges in the study, university professors, individuals from the state's higher education coordinating board and colleagues familiar with the study and instrument development. In all, 15 individuals reviewed the EEO during the pre-test phase. Respondents were asked to (1) rate each item's clarity and relevance and to suggest revisions; (2) rate the completeness of the instrument; (3) respond to five YES-NO items concerning instrument development, and (4) add any additional comments and suggestions. (See
Appendix E, the Pre-Test Survey.) The panel’s responses on
the Pre-test Survey guided the revision of the EEO which
was then included with the WES, the LBDQ and respondent
characteristics as the Community College Survey used in
this study.

Community college faculty members responded to the
revised EEO using a Likert scale, or a summated rating
scale. The responses are Strongly Agree = A, Agree = B,
Undecided = C, Disagree = D and Strongly Disagree = E.
Numbers were assigned to the responses (A = 5, B = 4, C =
3, D = 2, E = 1); the EEO score is the sum of responses to
the items of each subscale.

The problem of missing values, instances when a
respondent did not select a response, was a difficult one
because the EEO did not have established subscales. The
problem was solved by substituting the department mean
score for an item for the missing value. Justification for
this approach is that educational effectiveness is a
departmental characteristic, and the summed and averaged
departmental response was believed to be the most accurate
reflection of the department’s educational effectiveness.
The factor analysis to determine the factor structure for
the instrument was done after the missing values had been
inserted. In Figure 6, sample items for each subscale and
item numbers are presented.

Factor Analysis of the EEO
<table>
<thead>
<tr>
<th>Subscale</th>
<th>Sample Item</th>
<th>Item Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Achievement</td>
<td>&quot;Most students who take courses in this department are academically prepared to do college-level work.&quot;</td>
<td>1, 3, 5*, 7*, 9, 11, 13, 17</td>
</tr>
<tr>
<td>Faculty Commitment</td>
<td>&quot;This department encourages faculty members to demonstrate concern about the achievement of their students.&quot;</td>
<td>2, 4, 6, 8, 10, 12, 15</td>
</tr>
</tbody>
</table>

**EXAMPLES OF EEO ITEMS**

* indicates reversed polarity items.

Figure 6
Factor analysis is a method, according to Kerlinger (1964), for determining the number and nature of variables which underlie larger numbers of measures. It is a data reduction technique to reduce data to a smaller number of factors or constructs that can be taken as source variables accounting for observed interrelations in the data (Nie et al., 1975). For this study, a principal components factor analysis technique was applied to the EEO responses to determine whether or not the two theoretical subscales of Student Achievement and Faculty Commitment actually emerged from the data analysis. An orthogonal, varimax rotation was used. The anticipated two-factors system did appear, and the factors could be named Student Achievement (SA) and Faculty Commitment (FC). The factor loadings by item are presented in Figure 7.

Item 14 (Students will think most courses in this department include useful information.) was deleted from the EEO because the difference in factor loadings was not great (did not exceed 0.10), and the item loaded on a factor other than that which it was designed to measure. Item 16 (Our students who transfer to four-year institutions are likely to have academic problems after they transfer.) was deleted because it did not appear related to either factor (below 0.50). The final instrument for analysis was comprised of fifteen items,
<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1 Loading</th>
<th>Factor 2 Loading</th>
<th>Subscale After Factor Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theoretical Subscale: Student Achievement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>.60</td>
<td>.10</td>
<td>SA</td>
</tr>
<tr>
<td>3</td>
<td>.74</td>
<td>.02</td>
<td>SA</td>
</tr>
<tr>
<td>5</td>
<td>.67</td>
<td>.07</td>
<td>SA</td>
</tr>
<tr>
<td>7</td>
<td>.75</td>
<td>.17</td>
<td>SA</td>
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<td>9</td>
<td>.81</td>
<td>.01</td>
<td>SA</td>
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<tr>
<td>11</td>
<td>.74</td>
<td>.23</td>
<td>SA</td>
</tr>
<tr>
<td>13</td>
<td>.55</td>
<td>.44</td>
<td>SA</td>
</tr>
<tr>
<td>17</td>
<td>.67</td>
<td>.15</td>
<td>SA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theoretical Subscale: Faculty Commitment</td>
<td>.2</td>
<td>.34</td>
<td>FC</td>
</tr>
<tr>
<td>4</td>
<td>.14</td>
<td>.65</td>
<td>FC</td>
</tr>
<tr>
<td>6</td>
<td>.09</td>
<td>.67</td>
<td>FC</td>
</tr>
<tr>
<td>8</td>
<td>.02</td>
<td>.76</td>
<td>FC</td>
</tr>
<tr>
<td>10</td>
<td>.40</td>
<td>.60</td>
<td>FC</td>
</tr>
<tr>
<td>12</td>
<td>.18</td>
<td>.74</td>
<td>FC</td>
</tr>
<tr>
<td>15</td>
<td>.07</td>
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<td>FC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Items Deleted</td>
<td>14</td>
<td>.41</td>
<td>deleted</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>.37</td>
<td>deleted</td>
</tr>
</tbody>
</table>

Figure 7

FACTOR MATRIX BY ITEM
eight measuring Student Achievement and seven measuring Faculty Commitment.

RESPONDENT CHARACTERISTICS

House (1977) states that subordinate characteristics are important variables to consider in attempting to understand the relationship between leader behavior and outcomes. Pfeffer and Moore (1980) found faculty rank and length of service to be predictor variables in their study of the length of tenure of the department head. Miskel et al. (1983) found level of experience, levels of education and sex of the faculty member to be correlated with job satisfaction and perceived educational effectiveness. These factors could directly or indirectly affect the criterion variables. In this study, six respondent characteristic items were included on the survey to provide a description of respondent characteristics. These characteristics are highest academic degree, types of prior work experience, years of experience in teaching, years working under the current department head, age and sex.

STATISTICAL ANALYSES

Descriptive statistics for all variables, correlational matrices to test the hypotheses and multiple regression equations were computed and are reported in Chapter IV.
CHAPTER IV
DATA ANALYSIS

The purpose of this study is to determine the relationships among the work environment, leader behavior and educational effectiveness in the community college setting, as perceived by faculty members. These three variables were measured via a questionnaire, completed by 173 community college faculty members in a midwestern state. The three instruments which comprise the questionnaire are the Work Environment Scale (WES), the Leader Behavior Description Questionnaire (LBDQ), and the Educational Effectiveness Opinionnaire (EEO).

In this chapter, the results of the data analysis are presented in four sections: central tendencies; a hypothesis section with subsections corresponding to each of the three major hypotheses undergirding this study; a summary of faculty characteristics, and a summary of the results of the multiple regression analysis.

CENTRAL TENDENCIES

The mean scores, standard deviations, observed range, possible range of scores and midpoints are reported for the ten climate subscales on the WES and the three climate dimensions comprised of WES subscales, the two LBDQ
subscales and the two EEO subscales. (See Tables 2 through 5.)

Faculty respondents' perceptions of the work environment are represented by subscale mean scores on the WES. Mean scores for faculty members in the study are higher than Insel and Moos' norm group means reported in the manual for six of the subscales and lower than the norm group means for four of the subscales. Faculty members perceive their work environment as high, compared to the norm group rating, in Involvement, Supervisor Support, Autonomy, Task Orientation, Work Pressure and Physical Comfort. They rate their work environment low, relative to the norm group, in Peer Cohesion, Clarity, Control, and Innovation. Control and Innovation mean scores are both lower than the midpoint of possible scores (4.5). (See Table 2.)

Standard deviations for WES subscales in this study exceed those reported for the norm group on every scale, indicating a greater dispersion of responses among participants in this study.

The mean scores for the WES dimensions of Relationship and Personal Growth for respondents in this study exceed the means of the norm group on the same dimensions. The mean score for the System Maintenance and System Change dimension is below the norm group mean. (See Table 3.)
<table>
<thead>
<tr>
<th></th>
<th>Midpoint</th>
<th>Possible Range</th>
<th>Observed Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Central Tendencies for the WES Subscales</strong> (N = 173)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>6.1474</td>
<td>2.6148</td>
<td>0-9</td>
</tr>
<tr>
<td><strong>S.D.</strong></td>
<td>5.5780</td>
<td>2.3124</td>
<td>0-9</td>
</tr>
<tr>
<td><strong>Involvement</strong></td>
<td>6.2139</td>
<td>2.3546</td>
<td>0-9</td>
</tr>
<tr>
<td><strong>Peer Cohesion</strong></td>
<td>6.4480</td>
<td>1.9715</td>
<td>1-9</td>
</tr>
<tr>
<td><strong>Supervisor Support</strong></td>
<td>6.5578</td>
<td>2.0565</td>
<td>0-9</td>
</tr>
<tr>
<td><strong>Task Orientation</strong></td>
<td>5.1617</td>
<td>2.2863</td>
<td>0-9</td>
</tr>
<tr>
<td><strong>Autonomy</strong></td>
<td>5.2311</td>
<td>2.5821</td>
<td>0-9</td>
</tr>
<tr>
<td><strong>Work Pressure</strong></td>
<td>3.9306</td>
<td>1.7482</td>
<td>0-9</td>
</tr>
<tr>
<td><strong>Clarity</strong></td>
<td>4.1647</td>
<td>2.6209</td>
<td>0-9</td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td>5.3671</td>
<td>2.7702</td>
<td>0-9</td>
</tr>
<tr>
<td><strong>Innovation</strong></td>
<td>2.6148</td>
<td>2.3124</td>
<td>0-9</td>
</tr>
<tr>
<td><strong>Physical Comfort</strong></td>
<td>6.1474</td>
<td>2.6148</td>
<td>0-9</td>
</tr>
<tr>
<td>WES Dimensions</td>
<td>Mean</td>
<td>S.D.</td>
<td>Observed Range</td>
</tr>
<tr>
<td>----------------</td>
<td>--------</td>
<td>--------</td>
<td>----------------</td>
</tr>
<tr>
<td>Relationship</td>
<td>17.9393</td>
<td>6.2627</td>
<td>0-27</td>
</tr>
<tr>
<td>Personal Growth</td>
<td>18.1705</td>
<td>3.8641</td>
<td>6-26</td>
</tr>
<tr>
<td>System Maintenance and System Change</td>
<td>18.6965</td>
<td>6.3869</td>
<td>4-31</td>
</tr>
</tbody>
</table>
### TABLE 4

**CENTRAL TENDENCIES FOR THE LBDQ SUBSCALES**  
(N = 173)

<table>
<thead>
<tr>
<th>Leader Behavior</th>
<th>Mean</th>
<th>S.D.</th>
<th>Observed Range</th>
<th>Possible Range</th>
<th>Midpoint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consideration</td>
<td>57.0924</td>
<td>11.9174</td>
<td>20-75</td>
<td>15-75</td>
<td>45</td>
</tr>
<tr>
<td>Initiating Structure</td>
<td>53.9173</td>
<td>7.8218</td>
<td>23-70</td>
<td>15-75</td>
<td>45</td>
</tr>
<tr>
<td>Subscale</td>
<td>Observed Range</td>
<td>Mean</td>
<td>S.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------</td>
<td>-----------</td>
<td>-----------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Achievement</td>
<td>8-38</td>
<td>24.7977</td>
<td>5.5562</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty Commitment</td>
<td>12-35</td>
<td>28.6994</td>
<td>4.0075</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 5**

Central Tendencies for the EEO Subscales (N = 173)
The WES subscales can be organized in descending order, according to mean scores. This order suggests that faculty members perceive community college environments to be high in Task Orientation, Autonomy, Supervisor Support and Involvement; all mean scores are above 6.1. The lower six subscales, listed in descending order by mean score, are Peer Cohesion (5.6), Physical Comfort, Clarity, Work Pressure, Innovation and Control. Innovation and Control are characteristics least frequently perceived by faculty members.

The relatively high mean scores on the WES indicate a positive work environment, although not an innovative one. (See Table 6 for comparisons.)

The LBDQ mean scores for both subscales, Consideration (57.09) and Initiating Structure (53.02), are above the midpoint of 45 and higher than the mean scores reported by Halpin in the LBDQ manual for 65 educational administrators, although these mean scores are not norms in the strictest sense of the word. The relatively high mean scores, above the midpoint of the range of scores, indicate that faculty members perceive their department chairpersons to be exhibiting both Consideration and Initiating Structure. The Consideration mean score is higher than the Initiating Structure mean score. (See Table 4.)

The mean score on the EEO subscale of Student
<table>
<thead>
<tr>
<th>WES Subscales</th>
<th>Mean Scores for This Study's Respondents</th>
<th>Mean Scores Reported In The Manuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involvement</td>
<td>6.1474</td>
<td>5.95</td>
</tr>
<tr>
<td>Peer Cohesion</td>
<td>5.5780</td>
<td>5.70</td>
</tr>
<tr>
<td>Supervisor Support</td>
<td>6.2139</td>
<td>5.68</td>
</tr>
<tr>
<td>Autonomy</td>
<td>6.4480</td>
<td>5.54</td>
</tr>
<tr>
<td>Task Orientation</td>
<td>6.5578</td>
<td>5.90</td>
</tr>
<tr>
<td>Work Pressure</td>
<td>5.1647</td>
<td>4.40</td>
</tr>
<tr>
<td>Clarity</td>
<td>5.2341</td>
<td>5.60</td>
</tr>
<tr>
<td>Control</td>
<td>3.9306</td>
<td>4.88</td>
</tr>
<tr>
<td>Innovation</td>
<td>4.1647</td>
<td>4.42</td>
</tr>
<tr>
<td>Physical Comfort</td>
<td>5.3671</td>
<td>4.89</td>
</tr>
</tbody>
</table>

| LBDQ Subscales              |                                          |                                     |
|-----------------------------|                                          |                                     |
| Consideration               | 57.0924                                  | 44.7                                |
| Initiating Structure        | 53.0173                                  | 37.9                                |
Achievement (24.80) is slightly above the midpoint score of 24; the mean score for Faculty Commitment (28.70) is above the midpoint of 21, indicating faculty members perceive high levels of faculty commitment in their departments, a characteristic more prevalent than student achievement. (See Table 5.)

HYPOTHESES

The Work Environment and Leader Behavior

The first hypothesis proposed in this study is as follows: Leader behavior is positively related to the work environment. In Table 7, the correlations between leader behavior (LBDQ subscales) and work environment characteristics (WES subscales and dimensions) are reported.

Of the 26 calculated r values which indicate the relationship between leader behavior and the work environment, 25 indicate significant relationships; 21 are significant at the p<.001 level of significance.

The LBDQ Consideration subscale is significantly correlated with all thirteen WES subscales and dimensions; eleven of the relationships are positive and two of them are negative. The two negative relationships are between Consideration and the Work Pressure subscale (r=-0.22) and Consideration and the Control subscale (r=-0.20), significant at the p<.01 level.

The three strongest relationships are between
### TABLE 7

**CORRELATIONS BETWEEN FACULTY PERCEPTIONS OF THE WORK ENVIRONMENT AND LEADER BEHAVIOR**

* (N = 173)*

<table>
<thead>
<tr>
<th>WORK ENVIRONMENT SCALE (WES)</th>
<th>LEADER BEHAVIOR (LEDQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Consideration</td>
</tr>
<tr>
<td>Involvement</td>
<td>0.5047 ***</td>
</tr>
<tr>
<td>Peer Cohesion</td>
<td>0.6432 ***</td>
</tr>
<tr>
<td>Supervisor Support</td>
<td>0.7536 ***</td>
</tr>
<tr>
<td>Autonomy</td>
<td>0.5508 ***</td>
</tr>
<tr>
<td>Task Orientation</td>
<td>0.4386 ***</td>
</tr>
<tr>
<td>Work Pressure</td>
<td>-0.2224 **</td>
</tr>
<tr>
<td>Clarity</td>
<td>0.4448 ***</td>
</tr>
<tr>
<td>Control</td>
<td>-0.1989 **</td>
</tr>
<tr>
<td>Innovation</td>
<td>0.4364 ***</td>
</tr>
<tr>
<td>Physical Comfort</td>
<td>0.2114 **</td>
</tr>
<tr>
<td>Relationship</td>
<td>0.7315 ***</td>
</tr>
<tr>
<td>Personal Growth</td>
<td>0.3829 ***</td>
</tr>
<tr>
<td>System Maintenance and System Change</td>
<td>0.3975 ***</td>
</tr>
</tbody>
</table>

* p ≤ .05  
** p ≤ .01  
*** p ≤ .001
Consideration and the Supervisor Support subscale (r=0.75), Consideration and the Relationship dimension (r=0.73), and Consideration and Peer Cohesion (r=0.64). The next seven WES subscales and dimensions are listed in descending order, according to the strength of their relationships with Consideration. All are significant relationships. They are Autonomy, Involvement, Clarity, Task Orientation, Innovation, and the dimensions of System Maintenance and System Change and Personal Growth. The lowest correlations, although still significant at the p< .01 level, are between Consideration and Physical Comfort (r=0.21) and the two subscales of Work Pressure and Control, reported above as negative correlations.

The LBDQ Initiating Structure subscale is significantly related to twelve of the thirteen WES subscales and dimensions; eleven relationships are at the p<.001 level of significance. The three strongest relationships are between Initiating Structure (IS) and the System Maintenance and System Change dimension (r=0.54); IS and the Clarity subscale (r=0.51); and IS and the Task Orientation subscale (r=0.45).

The next nine WES subscales and dimensions, listed in descending order, according to the strength of their relationships with Initiating Structure, are Involvement, Innovation, the Relationship dimension, the Personal Growth dimension, Physical Comfort, Autonomy, Control,
Supervisor Support, and Peer Cohesion. The single nonsignificant relationship, a negative one, is the relationship between Initiating Structure and the Work Pressure subscale (r=-0.11). The first hypothesis is accepted: leader behavior in this study is related to the work environment.

Educational Effectiveness and the Work Environment

The second hypothesis in this study is as follows: The work environment is positively related to educational effectiveness. In Table 8, the correlations between the work environment characteristics (WES subscales and dimensions) and educational effectiveness (EEO subscales) are reported.

Twenty-two of the 26 calculated r values are significant; 25 relationships are positive. The EEO Student Achievement subscale is significantly related to eleven of the thirteen WES subscales and dimensions. Relationships with three of the WES subscales and all three of the dimensions are significant at the p<.001 level of significance. The four strongest relationships are between Student Achievement and the Task Orientation subscale (r=0.37); the Involvement subscale (r=0.37); the System Maintenance and System Change dimension (r=0.32); and the Relationship dimension (r=0.31).

The next seven subscales and dimensions, listed in descending order, according to the strength of their
### TABLE 8

CORRELATIONS BETWEEN FACULTY PERCEPTIONS OF THE WORK ENVIRONMENT AND EDUCATIONAL EFFECTIVENESS  
(N = 173)

<table>
<thead>
<tr>
<th>WORK ENVIRONMENT SCALE (WES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIMENSIONS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Student Achievement</th>
<th>Faculty Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involvement</td>
<td>0.3660 ***</td>
<td>0.4487 ***</td>
</tr>
<tr>
<td>Peer Cohesion</td>
<td>0.2397 **</td>
<td>0.3398 ***</td>
</tr>
<tr>
<td>Supervisor Support</td>
<td>0.1922 *</td>
<td>0.2817 ***</td>
</tr>
<tr>
<td>Autonomy</td>
<td>0.2297 **</td>
<td>0.3534 ***</td>
</tr>
<tr>
<td>Task Orientation</td>
<td>0.3697 ***</td>
<td>0.5041 ***</td>
</tr>
<tr>
<td>Work Pressure</td>
<td>-0.0825</td>
<td>0.0698</td>
</tr>
<tr>
<td>Clarity</td>
<td>0.2809 ***</td>
<td>0.3336 ***</td>
</tr>
<tr>
<td>Control</td>
<td>0.0812</td>
<td>0.1319</td>
</tr>
<tr>
<td>Innovation</td>
<td>0.2680 ***</td>
<td>0.3989 ***</td>
</tr>
<tr>
<td>Physical Comfort</td>
<td>0.1616 *</td>
<td>0.1579 *</td>
</tr>
<tr>
<td>Relationship</td>
<td>0.3136 ***</td>
<td>0.4187 ***</td>
</tr>
<tr>
<td>Personal Growth</td>
<td>0.2651 ***</td>
<td>0.4899 ***</td>
</tr>
<tr>
<td>System Maintenance and System Change</td>
<td>0.3167 ***</td>
<td>0.4044 ***</td>
</tr>
</tbody>
</table>

* p < .05  
** p < .01  
*** p < .001
relationships with Student Achievement, are Clarity, Innovation, the Personal Growth dimension, Peer Cohesion, Autonomy, Supervisor Support and Physical Comfort. Student Achievement is negatively but not significantly related to the Work Pressure subscale \((r=-0.07)\). Student achievement is not significantly related to the Control subscale \((r=0.08)\).

Faculty Commitment, the second EEO subscale, is significantly related to eight of the ten WES subscales and all three of the dimensions. Ten of the eleven significant relationships are significant at the \(p<.001\) level. The six strongest relationships are between Faculty Commitment and the Task Orientation subscale \((r=0.50)\); the Personal Growth dimension \((r=0.49)\); the Involvement subscale \((r=0.45)\); the Relationship dimension \((r=0.42)\); the System Maintenance and System Change dimension \((r=0.40)\); and the Innovation subscale \((r=0.40)\).

The next five subscales, listed in descending order, according to the strength of their relationships with Faculty Commitment, are Autonomy, Peer Cohesion, Clarity, Supervisor Support and Physical Comfort. The Faculty Commitment subscale is not significantly related to either the Work Pressure subscale \((r=0.07)\) or the Control subscale \((r=0.13)\).

The second hypothesis is accepted: Educational effectiveness is related to the work environment.
Leader Behavior and Educational Effectiveness

The third hypothesis in this study is as follows: Educational effectiveness is positively related to leader behavior. In Table 9, the correlations between leader behavior (LBDQ subscales) and educational effectiveness (EEO subscales) are reported.

All of the correlations are significant, three at the $p<.001$ level of significance and one at the $p<.01$ level of significance. The strongest relationship ($r=0.49$) is between the LBDQ Consideration subscale and the EEO Faculty Commitment subscale. The LBDQ Initiating Structure subscale is similarly related to Faculty Commitment ($r=0.46$). Student Achievement is related to Initiating Structure ($r=0.31$) and to Consideration ($r=0.24$).

The third hypothesis is accepted: Educational effectiveness is positively related to leader behavior.

RESPONDENT CHARACTERISTICS

The personal characteristics of the faculty members who responded to the Community College Survey are presented in Table 10. The majority of faculty members (106 or 61.3%) indicates that a masters' degree is their highest degree. An additional 53 respondents (30.6%) have a doctoral degree, and ten respondents (5.8%) have a baccalaureate degree. Four respondents (2.3%) have degrees other than the baccalaureate, masters or doctoral degree as their highest degree (e.g., a law degree).
### TABLE 9

**CORRELATIONS BETWEEN FACULTY PERCEPTIONS OF LEADER BEHAVIOR AND EDUCATIONAL EFFECTIVENESS**

*(N = 173)*

<table>
<thead>
<tr>
<th>LEADER BEHAVIOR (LBDQ)</th>
<th>EDUCATIONAL EFFECTIVENESS (EEO)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Student Achievement</td>
</tr>
<tr>
<td>Consideration</td>
<td>0.2422 **</td>
</tr>
<tr>
<td>Initiating Structure</td>
<td>0.3117 ***</td>
</tr>
</tbody>
</table>

* *p < .05  
** *p < .01  
*** *p < .001
### TABLE 10

**FACULTY CHARACTERISTICS (N = 173)**

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Highest Degree</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctorate</td>
<td>53</td>
<td>30.6</td>
</tr>
<tr>
<td>Masters</td>
<td>106</td>
<td>61.3</td>
</tr>
<tr>
<td>Bachelors</td>
<td>10</td>
<td>5.8</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>2.3</td>
</tr>
</tbody>
</table>

**Types of Work Experience**
(Most accurate category; indicate all that apply)

<table>
<thead>
<tr>
<th>Type</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching in a K-12 institution</td>
<td>51</td>
<td>29.5</td>
</tr>
<tr>
<td>Teaching in a 2-yr. institution</td>
<td>119</td>
<td>68.8</td>
</tr>
<tr>
<td>Teaching in a 4-yr. institution</td>
<td>65</td>
<td>37.7</td>
</tr>
<tr>
<td>Other</td>
<td>36</td>
<td>20.8</td>
</tr>
</tbody>
</table>

**Age of Respondent**

<table>
<thead>
<tr>
<th>Age Range</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29</td>
<td>6</td>
<td>3.5</td>
</tr>
<tr>
<td>30-39</td>
<td>41</td>
<td>23.7</td>
</tr>
<tr>
<td>40-49</td>
<td>83</td>
<td>48.0</td>
</tr>
<tr>
<td>50-59</td>
<td>28</td>
<td>16.2</td>
</tr>
<tr>
<td>60-69</td>
<td>11</td>
<td>6.4</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>2.3</td>
</tr>
</tbody>
</table>

**Sex**

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>115</td>
<td>66.5</td>
</tr>
<tr>
<td>Female</td>
<td>58</td>
<td>33.5</td>
</tr>
</tbody>
</table>
### TABLE 10 (Continued)

**Number of Years Teaching in a 2-year Institution**

<table>
<thead>
<tr>
<th>Years</th>
<th>N</th>
<th>Years</th>
<th>N</th>
<th>Years</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>22</td>
<td>9-10</td>
<td>14</td>
<td>17-18</td>
<td>25</td>
</tr>
<tr>
<td>3-4</td>
<td>9</td>
<td>11-12</td>
<td>15</td>
<td>19-20</td>
<td>8</td>
</tr>
<tr>
<td>5-6</td>
<td>13</td>
<td>13-14</td>
<td>26</td>
<td>21-23</td>
<td>3</td>
</tr>
<tr>
<td>7-8</td>
<td>20</td>
<td>15-16</td>
<td>18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Number of Years Working Under Current Department Chairperson**

<table>
<thead>
<tr>
<th>Years</th>
<th>N</th>
<th>Years</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>38</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>28</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>50</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>15</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12</td>
<td>2</td>
</tr>
</tbody>
</table>
Faculty members report various types of work experience: teaching in a K-12 institution, teaching in a four-year institution, teaching in a two-year institution and working outside education. Thirty-six respondents (20.8%) list work outside education as an accurate description of their past work experience. Approximately two-thirds (67.1%) list teaching in a K-12 or four-year institution as an accurate description. The majority (119 or 68.8%) also list teaching in a two-year institution as an accurate description. Respondents were directed to indicate all categories of prior work experience which applied to them; therefore, the number of work experience categories (271) exceeds the number of respondents (173).

Faculty members range in age from 24 to 69 years with approximately half of them (83 respondents; 48.0%) in their forties. Another 41 respondents (23.7%) are in their thirties; and 28 respondents (16.2%) are in their fifties. The remaining 21 respondents (12.1%) are in their twenties or in their sixties, or they did not put their age on the questionnaire.

Fifty-eight respondents (33.5%) are women, and 115 (66.5%) are men. The majority of department chairpersons (15 of 20 or 75%) is male. The majority of department chairpersons (15 of 20 or 75%) is male.

Respondents' years of work experience in a two-year institution range from one year to 23 years with
clusterings at 1-2 years, 7-8 years, 13-14 years and 17-18 years (11.5 to 14.5% at each level). One hundred sixteen respondents (67.1%) report they have been working under the current department chairperson for either one, two or three years. The remaining 57 respondents (32.9%) have been working under the current department chairperson for more than three years (four to twelve years).

REGRESSION ANALYSIS

Multiple regression analysis was used on two of the variables, leader behavior and the work environment, to indicate how much of the variance in each one was accounted for by a linear combination of independent variables.

The regression equation for the work environment is statistically significant ($F(10,157) = 15.66, p < .001$), and 49.9% of the variance is explained. Leader behavior, educational effectiveness and faculty characteristics estimate a significant linear equation for perceived work environment. (See Table 11.)

Three variables make significant contributions to the explanation of variance. Consideration ($t=6.29$) and Initiating Structure ($t=2.62$) are positive predictors of the work environment at the $p < .001$ and $p < .01$ levels of significance. Faculty Commitment ($t=2.09$) is a positive predictor, significant at the $p < .05$ level. Student Achievement ($t=1.86$), while it is not a significant
## TABLE 11
### SUMMARY OF MULTIPLE REGRESSION ANALYSIS
**FOR THE WORK ENVIRONMENT (N = 173)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>$b$ (regression coefficient)</th>
<th>$t$</th>
<th>PR $&gt; F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consideration (LBDQ)</td>
<td>0.50</td>
<td>6.29</td>
<td>0.0001 ***</td>
</tr>
<tr>
<td>Initiating Structure (LBDQ)</td>
<td>0.31</td>
<td>2.62</td>
<td>0.0097 **</td>
</tr>
<tr>
<td>Student Achievement (EEO)</td>
<td>0.30</td>
<td>1.86</td>
<td>0.0653</td>
</tr>
<tr>
<td>Faculty Commitment (EEO)</td>
<td>0.52</td>
<td>2.09</td>
<td>0.0379</td>
</tr>
<tr>
<td>Highest Degree of Respondent</td>
<td>0.31</td>
<td>0.08</td>
<td>0.9352</td>
</tr>
<tr>
<td></td>
<td>3.07</td>
<td>0.86</td>
<td>0.3927</td>
</tr>
<tr>
<td>Years of Teaching Experience</td>
<td>-0.18</td>
<td>-1.03</td>
<td>0.3056</td>
</tr>
<tr>
<td>Years Working</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under Department Head</td>
<td>0.22</td>
<td>0.67</td>
<td>0.5040</td>
</tr>
<tr>
<td>Age</td>
<td>0.08</td>
<td>0.76</td>
<td>0.4477</td>
</tr>
<tr>
<td>Sex</td>
<td>1.35</td>
<td>0.75</td>
<td>0.4555</td>
</tr>
</tbody>
</table>

WES Mean = 54.67
F = 15.66 ($p > 0.0001$)
F$_{10,157}$
R$^2$ = 0.499304
Intercept = -18.44
predictor of the work environment, is almost significant.

Departments with leaders who exhibit Consideration and Initiating Structure and with faculty members who are committed to teaching are perceived by faculty members to be departments with good working environments.

The regression equation for predicting leader behavior is statistically significant (F (11,156) = 20.58, p<.001), and 58.8% of the variance is explained. The work environment, educational effectiveness and faculty characteristics form a significant linear relationship for leader behavior as perceived by faculty members. (See Table 12.)

Four variables make significant contributions to the explanation of variance. The Relationship dimension of the WES (t=6.81) and the EEO subscale of Faculty Commitment are significant at the p<.001 level. The System Maintenance And System Change dimension of the WES (t=2.17) and the number of years the faculty member has been working for the current department head (t=2.20) are significant at the p<.05 level. The years working for the current department head is negatively related to leader behavior: the longer the tenure of the department head, the lower the faculty perception of leader behavior.

Departments characterized by good working relationships (WES Relationship dimension), high levels of faculty commitment (EEO subscale of Faculty Commitment),
## TABLE 12
### SUMMARY OF MULTIPLE REGRESSION ANALYSIS
#### FOR LEADER BEHAVIOR (N = 173)

<table>
<thead>
<tr>
<th>Variable</th>
<th>b (regression coefficient)</th>
<th>t</th>
<th>PR&gt;F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationship Dimension (WES)</td>
<td>1.31</td>
<td>6.81</td>
<td>0.0001 ***</td>
</tr>
<tr>
<td>Personal Growth Dimension (WES)</td>
<td>-0.47</td>
<td>-1.61</td>
<td>0.1104</td>
</tr>
<tr>
<td>System Maintenance and Change Dimension (WES)</td>
<td>0.39</td>
<td>2.17</td>
<td>0.0316 *</td>
</tr>
<tr>
<td>Student Achievement (EEO)</td>
<td>-0.06</td>
<td>-0.34</td>
<td>0.7317</td>
</tr>
<tr>
<td>Faculty Commitment (EEO)</td>
<td>1.36</td>
<td>5.081</td>
<td>0.0001 ***</td>
</tr>
<tr>
<td>Highest Degree of Respondent</td>
<td>3.15</td>
<td>0.74</td>
<td>0.4577</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.50</td>
<td>0.6147</td>
</tr>
<tr>
<td>Years of Teaching Experience</td>
<td>-0.05</td>
<td>-0.28</td>
<td>0.7763</td>
</tr>
<tr>
<td>Years Working Under Current Department Heads</td>
<td>-0.80</td>
<td>-2.20</td>
<td>0.0296 *</td>
</tr>
<tr>
<td>Age</td>
<td>0.21</td>
<td>1.77</td>
<td>0.0783</td>
</tr>
<tr>
<td>Sex</td>
<td>0.42</td>
<td>0.21</td>
<td>0.8371</td>
</tr>
</tbody>
</table>

LBDQ Mean = 110.08
F = 20.28 (p < 0.0001)
F[11,156] = 0.588

Intercept = 42.09

* p < .05
** p < .01
*** p < .001
organizational predictability and innovation (WES System Maintenance and System Change) and a relatively new chairperson are perceived by faculty members to have effective leaders.
CHAPTER V
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

SUMMARY

This study was designed to investigate the strength, direction and nature of relationships among three variables: the work environment, leader behavior and educational effectiveness in the community college setting, as perceived by faculty members. Each variable was measured as faculty members' responses on the three instruments which comprise the Community College Survey (Appendix C). The instruments are the Work Environment Scale (WES), the Leader Behavior Description Questionnaire (LBDQ) and the Educational Effectiveness Opinionnaire (EEO). Work environment is the social climate of the workplace: the quality of relationships, the opportunities for personal growth, and the predictability and innovation of the environment. The WES has ten subscales which are clustered into the three dimensions of Relationship, Personal Growth and System Maintenance and System Change. Leader behavior is defined as the leader's person-orientation and task-orientation, or the two subscales of Consideration and Initiating Structure on the LBDQ. Educational effectiveness is indicated by the levels
of Student Achievement and Faculty Commitment, the two EEO subscales. The relationships among the variables were explored through the use of a Pearson product-moment correlation coefficient with a supplementary multiple regression analysis.

The sample for this study was the full-time, college-parallel community college faculty member. These faculty members, in four of the eight community colleges in a midwestern state (N=275), were included in the study. More than 62% (N=173) returned usable questionnaires.

Faculty members' mean scores for the WES subscales suggest that faculty members perceive their work environments to be characterized by Involvement, Supervisor Support, Autonomy, Task Orientation, Work Pressure and Physical Comfort. In contrast, Control and Innovation are not frequently perceived characteristics of the work environment.

LBDQ mean scores on both subscales indicate that faculty members perceive their department heads to be exhibiting both Consideration and Initiating Structure. EEO subscale mean scores suggest a high level of Faculty Commitment, as perceived by respondents, a characteristic more frequently perceived than Student Achievement.

Hypothesized Relationships

The hypotheses proposed to test the relationships among the variables in this study are as follows:
H1: Leader behavior is positively related to the work environment.

H2: The work environment is positively related to educational effectiveness.

H3: Educational effectiveness is positively related to leader behavior.

In this study, leader behavior (Consideration and Initiating Structure) was related to the work environment (WES subscales and dimensions); 25 of the 26 relationships were significant, and 23 of them were positive. The LBDQ Consideration subscale was significantly related to all WES subscales and dimensions at either the \( p < .01 \) or the \( p < .001 \) level of significance. The strongest positive relationships were between Consideration and the Supervisor Support subscale and Consideration and the Relationship dimension. Consideration was strongly associated \( (r > 0.50) \) with the WES subscales of Involvement, Peer Cohesion and Autonomy. Two negative relationships emerged: Consideration was negatively related to the subscales of Work Pressure and Control, significant at the \( p < .01 \) level.

The second LBDQ subscale, Initiating Structure, was positively related to twelve of the thirteen WES subscales and dimensions at either the \( p < .01 \) or the \( p < .001 \) level of significance. Initiating Structure was most strongly related to the WES subscales of Clarity and Task
Orientation and the WES System Maintenance and System Change dimension. Although not at a significant level, Initiating Structure was negatively related to Work Pressure. The first hypothesis was accepted.

The second hypothesis in this study, relating the work environment to educational effectiveness, was also accepted. Although the relationships are weaker than those between leader behavior and the work environment, the relationships were significant. Student Achievement on the EEO was significantly related to eleven of the thirteen WES components; twelve of the thirteen relationships were positive. Student Achievement on the EEO was related, beyond the $p < .001$ level of significance, to the WES subscales of Involvement, Task Orientation, Innovation and the three dimensions of the WES. The Relationship dimension was most strongly related to Student Achievement. Student Achievement was not significantly related to the Work Pressure or Control subscales of the WES.

Faculty Commitment, the second EEO subscale, was significantly related to eleven of the thirteen WES components. Faculty Commitment, like Student Achievement, was not significantly related to Work Pressure or Control. Faculty Commitment was most strongly related, at the $p < .001$ level of significance, to the WES subscales of Peer Cohesion, Supervisor Support, Clarity, Innovation, Task
Orientation and Involvement and to the three WES dimensions. The second hypothesis was accepted.

The third hypothesis, indicating a relationship between educational effectiveness and leader behavior was supported by the results of this study. Three of the four relationships were significant at the p<.001 level (Consideration with Faculty Commitment; Initiating Structure with both Student Achievement and Faculty Commitment). The EEO Student Achievement and LBDQ Consideration relationship was significant at the p<.01 level of significance; all four relationships were positive. The third hypothesis was accepted.

**MAJOR FINDINGS AND CONCLUSIONS**

The results of this study can be generalized and summarized as seven major findings, listed and explained below.

1. The major variables in this study (leader behavior, the work environment and educational effectiveness) are interactive.

The model proposed for this study was designed to suggest an interactivity between and among the variables, a concept consistent with recent research efforts which also suggest an interaction (Kerr, et al., 1974; Coughlan and Cooke, 1974; Miskel, 1977; Ellett and Walberg, in Walberg, 1982), and Yukl's Integrating Framework for Research on Leader Effectiveness (1981). One indication
that the variables are interactive is the absence, in the literature, of a single typology or classification system for describing leader behavior, with the more complex leader behavior typologies including work environment characteristics. In this study, selected subscales on the instruments used to operationalize the variables are conceptually similar. Similarity also exists between instruments selected for this study and other instruments. The LBDQ Consideration subscale is, for example, conceptually similar to the more narrowly defined WES Supervisor Support subscale; the EEO Faculty Commitment subscale is conceptually similar to the more generic WES Involvement subscale; the LBDQ Initiating Structure subscale is similar to the WES Task Orientation subscale; Yukl's (1981) leader behavior category of Autonomy–Delegation is similar to the WES Autonomy subscale. Likert also indicates interactivity in his linear model (Yukl, 1981); he labels reciprocal influence as a key intervening variable between leader behavior and outcomes.

Extentions of the two-factor leader behavior theory include the influences of leader behavior on the work environment or on participants; a comprehensive classification of the work environment includes the quality of leadership in the environment. This overlapping and the absence of a widely accepted taxonomy of leader
behavior indicates interactivity. Differences may be more those of focus than of substance.

Conclusion

The results of this study provide further evidence of interaction. While correlational research cannot indicate directionality, the strength of the relationships and the results of the multiple regression equation used to predict leader behavior and the work environment indicate a relationship strong enough to be an interactive relationship, similar to the interactivity postulated by Yukl (1981) and Miskel (1977). Leader behavior is predicted by the quality of interpersonal relationships, Faculty Commitment on the EEO, and the work environment's predictability and flexibility ($r = 0.59$). The work environment is predicted by leader Consideration, Initiating Structure and Faculty Commitment ($r = 0.50$). The variables are closely related, if not interactive.

The community college environment, like that of other higher education institutions, is presumably characterized by professional interactions among colleagues, and the department chairperson is both a colleague and supervisor (Baldridge et al., 1978). The community college environment, as a collegial environment, might be expected to be a more interactive work environment than is a non-professional work environment, where participants have less specialized knowledge, fewer internal, professional
standards and less autonomy (Bidwell, 1965; Corwin, 1973; Scott, 1981).

2. The two-factor theory of leader behavior is applicable to the community college.

The LBDQ presents a two-factor theory of leader behavior (Halpin, 1957); a person-orientation and a task-orientation are associated with leader effectiveness. In much of the research (Bass, 1981; Yukl, 1981), investigators report that the most effective leaders are perceived by subordinates and superordinates to be concerned with both individuals and organizational productivity. Additionally, there is evidence that productivity and worker satisfaction are related to a leader's task-orientation (Stogdill, 1974; Kerr et al. 1974; Butterfield and Powell, 1981), and a leader's person-orientation has been linked to group performance (Coughlan and Cooke, 1974; Kerr et al., 1974; Bass, 1981; Yukl, 1981) and to reductions in turnover and absenteeism (Fleishman and Harris, 1962 in Yukl, 1981).

In this study, when leaders were perceived to be exhibiting Consideration (C), the work environment was characterized by good interpersonal relationships, autonomy, faculty involvement and role clarity. The educational outcomes of Faculty Commitment and Student Achievement were also more frequently perceived when leaders exhibited high Consideration. When leaders were
perceived to be exhibiting Initiating Structure (IS), the work environment was characterized by role clarity, involvement, innovation and good interpersonal relationships. In addition, Faculty Commitment and Student Achievement improved with increased IS.

Conclusion

In this study, when leaders exhibited high Consideration or Initiating Structure, explicit and predictable responses occurred in the work environment and in educational effectiveness. This finding suggests that changes in leader behavior might improve the work environment and educational effectiveness.

3. Transactional leaders (High C-High IS leaders) are the most effective leaders in the community college setting.

Community college department heads are most effective when they exhibit high Consideration and Initiating Structure, the two characteristics which come together in the transactional mode of leader behavior. Getzels and Thelen's transactional leader (1960) is one who can concurrently facilitate task accomplishment and respond to the needs disposition of organizational participants. Moos, too, in his social climate perspective (1974, 1976), stresses the importance of individual needs and the extent to which those needs are either satisfied or thwarted by the environment. Task orientation is also important for

Faculty perceptions of the leader's person-orientation and task-orientation on the LBDQ and the WES appear to covary. LBDQ Consideration and Supervisor Support on the WES are correlated \( r=0.75 \) as are Consideration and the Relationship dimension of the WES \( r=0.73 \), indicating a similarity in these person-oriented concepts. The strength of the relationships between Initiating Structure and Task Orientation \( r=0.45 \), between Initiating Structure and Clarity \( r=0.51 \), and between Initiating Structure and Faculty Commitment \( r=0.46 \) indicate a similarity in task-oriented concepts.

The two LBDQ subscales are correlated \( r=0.44 \), and the WES subscales of Supervisor Support and Task Orientation are correlated \( r=0.43 \), indicating that community college department heads are transactional leaders. The results of the multiple regression equation for predicting leader behavior can be interpreted as further evidence that transactional leader behavior is linked to good interpersonal relationships, faculty commitment and organizational flexibility and predictability. More than half (58.8\%) of the variance in leader behavior is explained.

Conclusion

This study appears to have a practical application.
Department chairpersons who are interested in creating a good work environment and increasing departmental effectiveness should evidence a concern for individuals and for the quality of education. Department chairpersons need to be knowledgeable about the two-factor theory of leader behavior because this theory appears to have applicability to the community college setting. The transactional leader is an effective leader, a finding which has application to both the selection and training of department heads and perhaps other community college administrators.

Contingency theories of leadership (e.g., Fiedler) may be less applicable to the community college setting than they appear to be to other settings. In this study, the results of the multiple regression analyses indicate a more direct relationship among the variables of interest than has been found in other settings.

4. Community college work environments are reported to exhibit particular characteristics which are not consistent with a professional work environment.

Scott (1981) says that a technically complex task such as education requires a qualified and autonomous professional who sets and maintains standards and who makes decisions about techniques and means. These professionals, within organizations, may be in conflict with the organization (Corwin, 1965; Stroup, 1966;
Thornton, 1970) because they are more committed to the profession than to the organization and because they reject bureaucratic rules and supervision in favor of their own judgements concerning client welfare. In higher education institutions, professionals are often characterized as individuals working in a collegial environment (Baldridge et al., 1979) where they have autonomy, are involved in decision-making (Cohen and March, 1976) and enjoy interactions with fellow professionals. Professionals act in accordance with internalized standards which are reinforced by interactions with colleagues.

Faculty members in this study reported mean scores below the norms established for the WES and reported in the Manual for Peer Cohesion, Clarity and Innovation (Table 1), characteristics presumably present in a professional work environment. The Innovation mean score was also below the midpoint of possible scores.

Innovation, in this study, was associated with the WES subscales of Involvement (r=0.62) and Autonomy (r=0.67), and thus would appear to be a characteristic of a professional work environment. Innovation is also significantly related (at p<.001) to all other WES subscales and dimensions with the exceptions of Work Pressure and Control, to both LBDQ subscales and to both EEO subscales. These relationships suggest that an
increase in Innovation would result in improvements in the ratings of the work environment, leader effectiveness and educational effectiveness.

The multiple regression equation used to predict leader behavior indicates that "new" department heads are rated more favorably than are those who have been in the position longer. The appointment of a new department head may represent the opportunity for Innovation, further indicating that community college faculty members would welcome a change, a finding consistent with Yukl's discussion of the Social Exchange Theory. A new department chairperson may have latitude to demonstrate competence and loyalty and to make decisions.

Clarity, the extent to which faculty members know what to expect in their daily routine, is also low (a mean score below the norm mean reported in the WES manual). If faculty members were experiencing autonomy and were involved in the decision-making process, a greater amount of Clarity or consistency would be expected, although Cohen, March and Olsen (1972) note that an unclear technology such as education and a diverse group of participants complicate the decision-making process. If Clarity is a desirable characteristic, department chairpersons should keep faculty members better informed, control inconsistencies in rule application and involve faculty members in decision-making to improve Clarity.
Peer Cohesion is apparently not a characteristic of the academic department in the community college, as reported by respondents in this study (a mean score below the norm mean reported in the WES manual). In contrast, leader Consideration, the WES subscale of Supervisor Support and the Relationship dimension of the WES are above the midpoint of possible scores. Because Peer Cohesion and Supervisor Support are two of the three subscales which comprise the Relationship dimension, Peer Cohesion is relatively low. Department chairpersons, if made aware of the low level of faculty cohesion, might be able to diagnose the cause and to act to improve cohesion. Additionally, the WES Personal Growth dimension is not a significant predictor of leader behavior, indicating that opportunities for personal growth are unrelated the the actions of the department chairperson.

Conclusion

In general, it would appear that faculty members and department chairpersons need to increase interaction and communication in order to improve relationships, provide clarity and identify alternative, innovative educational practices in order to improve the quality of the work environment.

5. The WES subscales of Control (Ctr) and Work Pressure (WP) appear to be negative characteristics of the work environment, in contrast to the leader behavior
characteristic of Initiating Structure (IS), which appears to be a desirable characteristic.

Professionals in organizations may reject bureaucratic regulations (Corwin, 1973). Baldridge, et al. (1979) have distinguished between educational organizations which foster professional development and those which hinder it through strict adherence to bureaucratic regulations. In this study, the characteristics of Ctr and WP are negatively correlated with other characteristics including leader Consideration, Involvement and Innovation. WP is also negatively correlated with Initiating Structure. Although the correlation is not significant, it is an indication that work pressure and goal orientation are contradictory characteristics, in the perception of community college faculty members.

Initiating Structure is considered to be a desirable leader behavior. Researchers have reported in the literature a relationship between Initiating Structure and outcomes such as productivity (Kerr et al., 1974). In addition, Kavanaugh (1975) found that middle managers do not in all cases prefer freedom and self-actualization to direction. Litwin and Stringer (1968) say that adherence to rules is an important determinant of a positive
organizational climate, and Weber's bureaucracy (in Scott, 1981) is characterized as an organization where a general set of rules governs performance. In this study, too, faculty members appear to appreciate IS, which is related, beyond the p<.001 level of significance, with Faculty Commitment and Student Achievement and the Relationship dimension of the WES. Initiating Structure is also significantly related to leader Consideration, Task Orientation and Clarity, beyond the p<.001 level of significance. Faculty members appear to appreciate Initiating Structure.

Conclusion

Faculty members do not appreciate Work Pressure or Control, which are both negatively associated with leader Consideration and the work environment characteristics of Involvement, Peer Cohesion, Autonomy and Innovation. The difference between Initiating Structure as a positive characteristic and Work Pressure and Control as negative characteristics is distinct. It appears that an increase in Work Pressure or Control results in decreases in the ratings of leader effectiveness and other work environment characteristics. Additionally, Work Pressure and Control are unrelated to educational effectiveness (below the p< .05 level of significance).

If department chairpersons increase Work Pressure or Control in an attempt to increase educational
effectiveness, their actions may have no effect on educational effectiveness. At the same time, faculty members may report less positive perceptions of leader behavior and other work environment characteristics. Other significant correlations suggest that an indirect but important relationship may exist between WP and Ctr and educational effectiveness; increased WP and Ctr may result in a decrease in educational effectiveness. An increase in Initiating Structure, Task Orientation or Clarity will, however, result in any increase in educational effectiveness. While Control and Work Pressure may be desirable characteristics in other work settings, they appear to be negative characteristics in the community college setting. Department heads should attempt to decrease work pressure, and they should not attempt to exercise control.

6. Faculty members do not perceive high levels of Student Achievement.

In general, faculty members rate leader behavior, the work environment and faculty commitment highly (mean scores above the midpoint). However, the Student Achievement mean score on the EEO (24.80) is only slightly above the midpoint (24). In contrast, the Faculty Commitment mean score on the EEO (28.70) is well above the midpoint of 21. The mean scores for WES subscales and dimensions and for the LBDQ subscales in general exceed
midpoints and norms reported in the manuals for those instruments. An inference can be drawn: Student Achievement is below expectations.

Contingency theories of leadership reported earlier in this study (e.g., Yukl, 1981) suggest that organizational effectiveness or measures of output can be improved if leader behavior and the work environment can be improved. In this study, leader behavior and the work environment appear to provide adequate conditions for student achievement. Student Achievement, however, is not rated very highly. A further contradiction exists. Professionals are usually characterized as committed to helping clients and concerned with results (Scott, 1981). In this study, faculty commitment does not appear to have resulted in student achievement; yet, faculty members report good relationships with department heads, reasonably good relationships with peers and a generally positive work environment.

Conclusion

The level of student achievement is a topic for discussion in the community college department. An intervening variable, perhaps the academic achievement level of students when they enroll in community colleges, might affect the level of student achievement. An alternative explanation is that students are inexplicably achieving below expectations. In either event, faculty
members and department chairpersons might wish to discuss any discrepancy between expectations and results in an attempt to ultimately improve the level of student achievement.

7. Faculty Commitment is related to task-orientation variables, relationship variables and professional growth variables in the environment.

Faculty Commitment, an EEO subscale, is most strongly associated with the following six work environment variables: Task Orientation, Personal Growth, Involvement, Relationship, System Maintenance and System Change, and Innovation. Task Orientation and the dimension of System Maintenance and System Change indicate Faculty Commitment is consistent with a goal orientation. Involvement and Relationship suggest Faculty Commitment is consistent with good interpersonal relationships. Personal Growth and Innovation suggest that faculty commitment is consistent with the opportunity for professional growth.

Conclusion

Faculty members appear to appreciate an environment of three components, and they report higher levels of faculty commitment when goal orientation, good relationships and opportunities for professional growth are present in the environment.

RECOMMENDATIONS FOR FURTHER RESEARCH

The purpose of this study was to identify
relationships among three variables in the community college setting: the work environment, leader behavior and educational effectiveness. Based on the results of this study, the following recommendations for further research are proposed.

The model proposed for this study postulates an interactivity among the variables; however, further research is needed to address the question of directionality. Although interactivity appears to exist, the relationships are not equally strong, with the variables of leader behavior and the work environment bearing the strongest relationship. Research is needed to investigate this difference.

Innovation seems to be present at only a low level in the community college setting. Innovation is related to Autonomy and Involvement; Innovation is negatively related to Work Pressure and Control. Further research is needed to determine how Innovation can be improved and to investigate the specific relationships between the negative characteristics of Work Pressure and Control and the positive characteristic of Innovation. The relationships in this study suggest that Work Pressure and Control should be reduced so that Innovation, Autonomy and Personal Growth can increase. In times of fiscal cutbacks or static enrollment, there may be an tendency to increase the teaching load of the faculty members (Work Pressure).
Under pressure for accountability, Control might increase. As a result, Innovation and Faculty Commitment might decrease. Longitudinal studies are needed to indicate what changes in work environment variables, especially Control and Work Pressure, occur over time and how these changes are related to changes in other work environment variables and institutional variables including policy, teaching load, enrollment patterns and other possibly confounding variables. Interventions could be planned to increase Innovation, and studies could be designed to investigate the amount and direction of the change in Innovation and the relationship of this change to changes in other variables.

This study is based on faculty perceptions of the work environment, leader behavior and educational effectiveness. A logical and likely fruitful extension would be the measurement of the same variables based on the perceptions of students and department chairpersons. Department chairpersons, for example, could complete the LBDQ, describing their own behavior. Results could be compared; any discrepancies could be discussed.

Future research studies could be designed which use a different definition of educational effectiveness or which use the Educational Effectiveness Opinionnaire (EEO) in other settings. Student Achievement, in this study, was significantly related to every subscale and dimension
except Work Pressure and Control. Student Achievement was not, however, rated highly in this study. Specific research is needed to investigate the level of student achievement in the community college and its correlates and antecedents.

The lack of external validity, discussed as a limitation in this study, necessitates further research. Inquiry should also focus on differences within and between departments for each variable, subscale and dimension, so that subtle but significant variations could be identified. A large-scale study, using the department as the unit of analysis, is also needed to add to the knowledge base of leader behavior and the work environment in the community college setting. The Work Environment Scale appears to be applicable for research in an educational setting. However, other instruments exist which have been designed to measure similar constructs in similar and different settings. Research is needed to determine differences and similarities across instruments.

Contingency theories are complex theories. Many different intervening variables have been included in contingency theories. Further research is needed to identify important variables in the community college environment and the relationships among variables which are found to be related to organizational outcomes and leader behavior. The interactive model proposed for this
study appears to be a viable model for research, but different instruments or a model with additional components could serve as the basis for further research.

The number of male respondents in this study (66.6%) and of male department chairpersons (75%) suggests the possibility of a male-dominated work environment. One focus of further research would be an analysis of the differences in perceptions of male and female faculty members, especially when controlling for the sex of the department chairperson.

The low level of student achievement and the high level of faculty commitment is problematic, a seeming contradiction to the literature which indicates a professional's concern for clients. Research is needed to investigate the amount of faculty support for the open door philosophy. Faculty commitment to students is reportedly high; yet, students are not achieving. If students are not achieving at a level comparable to that of students in four-year institutions, research is needed to compare two-year and four-year institutions and the levels of student achievement in each type of institution.

The size of the standard deviation in this study indicates variance within departments and among respondents. Research is needed to investigate the sources of variance. Large standard deviations suggest that a variable not examined in this study exists in the
community college environment.

Theoretical understanding and educational practice can be improved through continued research. A systematic, sequenced inquiry is needed to expand the knowledge base pertaining to leader behavior, the work environment and effectiveness, specific to higher education organizations and the community college.
APPENDIX A

LETTER TO THE PRESIDENTS
We are interested in conducting a study in Ohio community colleges to identify the characteristics of the community college work environment and the environment's relationship to the behavior of the first-line academic administrator (chairperson, coordinator or dean) and to the educational effectiveness of the academic unit. In order to obtain the necessary information, we plan to ask full-time faculty members who teach university parallel courses to complete a 153-item questionnaire. They will be asked to report their perceptions of the work environment, the administrator's behavior and the effectiveness of the academic unit.

To help ensure that faculty members in this study constitute a representative sample of full-time university parallel instructors and professors, we would like to include faculty members at your institution. We are interested in faculty members who teach English composition, behavioral sciences, physical and natural sciences and mathematics, and humanities. We propose to locate faculty members by contacting the academic administrators or their secretaries to develop a list of faculty members who should be included in the study. We would like to mail a questionnaire to these faculty members which they should receive on or about November 4, 1983.

Accompanying this letter is a copy of the cover letter and questionnaire which you can submit to your institutional review board or forward to the appropriate individual at your institution. We will be contacting you early next week to discuss the project.

If you have any questions about the project or its procedures before next week, call (614) 237-3023 or leave a message at (614) 422-7700. Thank you for your consideration. Your support for the project will be appreciated.

Sincerely,

Lomie M. Hagstaff, M.D.
Professor

Shirley Seiter, M.A.
Investigator

Figure 8
LETTER TO THE PRESIDENTS
APPENDIX B

LETTER TO DEPARTMENT HEADS
As an academic administrator in a community college, you are keenly aware of the problems inherent in performing your duties as an instructional leader and resource allocator. However, very little is known about the characteristics of an effective academic unit. We have designed a research study to examine the relationship between the work environment and the leader's behavior and educational effectiveness. A letter explaining the study has been sent to the president of your institution, and institutional approval has been granted.

In November, we will ask full-time university parallel instructors and professors in Ohio community colleges to complete a questionnaire, describing their perceptions of the work environment, leader behavior and educational effectiveness. The focus of the study is not the academic administrator. The focus of the study is the work environment as a function of leader behavior and educational effectiveness.

Your support for the project is requested. Please encourage faculty members to return the research questionnaires which will be mailed to them on November 4, 1983. A list of faculty members is attached.

Faculty members can be assured of complete confidentiality. The questionnaire will have a code number for mailing purposes only, so that we will know which questionnaires have been returned. A summary of the research results will be available in June, 1984.

Thank you in advance for your cooperation. I will be happy to answer any questions that you may have. Please write or call. You may telephone me at (614) 237-3023 or leave a message at (614) 422-7700.

Sincerely,

Shirley Seiter
Investigator

PROGRAM AREAS
Curriculum, Instruction and Development
121 Ramseyer Hall, 614-422-5181

Educational Administration
301 Ramseyer Hall, 614-422-7700

Higher Education, Student Affairs and Adult Education
301 Ramseyer Hall, 614-422-7700

Humanistic Foundations
121 Ramseyer Hall, 614-422-5181

Vocational-Technical Education
160 Ramseyer Hall, 614-422-5237

Figure 9
LETTER TO DEPARTMENT HEADS
APPENDIX C

LETTERS TO FACULTY MEMBERS AND
THE COMMUNITY COLLEGE SURVEY
Community college faculty members, like educational professionals at all levels, are interested in educational outcomes, the results of teaching, the work environment and the academic administrator's leadership. Unfortunately, we have only a sketchy idea of the type of work environment and administrative action that faculty members like you believe to be important. We are asking you to fill out the attached questionnaire, describing your academic unit, so that we may begin to understand the characteristics of an effective academic unit.

You may be assured of complete confidentiality. The questionnaire has an identification number for mailing purposes only. This is so we may check your name off the mailing list when your questionnaire is returned. Your name will never be placed on the questionnaire. A letter has been sent to your academic administrator (coordinator, chairperson or dean) to explain the purpose of the study, and that administrator is aware of your participation. The questionnaire should take you no more than 20 minutes to complete.

You may receive a summary of the results by writing Copy of Results Requested and your name and address on the outside of the return envelope. Please do not place your name on the questionnaire itself.

In order to understand how faculty members really feel, it is most important that all questionnaires be returned. Your response is important.

I would be happy to answer any questions you may have. Please call. The telephone number is (614) 237-3023, or you may leave a message at (614) 422-7700. Thank you for your assistance.

Sincerely,

Shirley Selter
Investigator

Figure 10
LETTER TO FACULTY MEMBERS AND THE COMMUNITY COLLEGE SURVEY
WORK ENVIRONMENT

The first ninety items are statements comprising the Work Environment Scale, designed to allow you to describe the academic unit (department, division, or school) where you work. The term department head refers to the academic administrator to whom you are responsible (chairperson, coordinator, dean).

You will be describing how is aware of your participation in the study.
You are to decide which statements are true of your work environment and which are false. If you think the statement is TRUE or mostly TRUE, circle the T next to the item.
You think the item is FALSE or mostly FALSE, circle the F next to the item.

Be sure to answer each statement.

T F 1. The work is really challenging.
T F 2. People go out of their way to help a new faculty member feel comfortable.
T F 3. Department heads tend to talk down to faculty members.
T F 4. Few faculty members have any important responsibilities.
T F 5. People pay a lot of attention to getting the work done.
T F 6. There is constant pressure to keep working.
T F 7. Things are sometimes pretty disorganized.
T F 8. There is a strict emphasis on following policies and regulations.
T F 9. Doing things in a different way is valued.
T F 10. It sometimes gets too hot.
T F 11. There's not much group spirit.
T F 12. The atmosphere is somewhat impersonal.
T F 13. Department heads usually compliment a faculty member who does something well.
T F 14. Faculty members have a great deal of freedom to do as they like.
T F 15. There's a lot of time wasted because of inefficiencies.
T F 16. There always seems to be an urgency about everything.
T F 17. Activities are well-planned.
T F 18. People can wear wild looking clothing on the job if they want.
T F 19. New and different ideas are always being tried out.
T F 20. The lighting is extremely good.

T F 21. A lot of people seem to be just putting in time.
T F 22. People take a personal interest in each other.
T F 23. Department heads tend to discourage criticisms from faculty members.
T F 24. Faculty members are encouraged to make their own decisions.
T F 25. Things rarely get "put off till tomorrow."
T F 26. People cannot afford to relax.
T F 27. Rules and regulations are somewhat vague and ambiguous.
T F 28. People are expected to follow set rules in doing their work.
T F 29. This place would be one of the first to try out a new idea.
T F 30. Work space is awfully crowded.
T F 31. People seem to take pride in the institution.
T F 32. Faculty members rarely do things together after work.
T F 33. Department heads usually give full credit to ideas contributed by faculty members.
T F 34. People can use their own initiative to do things.
T F 35. This is a highly efficient, work-oriented place.
T F 36. Nobody works too hard.
T F 37. The responsibilities of the department head are clearly defined.
T F 38. Department heads keep a rather close watch on faculty members.
T F 39. Variety and change are not particularly important.
T F 40. This place has a stylish and modern appearance.
T F 41. People put quite a lot of effort into what they do.
T F 42. People are generally frank about how they feel.
T F 43. Department heads often criticize faculty members over minor things.
T F 44. Department heads encourage faculty members to rely on themselves when a problem arises.
T F 45. Getting the work done is important to people.
T F 46. There is no time pressure.
T F 47. The details of assigned jobs are generally explained to new faculty members.
48. Rules and regulations are pretty well enforced.
49. The same methods have been used for quite a long time.
50. The place could stand some new interior decorations.
51. Few people ever volunteer.
52. Faculty members often eat lunch together.
53. Faculty members generally feel free to ask for a raise.
54. Faculty members generally do not try to be unique and different.
55. There's an emphasis on "work before play."
56. It is very hard to keep up with your work load.
57. Faculty members are often confused about exactly what they are supposed to do.
58. Department heads are always checking on faculty members and supervise them very closely.
59. New approaches to things are rarely tried.
60. The colors and decorations make the place warm and cheerful to work in.
61. It is quite a lively place.
62. Faculty members who differ greatly from the others in the institution don't get on well.
63. Department heads expect far too much from faculty members.
64. Faculty members are encouraged to learn things even if they are not directly related to the job.
65. Faculty members work very hard.
66. You can take it easy and still get your work done.
67. Fringe benefits are fully explained to faculty members.
68. Faculty members do not often give in to department head pressure.
69. Things tend to stay just about the same.
70. It is rather drafty at times.
71. It's hard to get people to do any extra work.
72. Faculty members often talk to each other about personal problems.
73. Faculty members discuss their personal problems with department heads.
74. Faculty members function fairly independently of department heads.
75. People seem to be quite inefficient.
76. There are always deadlines to be met.
77. Rules and policies are constantly changing.
78. Faculty members are expected to conform rather strictly to the rules and customs.
79. There is a fresh, novel atmosphere about the place.
80. The furniture is usually well-arranged.
81. The work is usually very interesting.
82. Often people make trouble by talking behind others' backs.
83. Department heads really stand up for their people.
84. Department heads meet with faculty members regularly to discuss their future work goals.
85. There's a tendency for people to come to work late.
86. People often have to work overtime to get their work done.
87. Department heads encourage faculty members to be neat and orderly.
88. If a faculty member comes in late, he can make it up by staying late.
89. Things always seem to be changing.
90. The rooms are well ventilated.

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LEADER BEHAVIOR

The next 40 items comprise the Leader Behavior Description Questionnaire, designed to allow you to describe the department head to whom you are responsible, the same individual referred to in the work environment section.

The 40 items each describe a specific kind of behavior, but they do not ask you to judge whether the behavior is desirable or undesirable. They simply ask you to describe the behavior of your department head.

Read each item carefully and think about how frequently the leader engages in the behavior described by the item. Decide whether he/she always, often, occasionally, seldom or never acts as described by the item. Circle one of the five letters following the item to show the answer you have selected.

Be sure to answer each statement.

A = Always  
B = Often  
C = Occasionally  
D = Seldom  
E = Never

1. Does personal favors for faculty members. A B C D E
2. Makes his/her attitudes clear to the faculty. A B C D E
3. Does little things to make it pleasant to be a member of the faculty. A B C D E
4. Tries out his/her new ideas with the faculty. A B C D E
5. Acts as the real leader of the faculty. A B C D E
6. Is easy to understand. A B C D E
7. Rules with an iron hand. A B C D E
8. Finds time to listen to faculty members. A B C D E
9. Criticizes poor work. A B C D E
10. Gives advance notice of changes. A B C D E
11. Speaks in a manner not to be questioned. A B C D E
12. Keeps to himself/herself. A B C D E
13. Looks out for the personal welfare of individual faculty members. A B C D E
14. Assigns faculty members to particular tasks. A B C D E
15. Is the spokesperson of the faculty. A B C D E
16. Schedules the work to be done. A B C D E
17. Maintains definite standards of performance. A B C D E
18. Refuses to explain his/her actions. A B C D E
19. Keeps the faculty informed. A B C D E
20. Acts without consulting the faculty. A B C D E
21. Backs up the members in their actions. A B C D E
22. Emphasizes the meeting of deadlines. A B C D E
23. Treats all faculty members as his/her equals. A B C D E
24. Encourages the use of uniform procedures. A B C D E
25. Gets what he/she asks for from his/her superiors. A B C D E
26. Is willing to make changes. A B C D E
27. Makes sure that his/her part in the institution is understood by faculty members. A B C D E
28. Is friendly and approachable. A B C D E
29. Asks that faculty members follow standard rules and regulations. A B C D E
30. Fails to take necessary action. A B C D E
31. Makes faculty members feel at ease when talking with them. A B C D E
32. Lets faculty members know what is expected of them. A B C D E
33. Speaks as the representative of the faculty. A B C D E
34. Puts suggestions made by the faculty into operation. A B C D E
35. Sees to it that faculty members are working to capacity. A B C D E
36. Lets other people take away his/her leadership of the faculty. A B C D E
37. Gets his/her superiors to act for the welfare of faculty members. A B C D E
38. Gets faculty approval in important matters before going ahead. A B C D E
39. Sees to it that the work of faculty members is coordinated. A B C D E
40. Keeps the faculty working together as a team. A B C D E

1957, The Ohio State University

EDUCATIONAL EFFECTIVENESS
This opinionnaire is designed to allow you to report your perceptions of the educational process in your department. You are asked for your opinion of the students' academic preparation, concern and level of achievement and of the faculty's response to students' academic needs.

Circle one of the five letters following the item to show the answer you have selected. Your answers will range from "strongly agree" to "strongly disagree."

Be sure to answer each statement.

A = Strongly agree
B = Agree
C = Undecided
D = Disagree
E = Strongly disagree

1. Most new students in this department are determined to complete their academic programs. A B C D E
2. This department expects faculty members to maintain high academic standards. A B C D E
3. Most students who take courses in this department have adequate study skills. A B C D E
4. Most faculty members in the department respond to the academic needs of individual students. A B C D E
A = Strongly agree
B = Agree
C = Undecided
D = Disagree
E = Strongly disagree

Often students in this department A B C D E fail to satisfactorily complete homework assignments.

This department encourages A B C D E faculty members to demonstrate concern about the achievement of their students.

Most students who take courses A B C D E in this department are of below average ability.

Faculty members in this A B C D E department are concerned about effectively teaching their courses.

Most students who take courses A B C D E in this department are academically prepared to do college-level work.

Most courses in this department A B C D E are academically challenging.

The majority of students who A B C D E take courses in this department meet most of the course objectives.

Most faculty members prepare A B C D E well for their classes (i.e. make relevant assignments, supplement textbook content).

Most students who take courses A B C D E in this department find the course content interesting.

Students will think most courses A B C D E in this department include useful information.

Most faculty members keep A B C D E regular office hours to be available to students outside of class.

Our students who transfer to A B C D E four-year institutions are likely to have academic problems after they transfer.

Most students complete their A B C D E academic program.

PERSONAL CHARACTERISTICS

Finally, please complete the following six demographic items which are important in interpreting the results of the survey. Circle the number of the correct response or fill in the blank with the correct response.

1. Which is your highest degree?
   1. DOCTORAL DEGREE
   2. MASTERS' DEGREE
   3. BACHELORS' DEGREE
   4. OTHER

2. Which of the four choices below most accurately describes your past work experience? Circle all that apply.
   1. TEACHING IN A K-12 INSTITUTION
   2. TEACHING IN A FOUR-YEAR POST-SECONDARY INSTITUTION
   3. TEACHING IN A TWO-YEAR INSTITUTION
   4. OTHER

3. How many years have you been teaching full-time in a two-year institution, including this year?
   ______ YEARS

4. How many years have you been working under the current department head?
   ______ YEARS

5. What is your present age?
   ______ YEARS

6. What is your sex?
   1. MALE
   2. FEMALE

Thank you for taking the time to participate in our study. Please return the questionnaire in the attached envelope.
APPENDIX D

SECOND MAILING LETTER
About three weeks ago, I wrote to you asking your opinion about the work environment, academic leadership and educational effectiveness in your academic unit. We have not yet received a survey back from you.

We have undertaken this study because we believe that it is important to find out what kinds of work environment characteristics and leader behaviors faculty members associate with educational effectiveness.

We are writing to you again because of the significance each survey has to the usefulness of the study. Because only 300 community college faculty members in Ohio have been asked to participate, each response is important. If the results are to be representative of community college faculty members in Ohio, the faculty members must complete the survey.

In the event that you have misplaced your survey, a replacement is enclosed.

Your cooperation is greatly appreciated.

Cordially,

Shirley Seiter
Project Director

P.S. Some faculty members have said that they do not have a department chairperson. The leader whose name is on the top of the survey is the individual whose behavior you will be describing.
APPENDIX E

LETTER TO PRETEST PARTICIPANTS
AND PRETEST
Thank you for agreeing to help us develop the Educational Effectiveness Opinionnaire (EEO), an instrument designed to measure the educational effectiveness of the community college department. We are interested in outcomes, those characteristics which are the results of teaching, the work environment and the chairperson's leadership. The EEO will be used in a study designed to identify the leader behaviors and work environment characteristics which are related to departmental effectiveness.

As a full-time faculty member teaching college transfer courses at Columbus Technical Institute, you are well-qualified to evaluate this instrument--to determine whether it is conceptually sound, complete and clear. The seventeen-item instrument measures three outcome domains: (1) Students' Academic Preparation and Concern, (2) Faculty Response to Students' Academic Needs, and (3) Student Achievement.

We would like you to rate each item's clarity (Do you know what the item is asking) and relevance (Is this outcome important). On the revised instrument, which your responses will help to construct, respondents will answer on a five-point scale from "strongly agree" to "strongly disagree." In addition, you are asked to (1) suggest a revision for unclear or poorly phrased items, (2) identify any additional items which should be included in the final instrument, (3) answer five YES/NO questions, and (4) respond to an open-ended item.

Because only eight faculty members have been asked to evaluate this form of the Educational Effectiveness Opinionnaire, your response is very important. If you have any questions, I will be happy to speak with you. Please call me at 237-3023 or leave a message at 422-7700.

Thank you for your assistance.

Sincerely,

Shirley Seiter
Investigator
PRETEST SURVEY FOR
THE EDUCATIONAL EFFECTIVENESS OPINIONNAIRE

I. DIRECTIONS. Evaluate each item's clarity (Do you know what the item is asking) and relevance (How important is this outcome) by circling one of the four numbers for clarity and one of the four numbers for relevance. If you believe that an item is unclear, please suggest a revision. Remember that respondents will be asked to choose the responses of "strongly agree," "agree," "undecided," "disagree," and "strongly disagree" for each item.

<table>
<thead>
<tr>
<th>STUDENTS' ACADEMIC PREPARATION AND CONCERN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Most entering students are determined to complete their academic programs.</td>
</tr>
<tr>
<td>Revision: ________________________________</td>
</tr>
<tr>
<td>________________________________</td>
</tr>
<tr>
<td>2. Students who take courses in this department have adequate study skills.</td>
</tr>
<tr>
<td>Revision: ________________________________</td>
</tr>
<tr>
<td>________________________________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Very Clear</th>
<th>Unclear</th>
<th>Very Relevant</th>
<th>Irrelevant</th>
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</thead>
<tbody>
<tr>
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<td>2</td>
<td>1</td>
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<tr>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
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<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
3. Students who take courses in this department are of average or above average ability.

Revision: ______________________
______________________________
______________________________

4. Students who take courses in this department are not academically prepared to do college-level work.

Revision: ______________________
______________________________
______________________________

5. Students who take courses in this department are interested in course content.

Revision: ______________________
______________________________
______________________________
FACULTY RESPONSE TO STUDENTS' ACADEMIC NEEDS

6. Faculty members in this department maintain high academic standards.
Revision: ____________________
____________________________________
____________________________________

7. Faculty members in this department respond to the academic needs of students.
Revision: ____________________
____________________________________
____________________________________

8. Faculty members in this department are not concerned about the achievement of their students.
Revision: ____________________
____________________________________
____________________________________
9. Faculty members in this department are effective teachers.

Revision: ____________________

9. Faculty members in this department are effective teachers.

Revision: ____________________

10. Courses in this department are academically challenging.

Revision: ____________________

11. Faculty members prepare well for classes.

Revision: ____________________
12. Courses in this department have a substantive content to offer to students.

Revision: ____________________

_________________________________________________________________

13. Faculty members are available to students outside of class.

Revision: ____________________

_________________________________________________________________

STUDENT ACHIEVEMENT

14. The majority of students who take courses in this department master course content.

Revision: ____________________

_________________________________________________________________
15. Transfer students do transfer to four-year institutions.

Revision:

16. Our students have academic problems after they transfer to four-year institutions.

Revision:

17. Students who transfer to four-year institutions can compete successfully with other students after transfer.

Revision:
II. DIRECTIONS. We have suggested three outcomes: Students Academic Preparation and Academic Concern, Faculty Response to Students' Academic Needs, and Student Achievement. Please suggest any additional items which you feel should be included to measure educational effectiveness. (CONSIDERATION: The instrument which assesses the work environment measures the quality of relationships, the level of autonomy and goal clarity, and the extent to which the environment is orderly and predictable. This instrument is to assess only educational effectiveness.)

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Item</th>
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<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
</tbody>
</table>

III. DIRECTIONS. Please respond to the following five items by circling the appropriate response.

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>1. Do the items designed to measure each outcome appear to do so? (If no, explain in Section IV.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>NO</td>
<td>2. Are items likely to be interpreted similarly by all respondents?</td>
</tr>
<tr>
<td>YES</td>
<td>NO</td>
<td>3. Does each item apply to all respondents (community college faculty)?</td>
</tr>
<tr>
<td>YES</td>
<td>NO</td>
<td>4. Does the opinionnaire create a positive impression, one that will motivate respondents to answer it.</td>
</tr>
<tr>
<td>YES</td>
<td>NO</td>
<td>5. Does any aspect of the opinionnaire suggest a bias on the part of the investigator?</td>
</tr>
</tbody>
</table>
IV. If you have responded "NO" to any item in Section III, have noted any flaws or have any concerns with the seventeen-item opinionnaire, please explain.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Again, thank you for your time and cooperation. Please return the pretest survey in the stamped envelope provided.
APPENDIX F

INTER-CORRELATIONS BETWEEN SUBSCALES
FOR THE LBDQ AND EEO

165
TABLE 13

Inter-Correlations Between Subscales For the LBDQ and EEO

\[ N = 173 \]

<table>
<thead>
<tr>
<th>Two LBDQ: Subscales</th>
<th>0.4350 ***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two EEO: Subscales</td>
<td>0.4263 ***</td>
</tr>
</tbody>
</table>

*** \( p \leq 0.001 \)
APPENDIX G

INTER-CORRELATIONS BETWEEN
WES SUBSCALES AND DIMENSIONS
<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>PC</th>
<th>SS</th>
<th>A</th>
<th>TO</th>
<th>WP</th>
<th>Cl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involvement (I)</td>
<td>1.0000</td>
<td>0.6325</td>
<td>0.5128</td>
<td>0.5936</td>
<td>0.7074</td>
<td>-0.1415</td>
<td>0.5404</td>
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<tr>
<td>Peer Cohesion (PC)</td>
<td>1.0000</td>
<td>0.6915</td>
<td>0.5872</td>
<td>0.4633</td>
<td>-0.1990</td>
<td>0.4404</td>
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<tr>
<td>Supervisor Support (SS)</td>
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<td>0.4268</td>
<td>-0.2507</td>
<td>0.4895</td>
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<td></td>
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<tr>
<td>Autonomy (A)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Task Orientation (TO)</td>
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<td>0.4915</td>
<td>-0.2167</td>
<td>0.4261</td>
<td></td>
<td></td>
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<tr>
<td>Work Pressure (WP)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarity (Cl)</td>
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<td></td>
<td></td>
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<td>Control (Ctl)</td>
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<td>Innovation (Inn)</td>
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<tr>
<td>Physical Comfort (PhC)</td>
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<td></td>
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<tr>
<td>Relationship (R)</td>
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<td>Personal Growth (PS)</td>
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<tr>
<td>System Maintenance and System Change (SM/SC)</td>
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<tr>
<td></td>
<td>Ctrl</td>
<td>Inn</td>
<td>PhC</td>
<td>R</td>
<td>PG</td>
<td>SM/SC</td>
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<tr>
<td>Involvement (I)</td>
<td>-0.0919</td>
<td>0.6244</td>
<td>0.3814</td>
<td>0.8439</td>
<td>0.5956</td>
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<td>0.4349</td>
<td>0.2603</td>
<td>0.8933</td>
<td>0.4284</td>
<td>0.3769</td>
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<td>Supervisor Support (SS)</td>
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<td>Task Orientation (TO)</td>
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<td>0.4297</td>
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<td>0.7551</td>
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<td>0.4560</td>
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<td>Clarity (Cl)</td>
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<td>0.4701</td>
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<td>0.8189</td>
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<td>Control (Ctl)</td>
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<td>-0.1001</td>
<td>-0.0875</td>
<td>-0.2773</td>
<td>0.0166</td>
<td>0.2204</td>
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<td>0.6126</td>
<td>0.5445</td>
<td>0.7087</td>
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<td>Physical Comfort (PhC)</td>
<td>1.0000</td>
<td>0.3539</td>
<td>0.1637</td>
<td>0.7275</td>
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<td>Relationship (R)</td>
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<td>0.5623</td>
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<td>System Maintenance and</td>
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<tr>
<td>System Change (SM/SC)</td>
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<td></td>
</tr>
</tbody>
</table>

* p \leq 0.05
** p \leq 0.01
*** p \leq 0.001
APPENDIX H

WES DIMENSION MEAN SCORES AND
STANDARD DEVIATIONS BY DEPARTMENT
### TABLE 15

**WES Dimension Mean Scores and Standard Deviations**

**By Department**

*(N = 173)*

<table>
<thead>
<tr>
<th>Department I.D. Code</th>
<th>Number of Respondents</th>
<th>Relationship Mean</th>
<th>S.D.</th>
<th>Personal Growth Mean</th>
<th>S.D.</th>
<th>System Maintenance and System Change Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>102</td>
<td>9</td>
<td>16.2778</td>
<td>6.3300</td>
<td>18.1111</td>
<td>2.3688</td>
<td>15.6111</td>
<td>5.8351</td>
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<td>103</td>
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<td>20.6500</td>
<td>3.8445</td>
<td>19.4000</td>
<td>2.3190</td>
<td>18.5500</td>
<td>6.5254</td>
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<td>105</td>
<td>5</td>
<td>18.5000</td>
<td>2.6926</td>
<td>19.1000</td>
<td>1.9494</td>
<td>14.1000</td>
<td>5.7922</td>
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<td>201</td>
<td>10</td>
<td>18.7500</td>
<td>6.8038</td>
<td>15.6000</td>
<td>5.6460</td>
<td>12.6000</td>
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<td>11</td>
<td>19.0909</td>
<td>4.9337</td>
<td>18.1364</td>
<td>4.4277</td>
<td>18.0000</td>
<td>6.6068</td>
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<td>7</td>
<td>17.7143</td>
<td>4.5361</td>
<td>17.7857</td>
<td>3.3647</td>
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<td>402</td>
<td>4</td>
<td>22.0000</td>
<td>4.1633</td>
<td>20.8750</td>
<td>3.0104</td>
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<td>403</td>
<td>1</td>
<td>18.0000</td>
<td>-</td>
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*I.D. Code: First digit = Institution; third digit = department*
APPENDIX I

LBDQ MEAN SCORES AND STANDARD DEVIATIONS BY DEPARTMENT
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<th>Department I.D. Code</th>
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I.D. Code: First digit = Institution; third digit = department
APPENDIX J

EEO MEAN SCORES AND STANDARD DEVIATIONS BY DEPARTMENT
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I.D. Code: First digit = institution; third digit = department
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