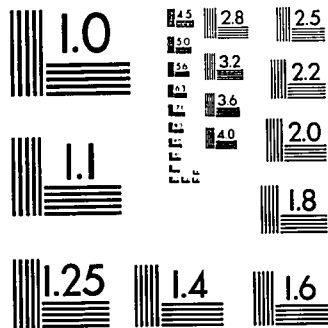
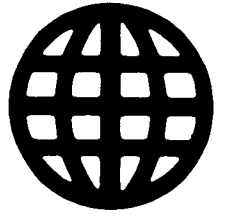


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PSYCHOLOGICAL TYPE AND TASK ACCOMPLISHMENT IN THE PUBLIC
SCHOOL MANAGEMENT TEAM

The University of Oklahoma

Ed.D. 1985

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THE UNIVERSITY OF OKLAHOMA
GRADUATE COLLEGE

PSYCHOLOGICAL TYPE AND TASK ACCOMPLISHMENT
IN THE PUBLIC SCHOOL MANAGEMENT TEAM

A DISSERTATION
SUBMITTED TO THE GRADUATE FACULTY
in partial fulfillment of the requirements for the
degree of
DOCTOR OF EDUCATION

By
FRANK C. BROCATO
Norman, Oklahoma
1985

PSYCHOLOGICAL TYPE AND TASK ACCOMPLISHMENT
IN THE PUBLIC SCHOOL MANAGEMENT TEAM

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CHAPTER I
INTRODUCTION

Formal organizations are formed when there is a common purpose and people are willing to communicate and contribute effort to accomplish that purpose (Barnard, 1938). Organizational growth and other related factors cause organizations to add people who become members for a variety of reasons. Leadership studies are directed toward maximizing efforts of the individual to fill the common purpose of the organization. Interrelations and interactions that occur in organizations between leader-follower and follower-follower fulfill personal and psychological needs of the individual. When those needs are satisfied, the individual then has the capacity to concentrate effort toward accomplishment of organizational purpose.

Fleishman (1973) offered a definition of leadership that has implications for the direction of renewed leadership studies. Leadership was defined as "...attempts at interpersonal influence directed through the communication process, toward the attainment of some goal or goals" (p. 3). Fleishman indicated that studies made by himself and Peters with managers at the Proctor and Gambel Company showed a number of significant relations between managers' interpersonal values and their exercise of consideration and

structure. Fleishman (1973) stated, "Personality aspects of leader-group relations need to be reconsidered" (p. 182).

Fiedler (1967) and House (1971) have developed theories in the contingency approach to leadership. In this approach, it is necessary to specify the conditions that define the relationship between leader traits, subordinate characteristics and situational variables (Szilagyi, 1980; Fleishman/Hunt, 1973; Hunt/Larson, 1973; Hoy/Miskel, 1980). Each of the models developed by House and Fiedler relates to the two major dimensions of Fleishman's definition of leadership, that of interpersonal influence and communications.

Contingency models make "...the assumption that managers can alter their behavior at will, but managers are influenced by their own personalities, their own ingrained rigidities and flexibilities" (Zierden, 1980, p. 28). In order to operationalize the contingency theories, managers must consciously perform a three-step process of analyzing the situation, selecting a behavior, and performing the behavior (Zierden, 1980). As the managers perform these three steps, they need to understand the importance of their own personalities as well as the personalities of the subordinates. Manager-subordinate interaction and consequent performance are influenced by the personal characteristics of all the participants. Manager behavior does not stand alone. Subordinates' perceptions and methods of reacting to the behavior must be accounted for in order to determine effectiveness. The subordinate's own personality will affect how s/he perceives manager behavior and whether or not it is appropriate to fill his/her needs in a given situation. The importance of personality as a variable in the social system of an organization was

addressed by Getzels when he stated, "We must also know the nature of the individual inhabiting the roles and their modes of perceiving and reacting to the expectations.... Personality is a conception of what lies behind specific acts and within the individual" (Getzels et al., 1968, pp. 66, 69). Personality can be defined as the combination of human characteristics of variables that may be employed to define or type an individual (Szilagyi, 1980).

Jung, the Swiss psychologist, (cited in Myers, 1982) provided a theoretical tool that permits individuals to be typed according to the way they perceive and react to situations. Managers can use this tool in analyzing a situation by considering their own methods of perceiving and reacting, as well as those of the subordinates. Jung theorized that what appears to be random variation in human behavior is actually orderly and consistent and reflects certain basic differences in the way a person prefers to use perception and judgment of a situation. Perception is understood to include the process of becoming aware of things, people, problems, occurrences and ideas. Judgment includes the process of coming to conclusions about what has been perceived (Myers, 1980; Doering, 1972; Mason and Mitroff, 1973; McCaulley, 1977).

Background of the Problem

When two or more people join together to solve a common problem or achieve a mutual goal, an organization is created. Ultimately, in organizations there arises the need for a leader. The leader as an individual and the role of leadership in organizations have been the subjects of theories throughout history.

As the nation changed from an agrarian to an industrial society, the concept of leadership evolved into one of management. The manager, i.e., leader, then becomes responsible for the success of the organization. Success of the organization, according to Barnard (1946), in The Functions of the Executive, depends upon two conditions: (1) the accomplishment of the goals of the organization, which he labeled "effectiveness," and (2) the satisfaction of individual motives, which he labeled "efficiency." Barnard's efforts to define a suitable compromise between effectiveness and efficiency led to multiple works on this theme. Management thought evolved through several periods, culminating with the contingency theories. In the contingency theories, it becomes obvious that the concept of management was a multi-varied phenomenon that involved the interpersonal aspects of both the leader and followers. Fleishman (1973) stated:

Twenty years ago the pendulum in leadership took a sharp swing away from the view of leadership as a personality trait, but I believe it is time to revive interest in this view. ...new developments in measuring interpersonal value constructs would seem especially relevant.... (pp. 182-183).

The interpersonal value constructs of both leader and follower are driving forces in permitting organizations and individuals within organizations to simultaneously achieve mutual goals. In order for this to occur, there needs to be a greater understanding of how interpersonal values, i.e., personality, of leader and follower affect the accomplishment of a task.

Statement of the Problem

The specific research question was: Do superordinate/

subordinate groups consisting of complementary (different) psychological types perform ambiguous and structured tasks more or less efficiently and effectively than groups consisting of compatible (similar) psychological types? The purpose of this study was to test the predictive power of the presumption that suggests groups of complementary (different) psychological types will perform different types of tasks more efficiently and effectively than groups consisting of compatible (similar) psychological types.

Contingency theorists have stressed that group effectiveness is dependent upon leader-member relations, position power of the leader, and task structure. Leader-member relations are considered the most important of these variables in determining effective leadership (Fiedler, 1967, 1971; House, 1971; Hunt/Larson, 1973; Fleishman/Hunt, 1973).

Researchers of cognitive style and decision style agree with the contingency theorists that individual interaction is a determinant of group effectiveness. The perception and judgment process of individual group members plays a dominant role in how they respond to stimuli, solve problems, interact with others and make decisions (Doering, 1972; Mason and Mitroff, 1973; Rowe et al., 1984).

When the variables of position power of the leader and task structure are controlled, it may be possible to predict group effectiveness by being able to predict the type of interaction that will occur between the superordinate and subordinate, i.e., leader-member relations. Leader-member relations can be predicted by knowing the psychological types of individuals making up the group and the general characteristics and behavior patterns of each type.

Conceptual Hypotheses

If the studies of Fiedler (1967) and House (1971) stress the importance of leader-member relations and interaction regarding task accomplishment, and the studies of Myers (1962, 1980), Doering (1972) and Blaylock (1983) are reasonable regarding the type of interaction that occurs in mixed and similar groups of psychological types; then it seems reasonable to assume that group composition would affect group task accomplishment. It would also seem reasonable to assume that a structured task, where instructions are clear and the task can be clearly specified in a step-by-step manner, should be more effectively accomplished by a compatible team, one in which members perceive in the same dimension and the judgment logic is identical.

Conversely, the accomplishment of an ambiguous task where there are no clear-cut solutions and multiple approaches are available, should be more effectively accomplished by a complementary team. In this team, members have different preferences for perception and judgment, and bring to the team the ability to see the problem from different angles and offer varied alternatives for action. The specific questions to be answered in this study were as follows:

1. Do superordinate/subordinate task teams consisting of compatible (similar) psychological types perform structured tasks more efficiently and effectively than teams consisting of complementary (different) psychological types?
2. Do superordinate/subordinate task teams consisting of compatible (similar) psychological types perform ambiguous tasks more

efficiently and effectively than teams consisting of complementary (different) psychological types?

Operational Hypotheses

HO₁ There is no significant difference at the .05 alpha level of significance in the performance of an assigned structured task by either superordinate/subordinate teams consisting of compatible (similar) psychological types or superordinate/subordinate teams consisting of complementary (different) psychological types.

H₁₁ Superordinate/subordinate task teams consisting of compatible psychological types perform structured tasks more efficiently and effectively than superordinate/subordinate task teams consisting of complementary psychological types.

HO₂ There is no significant difference at the .05 alpha level of significance in the performance of an assigned ambiguous task by either superordinate/subordinate teams consisting of compatible (similar) psychological types or superordinate/subordinate teams consisting of complementary (different) psychological types.

H₁₂ Superordinate/subordinate task teams consisting of compatible psychological types perform ambiguous tasks more efficiently than superordinate/subordinate task teams consisting of complementary psychological types.

H₂₂ Superordinate/subordinate task teams consisting of complementary psychological types perform ambiguous tasks more effectively than superordinate/subordinate task teams consisting of compatible psychological types.

Definition of Terms

Position Power: refers to the degree to which the position

itself enables the leader to influence subordinates to comply with directives. It determines the extent to which a leader can reward and punish members, whether the group can depose the leader, or whether the leader enjoys special or official rank or status which sets him or her apart from group members (Hoy/Miskel, 1982; Fiedler, 1967, 1971).

Task Structure: is measured by the extent to which the task can be clearly specified, verified, and programmed in a step-by-step manner. In a highly structured task the leader and group know exactly what to do; whereas in an ambiguous/unstructured task there are no clear-cut solutions, and a multiplicity of approaches make definite action of the leader and group difficult.

Leader-Member Relations: refers to the extent to which the leader is accepted and respected by the group members (Hoy/Miskel, 1982; Fiedler, 1967, 1971).

Myers/Briggs Type Indicator (MBTI) Types: a four letter formula used by Myers/Briggs to identify the psychological types described by Jung. The formula consists of four scales which indicates a person's preference for dealing with the environment, perceiving, judgment process, and organizing or structuring his/her life. The scales in the formula are as follows:

1. First letter in the formula (E or I) represents Extraversion/Introversion;
2. Second letter in the formula (N or S) represents Intuiting/Sensing;
3. Third letter in the formula (T or F) represents Thinking/Feeling;

4. Fourth letter in the formula (J or P) represents Judging/ Perception.

There are sixteen MBTI types representing the various combinations of the four scales (see Appendix for types and description) (Myers, 1962, 1982; Doering, 1972; Carlyn, 1977).

Gwaltney/Spalding Management Tree: a management training device that operationalizes the Myers/Briggs Type Indicator into management terminology. The Management Tree identifies eight management styles based on the last component (Gwaltney/Spalding, 1980; Gwaltney, 1984). A comparison of the Management Tree and MBTI can be seen in the Appendix.

MBTI, E-I Index: the first letter in MBTI type was designed by Myers/Briggs (1962, 1982) to measure the person's preferred orientation to life. Gwaltney/Spalding (1980) uses this phase of the Management Tree style as the method by which each individual begins a relation with other people. In the Management Tree, Self-Motivated is used similarly to Introverted, and Other-Motivated is used similarly to Extraverted.

Introverted Types/Self-motivated: the introverted type (cited in Myers, 1962, 1982; Doering, 1972; Carlyn, 1977) is described as having a more inward orientation than extraverts and oriented primarily to the inner world of concepts and ideas, and tend to detach themselves from the world around them. The Management Tree definition of Self-Motivated (Gwaltney/Spalding, 1980; Gwaltney, 1984) differs slightly, describing the Self-Motivated person as one who starts a relationship with others from a strong self-reference point; a person with a strong internal frame of reference. Both

definitions agree that this is a person who is interested in clear conceptualization of ideas, is relatively unaware of change in the environment, has a high capacity for sustained attention, and prefers activities requiring sustained attention, contemplation, and activities in which he or she works alone where little communication is required.

Extraverted Types/Other-Motivated: the extraverted type (cited in Myers, 1962, 1982; Doering, 1972; Carlyn, 1977) is described as being oriented primarily to the outer world of objects, people and action. Gwaltney/Spalding (1984) is in greater agreement with the definition of Other-Motivated as one in which the individual starts a relationship by getting the reception of others first and then responding to that reception. Both definitions agree that this individual will be more relationship-oriented. Typical characteristics of Extraverted/Other-Motivated types are sociability, outspokenness, ease of communication, awareness of and reliance on the environment for stimulation and guidance, action-oriented, often impulsive, prefer activities requiring frequent interaction and communications, will appear more flexible and open-minded (Myers, 1961, 1982; Doering, 1972; Carlyn, 1977; Gwaltney/Spalding, 1980, 1984).

Perception: the process of becoming aware of the environment which includes things, people, problems, occurrences and ideas. Jung (1923) lists two ways of perceiving, sensing and intuition (Myers, 1962, 1982; Doering, 1972; Carlyn, 1977).

MBTI S-N Index: the S-N Index is the second letter of the MBTI formula and was designed to measure the person's preferred way of

perceiving things. The Management Tree deviates slightly from MBTI in this function in that it is the third letter of the Management Tree style formula and describes how the individual chooses to implement a task. Myers/Briggs uses Sensing (S) and Intuition (N) as methods of perceiving. Gwaltney/Spalding (1984) uses Choicing and Dreaming as the methods of implementing decisions. The definition of Sensing and Choicing, and Intuition and Dreaming are similar in both formulas (Myers, 1962, 1982; Doering, 1972; Carlyn, 1977; Gwaltney/Spalding, 1980, 1984).

Sensing Types/Choicing: These individuals focus on perceptions received directly through the sense organs. They notice the concrete details and practical aspects of a situation. Attitude characteristics of individuals with this preference include a reliance on experience rather than theory; those who pick a choice of the options as quickly as possible, it does not have to be the best possible option, only one that will allow them to get on with the task. These people are described as pragmatic and practical and will often create a schedule for decision making and the implementation of those decisions (Myers, 1962, 1982; Doering, 1972; Carlyn, 1977; Gwaltney/Spalding, 1980, 1984).

Intuitive Types/Dreaming: These types rely on a certain spontaneous hunch from the unconscious. They like to deal with abstract ideas, inferred meanings and hidden possibilities in a situation. These are the people who, once the decision has been made, will look for the best possible options available to implement the decision. They have a high value in accomplishing tasks in an innovative way. These people do more theorizing in order to expand

the options as far as possible. Unlike the Sensing/Choosing individual, they need time to let ideas incubate, and then they may pop out with an answer that seems spontaneous (Myers, 1962, 1982; Doering, 1972; Carlyn, 1977; Gwaltney/Spalding, 1980, 1984).

Judgment Types: These individuals include the process of coming to conclusions about what has been perceived. Jung (1923) listed two types of judgment--Thinking and Feeling.

MBTI T-F Index: Both Myers/Briggs and Gwaltney/Spalding agree this index measures the person's preferred way of making decisions. This index is the third letter of the MBTI formula and the second letter of the Management Tree formula.

Thinking Types: Thinking dominance is a left-brained activity. People who make decisions in this manner do so by relying on logical structures to put order in a particular situation. They will typically use binary logic and in doing so they will take one item, compare it against another, select the most logical choice, and discard the other. This process is continued until a decision is reached. Individuals who use Thinking as a decision-making process can tell you exactly how they got from point A to point B and in most instances will have a paper trail to demonstrate the trail followed. Thinkers are skilled at objectively organizing material, weighing the facts as they perceive them, and impersonally judging the situation. Attitudes typically developed include objectivity, impartiality, a sense of fairness and justice, and skill in logical analysis. Characteristically these people need time to make a decision to go through this logical analysis of data. Therefore, a typical response and a clue to identifying this type will be that they will often

respond, "Let me think about it," when asked a question (Myers, 1962, 1982; Doering, 1972, Carlyn, 1977; Gwaltney, 1984).

Feeling Types: Feeling dominance is a right-brained activity. These people do more global thinking, pulling in a large chunk of information, comparing it to their past experience, and making a decision that often appears to be an emotional decision. These types are skilled at understanding other people's feelings and analyzing subjective impressions. Feelers have a great capacity to sense what is going on in the environment and make decisions based on personal values. Attitudes typically developed are an understanding of people and a desire to affiliate with them. These people have a desire for harmony in the work setting and exhibit a capacity for warmth, empathy and compassion (Myers, 1962, 1982; Doering, 1972; Gwaltney/Spalding, 1980; Gwaltney, 1984).

J - P Index: This index is found as the last letter in the MBTI formula and in the Management Tree formula. In the MBTI formula this preference determines dominance of type, and in the Management Tree formula it determines sub-style. This index was designed by Myers/Briggs to measure the person's preferred way of dealing with the environment. Gwaltney/Spalding (1984) describe this component as the intensity of pace which the individual takes in getting work accomplished. This is not the amount of energy expended, but rather the direction in which it is spent.

In both formulas there are two types which are similar in definition. In Myers/Briggs (1982) the two ends of the continuum are Judging and Perceiving. The corresponding terms used in the Management Tree formula are Active and Pensive.

Judging Types/Active: These people are organized and systematic with a need to live in a planned, orderly way. They have a high need for seeing external activity and to regulate and control that activity. Judging/Active types are described as the type of person who is causative, assertive, enterprising, time-oriented and impatient.

Perception/Pensive Types: These individuals also want to see things happen, but they want to be more reflective and spontaneous. Carlyn (1977) describes the perceptive types as "more curious and open-minded; they go through life in a flexible, spontaneous way, aiming to understand life and adapt to it" (p. 461). Gwaltney (1984) describes these types as reflective, inquiring, imaginative, more patient and future-oriented (4-16-84).

Compatible Team: For the purpose of this study, a compatible team was defined as one in which the majority of the members had the same Gwaltney/Spalding Management Tree style. They were matched on the first three letters of the MBTI.

Complementary Team: For the purpose of this study, a complementary team was defined as one in which the majority of the team members had different Gwaltney/Spalding Management Tree styles, and were not matched on the first three letters of the MBTI.

School Management Team: The school management team consists of the superintendent of schools and two principals. The principals report to and are evaluated by the superintendent.

Efficiency: For the purpose of this study, efficiency is defined as the time required to complete the assigned task.

Effectiveness: For the purpose of this study, effectiveness is

defined as the degree of accomplishment of the assigned task.

Significance of the Study

Fleishman (1973) stated:

If we consider a person's interpersonal needs and values as reflecting stable personality traits, these results are encouraging. They suggest the possibility of predicting leader behavior from prior knowledge of his inter-personal values...new developments in measuring interpersonal value constructs would seem especially relevant here (pp. 36, 83).

The work of Myers/Briggs (1962, 1982) and Gwaltney/Spalding (1980) provide a means of measuring interpersonal value constructs. At the very least, their work identifies certain personal characteristics in people and allows for predictions of behavior contingent upon those characteristics or personality traits.

It would seem reasonable that if one can predict individual behavior by identifying the psychological type of an individual, then group behavior could be predicted by knowing the psychological types of individuals comprising the group. Therefore, the significance of this study is that it considered the concepts of interpersonal behavior developed by Myers/Briggs and Gwaltney/Spalding and relates them into the concepts of situational favorableness developed by Fiedler. The study attempted to determine if, in fact, predictions could be made about group performance with a reasonable method of measuring interpersonal relations while controlling for position power of the leader and the type of task performed.

Limitations of the Study

This study was limited to the superintendent/principal management teams in independent school districts in a Southwestern state. The study was further limited to those school districts in

which principals report directly to and are evaluated by the superintendent. The study was limited to a southwestern state due to the nature of the study. Participation in this study took several hours of each superintendent's and principal's time. Time is perceived as a valuable commodity on the part of school administrators. Therefore, the study was limited to a state where the researcher had greater access to school management teams through both the formal and informal system.

The study was further limited regarding female participants. The number of women in school administrative positions in this southwestern state was small for the total population. Furthermore, the majority of the women in administrative positions were found in elementary principal positions. There were relatively few women high school principals and only one female superintendent at the time data were collected in the geographical area selected for the study.

The study was further limited in that subjects came from a highly educated and specifically trained group. Each person in the study had some common bases in training. Each received a bachelor's degree, spent time as a classroom teacher, and then did graduate work receiving at least a master's degree. A population trained in a different field or having less formal education may not have performed in a similar fashion as those selected as the sample for this study.

Organization of the Study

The study was organized into five chapters. Chapter I introduced the study and presented information on the following: (a) an introduction to the theoretical constructs; (b) background of the

problem; (c) statement of the problem which included the specific research question and purpose of the study; (d) hypotheses in conceptual and operational form; (e) definition of terms; (f) significance of the study; and (g) limitations of the study.

Chapter II presented the review of related literature and theoretical framework. The theoretical constructs associated with the contingency theories of Fiedler (1967) and House (1971) were reviewed along with the theory of psychological types described by Jung and operationalized by Briggs/Myers (1962, 1982) and Gwaltney/Spalding (1981). A review of small group theories (Golembiewski, 1962, 1969; Hare, 1976; de Charms, 1957; Schultz, 1958, 1967; McCaulley, 1977; Doering, 1972; Mason and Mitroff, 1973; Henderson and Nutt, 1982) were presented as subsidiary constructs relevant to a study of interpersonal behavior that occurs in school management teams.

Chapter III presented the population and study sample; instruments used in the study; data collection process; and the statistical procedure used to analyze the data.

Chapter IV reported the analysis and interpretation of the data and Chapter V presented the summary of the study, conclusions, implications, and recommendations of the study.

CHAPTER II
REVIEW OF RELATED LITERATURE
AND THEORETICAL FRAMEWORK

Related Literature

Our society is an organizational society. We are born in an organization and most of us spend most of our lives working for organizations. We spend much of our leisure time paying, playing and praying in organizations. Most of us will die in an organization, and when the time comes for burial, the largest organization of all--the state--must grant official permission.

Amitai Etzioni (Etzioni, 1964, p. 1)

"The successful organization has one major attribute that sets it apart from unsuccessful organizations: dynamic and effective leadership" (Hersey and Blanchard, 1977, p. 83). Vroom stated: "The effective functioning of social systems from the local P.T.A. to the United States of America is assumed to be dependent on the quality of their leadership" (Vroom, 1976, p. 1527). Leadership has occupied the mind and the imagination of persons for centuries. The question arises as to whether leadership is an art or a science. Is leadership an unidentifiable trait that some people are born with, as expressed by Aristotle that "from the hour of birth, some are marked out for subjection, others for rule" cited in (Hoy/Miskel, 1982, p. 220). Or is leadership only that as described by Robert Dubin as "the exercise of authority and the making of decisions" (Dubin, 1968,

p. 385). Although most historians and many lay people would agree with Dubin that the leader is the holder of a position with status in the hierarchy, this is not the definition agreed upon by most behavioral scientists (Morphet, Johns, Reller, 1974). The definitions of leadership used by behavioral scientists have the common threads of one person or group of people influencing another person or group of people to willfully strive to achieve organizational or group goals (Terry, 1960; Tennenbaum, Weschler, Massarik, 1959; Morphet, Johns, Reller, 1974).

The problem of how to effectively influence the activities of an individual or a group toward attainment of the organization's goals has been the subject of theories and models. The literature reflects three distinct periods of groups of theories in studying leadership, the trait theories, behavioral theories, and contingency theories.

Trait Theories

The Industrial Revolution created a unique set of problems for the early entrepreneurs. Available capital and new technology allowed the entrepreneur to expand business from the previously used domestic system to the factory system. In the factory, mass production lowers the per unit cost of the item produced and made the entrepreneur more competitive in the market place. However, mass production was not limited to only one entrepreneur; and increased competition made it imperative for growth to continue on an escalated scale. The retarding factor to continued growth was a limited number of trained workers and virtually no trained managers. Consequently, the size of an early factory was often limited to the number of people the entrepreneur could train and effectively supervise (Wren,

1979).

Early entrepreneurs attempted to solve the manager shortage problem by utilizing relatives in managerial positions. The presumed assumption was that relatives were more trustworthy and would also act to keep ownership of the factory in the family. Some entrepreneurs recruited bank clerks and tellers into managerial positions making the assumption people in these positions had both business and financial acumen. Others promoted workmen who had exhibited a great deal of technical skill or had the ability (often the physical strength) to keep discipline. Managers were left on their own to solve problems as they arose. The contemporary view of management was that the "success or failure to produce results depended upon the character of the leader, upon his personal traits and idiosyncrasies and not upon any generalized concepts of leadership" (Wren, 1979, p. 42).

The search for the traits that distinguished successful managers continued until the 1950's. In 1903 Taylor in Shop Management specified nine qualities that made up a "well rounded foreman: brains; education; special or technical knowledge; manual dexterity or strength; tact; energy, grit; honesty; judgment or common sense; and good health" (cited in Wren, 1979, p. 132). This approach to leadership continued with studies attempting to identify the physical or psychological traits that successful leaders possessed that distinguished them from their followers (Hoy/Miskel, 1982). Stogdill (1948) reviewed approximately 120 trait studies of leadership that were completed between 1904 and 1947 and classified factors associated with leadership into five general categories.

1. Capacity (intelligence, alertness, verbal facility, originality, judgment);
2. Achievement (scholarship, knowledge, athletic accomplishments);
3. Responsibility (dependability, initiative, persistence, aggressiveness, self-confidence, desire to excel);
4. Participation (activity, sociability, cooperation, adaptability, humor);
5. Status (socioeconomic position, popularity).

Stogdill (1948) found that traits identified in one study as crucial were found in others to be of little importance. He concluded that the trait approach by itself had yielded negligible and confusing results. Stogdill's (1948) review of the literature and the resulting conclusions all but put the trait approach to leadership effectiveness to rest until the 1970's (Hoy/Miskel, 1982).

Behavioral Theories

The trait approach gave way to the behavioral theories of the 1950's. Behavioral theorists focused their attention on the actual behavior of the leader and the effect of that behavior on the organization. The Ohio State studies of Halpin (1959), Winer (1952), Hemphill (1957), and Stogdill (1957), identified and defined the concepts of Initiating Structure and Consideration during this period. Efforts to describe effective organizational performance by relating managerial behavior, described in these concepts to specific situations in the organization, persisted until the 1970's.

Fleishman and Peters (1962) confirmed in their studies of managers at Proctor and Gambel a number of significant relations

between the managers' interpersonal values and their exercise of Consideration and Initiating Structure. Fleishman (1973) stated that if we considered a person's interpersonal needs and values as reflecting stable personality traits, it may be possible to predict leader behavior. He contended, "Twenty years ago the pendulum in leadership took a sharp swing away from the view of leadership as a personality trait. Personality aspects of leader-group relations need to be reconsidered" (p. 182).

Contingency Theories

The contingency theories and models reconsider personal characteristics of both leader and follower as variables in group performance. Contingency theories maintain that effective leadership is dependent on the fit between personality characteristics of the leader as well as other situational variables such as task structure, position power of the leader, and the follower's personality, skills and attitudes` (Hoy/Miskel, 1982; Szilagyi, 1980; Miner, 1980).

Two contingency models are in the forefront of the literature, House's Path-Goal Theory of Leader Effectiveness and Fiedler's Contingency Model of Leader Effectiveness (House, 1971; Fiedler, 1967). Each model utilized the major concepts of Fleishman's definition of leadership by establishing the importance of interpersonal relations and communications. In addition, each model describes group effectiveness by relating the personality characteristics of the manager to the situation. Personality characteristics of the manager are described in terms of the concepts of Initiating Structure and Consideration developed by the Ohio State Group and reviewed by Fleishman in "Twenty Years of Consideration and

Structure" (Fleishman/Hunt, 1973; Hunt/Larson, 1973).

House's Path-Goal Theory

House's Path-Goal Theory is built on the concepts of interpersonal relations and communications. The basic proposition of the theory is that "...one of the strategic functions of the leader is to enhance the psychological states of subordinates that result in motivation to perform or in satisfaction with the job" (cited in Hunt/Larson, 1973, p. 30). House pointed out that subordinates are motivated to accomplish group goals when the leader increases the personal payoffs to subordinates by clarifying the paths to goal attainment, reducing roadblocks and pitfalls, and increasing the opportunity for personal satisfaction for the subordinate (House, 1971; Fleishman/Hunt, 1973; Hunt/Larson, 1973).

A second proposition of the Path-Goal theory is that appropriate leader behavior to motivate subordinates will be determined by the situation in which the leader operates. One of the determinants of the situation is the characteristics of the subordinate. The theory maintains that leader behavior will be viewed as acceptable when the subordinate "sees such behavior as either an immediate source of satisfaction, or as instrumental to future satisfaction" (cited in Hunt/Larson, 1973, p. 31). Therefore, the personality of the subordinate becomes a driving force in the theory. The manager's behavior alone may not cause the motivation of the subordinate as much as the subordinate's perception of that behavior (House, 1971; Hunt/Larson, 1973; Fleishman/Hunt, 1973).

Hare (1976) stated that

Individuals who differ in personality dimensions also have divergent expectations for the leader. When subjects are ranked on an authoritarian-equalitarian scale, two distinct sets of expectations for leadership are found. Authoritarians accept status-laden, strongly directive leadership, demand that others adhere to intergroup values, and interact with the leader as a person rather than as a role (Hare, 1976, p. 281).

Therefore, what one subordinate may perceive as totally satisfying behavior on the part of the manager, may be totally dissatisfying to a second subordinate.

Fiedler's Contingency Model of Leader Effectiveness

Fiedler (1967) is generally credited with constructing the first model or theory that proposed relationships between leader attributes and specific parameters of the group task environment (Hoy/Miskel, 1982; Chemers/Skrzypek, 1972; Hunt/Larson, 1973; Fiedler, 1971). Fiedler, citing Korman, Campbell, Dunnett et al., in Fleishman/Hunt, 1973, stated, "There can be no doubt that the consideration and structure dimensions...described important leader behaviors. At the same time there is disappointingly little empirical evidence that these dimensions affect performance" (Fleishman/Hunt, 1973, p. 42). Fiedler further suggested, "...there are no overall considerate or structuring leadership styles. Rather the behavior of leaders on these two important dimensions depend in substantial degree upon the individual's personality (measured by LPC) and the favorableness of the situation" (Fleishman/Hunt, 1973, p. 57).

Fiedler (1967) developed a simple personality measure called the Least Preferred Co-worker (LPC) Scale." The LPC questionnaire asks the leader to describe the co-worker with which s/he works least well. The scale uses a 16 to 24 item semantic differential format, in which bipolar items are presented as pairs of opposing

adjectives. The respondent selects a point on the scale from 1 to 8 for each item. The LPC score is the sum of the item scores. Fiedler (1971, p. 129) stated:

The predictor measure used in studies of the contingency model is the Least Preferred Co-worker (LPC) scale. ...the LPC score must be seen as a measure which at least in part reflects the cognitive complexity of the individual and which in part reflects the motivational system that evokes relationship-oriented and task-oriented behaviors....

Other researchers have interpreted LPC to have different meanings.

Fiedler (1967) identified three major variables which contribute to situational favorableness. These are: (1) the leader-member relations, (2) the task structure, and (3) the position power of the leader. Fiedler (1971, p. 129) concluded, "It is 'easier' to be a leader of a group that respects and accepts its leader, or in which the leader feels accepted, than in a group that distrusts and rejects its leader." Likewise the situation becomes more favorable for the leader when the task is one that is highly structured and clearly outlined, as opposed to one that is vague, unstructured and nebulous. Fiedler (1967) used four dimensions of Shaw's (1963) research which suggests ten dimensions to classify tasks. The dimensions used were those which indicated the extent to which the leader was able to control and supervise group members by virtue of the fact that the task is structured or capable of being programmed. The four dimensions used by Fiedler (1976, p. 28) to test the contingency model were as follows:

1. Decision Verifiability - the degree to which the correctness of the solution or decision can be demonstrated either by appeal to authority, by logical procedures, or by feedback.

2. Goal Clarity - the degree to which the requirements of the task are clearly stated or known to the group members.
3. Goal Path Multiplicity - the degree to which the task can be solved by a variety of procedures.
4. Solution Specificity - the degree to which there is more than one correct solution. The leader who has a position vested with power to hire and fire, promote and transfer, and give raises or lower salaries is in a more favorable situation than the leader with little or no power over the group members. Fiedler (1973, p. 30) concluded, "Leader-member relations were considered to be the most important of these situational factors, and subsequent studies have supported this supposition."

Small Group Theories

Trait, behavioral, and contingency theories are essentially built on studies of appointed or elected leaders. These theoretical models are built on the assumption that the formal position provides the leader with legitimacy and power and that the leader impacts group performance. The leaders are, therefore, "viewed in static terms, with an emphasis on the outcomes of their influence assertions" (Blumberg et al., 1983, p. 413). This view may neglect the fact that many groups have no formal leaders; that leaders can be challenged, deposed, or ignored with new leaders emerging to deal with new situations and filling needs not met by the formal leaders. "It also diminishes the role of the needs and perceptions of the followers and ongoing interactions within groups" (Schneier/Goktepe cited in Blumberg et al., 1983, p. 413).

Small group theories attempt to explain the effects of member

perceptions and the ongoing interactions within groups on group performance and consequently on leadership of the group. Leadership is of utmost importance in the small group since it may be defined briefly as the capacity to influence the behavior of others in some desired direction.

Golembiewski (1962, p. 89) offers a provisional definition of a small group as one that "is composed of the interrelations of a limited number of people--with no firm upper limit on the number of members--who have developed shared ways of perceiving their environment and behaving within it" (p. 89). The interrelations and interactions that occur in a small group fulfill many of the personal or psychological needs of its members, and in doing so may influence the behavior of its members.

The group fulfills needs and influences behavior by providing an agency through which its members obtain and evaluate information about themselves and the environment in which they work. The group may create some aspects of reality which can and do effect the behavior of its members. This reality is often expressed when groups develop and enforce limits on production. Group members who deviate from the group norm, run the risk of suffering from friendly cajoling to physical violence not to be different from the group norm. The need for affiliation and affection are strong needs of most humans. The small group, through its informal interaction system has a greater opportunity to fill this need of group members than the formal organizational system which by its very nature is purged of emotion and affection. The group also serves as a defense against forces which individual group members could not or would not resist.

Evidence of this defense system is observed when the group sets restrictions on output and protects its individual members against management. As a group, a power base is formed that would not be available to any member on an individual basis (Golembiewski, 1962, 1969).

Although the small group can, and in some cases does, play a negative role in organizations, its role is not limited to resistance to achievement of organizational goals. The small group may serve as a linkage to the formal organization by complementing or supplementing purposes of the formal organization. It can compliment the technical organization by providing control in areas into which the technical organization has not been extended, or in some cases cannot be extended. When the small group provides affiliation and affection to its members, it makes them more secure. Individual security serves to reduce anxiety and consequently reduces the amount of emotional energy the individual expends in worry and lack of concentration on the job. Thus, the individual becomes a more productive person (Golembiewski, 1962, 1969).

The small group can lay claim to substantial importance in the organization as it influences organizational performance in one direction or the other. The interactions that occur between leader and follower, i.e., leader-member relations, may well be the determining factor as to the direction of small group behavior. Golembiewski (1962, 1969) using factor analysis, identified three functional roles the leader must perform in order for the small group to perform effectively in the organization. These roles are described as: "Individual Prominence and Achievement; Aiding Group

Attainment; and Sociability" (Golembiewski, 1962). Studies of group performance found that formal heads who failed to perform a substantial number of behaviors in any of the three functional roles led to the emergence of an informal leader who did perform behaviors in all three roles. The informal leader developed in response to needs of the group for the response of the behaviors. Groups in which the formal leader failed to perform behaviors in the three functional roles and where an informal leader emerged were characterized by low productivity and low satisfaction of participants (Golembiewski, 1962, 1969; Halpin, 1954).

Although leaders must perform all three functional roles to assure effective group performance, the roles are not always applied with equal weight. The needs of the group for one or more of the roles to be more heavily favored is contingent upon the personal characteristics of group members and type of task performed by the group. Task may be distinguished in terms of two elements; "degree of structure and degree of solution patterning (Schultz cited in Golembiewski, 1962, p. 119). Degree of structure refers to the degree of intimate cooperation necessary in task performance, and degree of solution patterning refers to the obviousness of the task solution. In a task such as developing personnel policy where the degree of structure is high and the solution patterning is low, socioemotional disturbances will effect task performance. Consequently, the effective leader will perform behaviors that are high in sociability (Golembiewski, 1962, 1969).

Groups are composed of individuals with personal characteristics that not only effect the behavior of the individual but also effect

the interaction among group members and consequent group performance. The effect of each individual's characteristics on other members of the group determines the group's cohesiveness and compatibility.

Cohesiveness is a measure of the group social gravitational field. The attraction the group has to each member and the degree of power the group has on individual members determines the cohesiveness of the group. Cohesiveness of the group also is determined by the number, strength and patterns of interpersonal attractions that occur within the group. Three major sources of attraction to the group determine cohesiveness; attraction to members, prestige of membership and the characteristics of the task performed (Golembiewski, 1962, 1969; Blumberg et al., 1983).

Schultz (1958, p. 105) defined compatibility as a "property of a relation between two or more persons, between an individual and a role, or between an individual and a task situation that leads to mutual satisfaction of interpersonal needs and harmonious coexistence." Schultz (1958, 1967) developed the FIRO Scales which consist of six interpersonal scales that measure a person's characteristic behavior toward other people in the areas of inclusion, control and affection, and the degree to which the person wants others to express those needs in his or her presence.

Groups composed of individuals who are compatible with respect to interpersonal needs spend less time with group maintenance, more time on task, function more smoothly, and are more effective than incompatible groups. Members of incompatible groups experience greater anxiety, more general dissatisfaction, and are less effective in task performance than compatible groups (Hare, 1976; Shaw, 1983,

cited in Blumberg et al., editors, 1983).

The small group literature indicates that group performance is contingent upon leader behavior, the type of task performed, and the interpersonal relations that exist in the group. Interpersonal relations are determined by the personal characteristics, i.e., personalities of all members of the group, and may well be the driving force in determining group performance. This supports Fiedler's (1973) conclusion that leader-member relations were considered to be the most important of the situational factors in his contingency model of Leader Effectiveness.

Importance of Personality

Research in small group behavior has generated a consensus that the variables, conditions of the social context, and personality characteristics of group members influence group performance. In the research of leadership theory, Fleishman and Peters (1962) found a significant relationship between managers' interpersonal values and their exercise of Consideration and Initiating Structure. They concluded, "If we consider a person's interpersonal needs and values as reflecting stable personality traits...they suggest the possibility of predicting leader behavior from prior knowledge of these interpersonal values" (cited in Fleishman/Hunt, 1973, p. 36). Chemers and Rice (cited in Hunt/Larson, 1974) pointed out that central to Fiedler's theory of Leadership Effectiveness was the assumption that certain leader attributes are stable and enduring. Fiedler (1967) maintained that the manifestation of leader behavior may change with changes in the situation, but the orientation itself is central to the individual and relatively unchanging. A corollary

to this position is that the behavioral changes which occur in different situations are themselves consistent and predictable from a knowledge of the leader's basic orientation (Hunt/Larson, 1974; Fiedler, 1967, 1971, 1976). This basic orientation of the leader was referred to by Getzels (1968) when he stated, "...we must know the nature of the individuals...their methods of perceiving and reacting...personality is a conception of what lies behind specific acts and within the individual" (p. 66, 69).

Golembiewski (1962, p. 151) linked personality to the environment when he defined personality as "an abstraction which attempts to relate the observed behavior of an individual with his needs and environment." Presthus (1978) in discussing the effects of anxiety on the individual, used Sullivan's theory of Interpersonal Psychiatry to define personality "as a consistent way of reacting or accommodating to interpersonal situations " (Presthus, 1978, p. 87).

Hare (1976) reported that Factor-Analytic Studies of personality and behavior found that personality factors most often found in the literature were intelligence, adjustment (anxiety), and interpersonal sensitivity. Bi-polar dimensions of personality reported were extraversion-introversion, masculinity-femininity, radicalism-conservatism, dominant-submissive, positive-negative, conformity-nonconformity.

Presthus (1978, p. 93) discussed the personality factor of anxiety as being "among the most compelling human drives." Anxiety is a hypothetical construct with the inference made that it causes behavioral changes. Anxiety appears when the individual or someone important to him or her is threatened, and is described in functional

form as "a moderate degree of tension or sensitivity that tends to sharpen the individual's perception of behavioral alternatives appropriate to a given situation and to their probable consequences" (Presthus, 1978, p. 93).

The degree of anxiety to which a person is susceptible is related to the personality dichotomy of introversion-extraversion. Presthus (1978, p. 108) refers to Jung and states:

"This dichotomy is also apparent in the type of mental illnesses to which each type is susceptible. The extrovert (sic) is subject to hysteria and psychopathy, disorders that have few moral implications; the introvert's illnesses include anxiety, depression, and compulsion which often mirror value conflicts.

Extraversion

Extraverts are described as outward looking in both conception and interest, realistic in their perceptions and adjustment to events. They tend to accept the rationality and legitimacy of the system, believing that existing values and institutions are necessary and proper. They are oriented toward absolute categories, custom and ceremony, hierarchy and obedience (Presthus, 1978).

Introversion

Introverts are highly self-conscious, emotionally oriented, and often reject majority norms. They dislike taking orders, integrating with a group discipline and devotion to a leader. Introverts tend to measure institutions by ideal standards and believe that existing inadequacies can be removed by human intelligence. They prefer complexity in geometric and art forms. To the introvert, the world is seen as unordered with its values and institutions relative and changing. Problems are perceived as multifaceted rather than as simple and clear-cut (Presthus, 1978).

The personality dichotomy of extraversion-introversion is a factor that must be considered in the study of interpersonal interaction and relations. It is clear from the previous description of characteristics and behavior patterns that persons at the extreme of this bipolar personality dimension approach both personal and organizational relations from a different set of values. Therefore, the possibility of inter-group harmony would be lessened in a group consisting of individuals at either end of the spectrum.

Dominant-Submissive Dimension

The personality dimension of dominant-submissive has been used to predict interpersonal behavior in groups. Ratings on personality scales indicate frequency of interaction initiated by the individual is indicative of the dominant variable because of its high correlation with such variables as the amount of action directed toward the individual in response to his or her activity. High group participation is correlated to personality tendencies described as dominant aggressive and outgoing, while low group participation is correlated with tendencies of the individual to exhibit depression and anxiety behaviors (Hare, 1976). The inference might be drawn that extraversion can be a predictor of high group participation, a dominant trait, and introversion, a predictor of low group participation.

Positive-Negative Dimension

Scales which measure the positive-negative dimensions of personality indicate that individuals with high positive scores exhibit tendencies to be extraverted, trusting and affiliative. Persons in this category will exhibit warm, personal, cooperative

behavior in groups and are more willing to disclose information about themselves. Persons with high negative scores exhibit the opposite behavior patterns (Hare, 1976). De Charms (1957) found that in small groups of four to six members, persons who rated high on affiliation and feared rejection by the group tended to compete with the group in anticipation of rejection. Group members high on affiliation were found to be more productive in competitive tasks and less productive in cooperative tasks.

Conforming-Nonconforming Dimensions

Hare (1976) after completing an extensive review of the literature involving conformity in small groups summarized his findings. The tendency to conform or not conform in the judgment situation may be related to personality. Conformity is more likely to occur in individuals with a high need to be approved by others, and in those individuals who exhibit personality traits that make them "field-dependent" so that they look to others for confirmation of opinions. Conformity to group norms is also a characteristic of individuals who were the first born; those who had a feeling that parental figures are harsh, punitive, restrictive and rejecting; those who have a low degree of self-confidence and are high in anxiety. "Sex also appears to be a factor, since women have found to yield more to bogus groups than men" (Hare, 1976, p. 27).

The pressure to conform in a group increases by the individual group member knowing that other members endorse a certain view, even if the reason for that endorsement is not known. This conformity occurs because of the assumption that behaving like others will elicit approval and voicing dissent will bring about negative

consequences (Blumberg et al., 1983).

The Bay of Pigs invasion, the failure to be prepared for the attack on Pearl Harbor, the Korean War stalemate and the escalation of the Vietnam War were studied by Janis (1971) when he developed the term "group think." Janis (1971) found in studying the groups that made these decisions, that the same phenomena appeared that was found in social-psychology experiments, showing that powerful social pressures are brought to bear by members of a cohesive group when a dissident to group opinion voices his/her objections to group consensus. Although it is obvious all groups are subject to "group think," the possibility increases when all group members share certain personal characteristics. Hare (1976, p. 30) found that "in work groups or living groups, members who are highly attracted to the group either for its prestige, its productivity, or the friendship of its members, will conform more to the group than will members who place a low value on these criteria."

The scale most commonly used to measure the tendency of conforming to group norms is the F (Fascist) scale. The F-Scale, originally developed to find the personality correlates of anti-semitism, evolved into a scale used to describe the syndrome "the authoritarian personality" (Golembiewski, 1969). Subjects rated high on "authoritarianism" (F+) conform more in group situations than subjects who rated low on the F-Scale. Golembiewski (1969, p. 259), referring to the authoritarian personality, states, "He (sic) is a supreme conformist. He conforms to the Nth degree...conformity is no voluntary act for him; it is compulsive and irrational." Although conformity to group norms is enhanced by the group process, certain

personality dimensions deeply entrenched within the individual make some people more susceptible to the process than others.

The productive functioning of the group is largely determined by the requirements and nature of the task and the interpersonal behavior of group members. The tendencies to behave which are consistent for an individual as s/he moves from group to group is termed personality. Therefore, personality of group members effect interpersonal behavior and consequent productivity of the groups (Hare, 1976).

Contingency theorists recognize that appropriate managerial behavior is determined by the situation of both task and personality. Managers can be trained to analyze situations and cognitively determine what behavior is required for a specific situation. However, managers will not always be able to fill the prescription because they are influenced by their own personalities (Zierden, 1980; Presthus, 1978). Personalities consist of human characteristics that are not quickly changed and lead to predictable patterns of behavior that can be defined as the human characteristics or variables employed to define or type an individual.

Previously described by-polar personality dimensions attempt to describe only one fact of personality at a time. However, personality is a multifaceted phenomenon. Individuals have different methods of perceiving information, making decisions about what has been perceived and reacting in group situations (Hare, 1976; Presthus, 1978; Myers, 1962, 1982). Therefore, in order to describe and predict interpersonal behavior, all three variables must be considered.

Jung's Theory of Psychological Types

The theory of Jung (cited in Myers 1982) is a means of defining or typing individuals with regard to their methods of perceiving, making judgments or decisions, and reacting to the environment. Jung (cited in Myers, 1982) theorized that much apparent random variation in human behavior is actually orderly and consistent and reflects certain basic differences in the way people prefer to use perception, judgment, and react in groups. Perception is the process of becoming aware of the environment, and judgment is the process of coming to conclusions about what has been perceived. Jung's theory of psychological types (cited in Myers, 1962, 1982; McCaulley, 1977; Von Franz/Hillman, 1979; de Laszlo, 1959; Campbell, 1983) postulated there were two means of perceiving--Sensing and Intuition; two methods of judging--Thinking and Feeling; and two methods of dealing with the world around us--Extraversion and Introversion. Doering (1972) stated that Jung's theory as operationalized by the Myers/Briggs Type Indicator (MBTI) is a method of determining how individuals will react in a group. Individual interaction with others in the group determines the quality of group communications, and good communications have been identified as a characteristic of an effective task team. Group communications is a variable that depends on how each individual group member views the situation and his or her relationship with the group. Therefore, the roles of group leaders become crucial in that they must know individual team members well, not only in terms of technical capacities, but also in terms of how they function as members of a group. Doering (1972) further suggests the Myers/Briggs Type Indicator is an instrument

that may be used to determine group members' method of perceiving and judging situations as well as dealing with the world around them.

Decision Style/Cognitive Style

Mason and Mitroff (1973) proposed the use of the MBTI to classify decision styles of group participants in a management information system. They concluded that different types identified by the MBTI make decisions differently and that "what is information for one type is not information for a different type" (p. 478). This concept was continued by Henderson and Nutt (1982) who found that cognitive style, measured by the MBTI was an important factor in explaining decision behavior of individuals. They found different types exhibited different degrees of the likelihood of perception and adaption of high risk projects.

Gwaltney and Spalding (1980) utilized Jung's theory and the MBTI to create a management training program labeled Management Tree. The Management Tree is comprised of eight managerial styles and sixteen sub-styles. Each style is a combination of Introversion/ Extraversion, Thinking/Feeling, Intuiting/Sensing. Although Gwaltney and Spalding (1984) utilized the terms Thinking and Feeling in the same manner as Myers (1982), they have substituted terminology for Introversion/Extraversion and Intuiting/Sensing. In the Management Tree, Self-Motivated/Other-Motivated replaces Introversion/ Extraversion and Dreaming/Choicing replaces Intuiting/Sensing. Management style becomes the combination of an individual's preference for dealing with people either by being self- or other-motivated; the individual's preference for use of internal thought in the decision making process either by Thinking or Feeling; and the

individual's preference for implementing the decision which has been made either by Dreaming or Choicing.

The Management Tree Sub-styles are derived by identifying the individual's "intensity in relation to degree of psychic and physical energy invested" (Gwaltney/Spalding, 1980, p. 1-1). This is the pace at which the individual goes about getting his/her work done. There are 16 sub-styles in the Management Tree. Eight of these sub-styles are labeled Active and the remaining eight are labeled Pensive.

In the MBTI, the component which identifies sub-styles in the Management Tree is also found and is labeled Judgment and Perceptive. The MBTI component has two functions to determine how the individual organizes and structures his/her life and which style is dominate, the judgement or perceptive mode.

Gwaltney/Spalding (1980, 1984) contended that by knowing the management style of the individual, i.e., psychological type, predictions can be made about his/her behavior and how s/he will react with others of similar and different styles. They also contended that, in many cases, non-verbal gestures used by individuals are characteristic of certain styles; and style can be identified by close observation of an individual's non-verbal gestures (Gwaltney, 1984).

The leader sensitized to management style and characteristic behavior of individuals with certain styles can learn to reasonably predict team-member behavior in a given situation. Once the leader is able to predict behavior and gain acceptance of all team members for the differences which existed in the team, communications would

be at a maximum. The skillful leader would then be able to guide the group toward successful task accomplishment.

Theoretical Framework

The theoretical framework for this study included contingency theory, especially the theories of Fiedler (1967) and House (1971), and the theory of psychological types as described by Jung (cited in Myers/Briggs, 1962, 1982) and operationalized by Myers/Briggs and Gwaltney/Spalding (1980). Contingency theories maintain that the personality of the leader and the follower and the interpersonal relations that occur between the two are important variables in determining group success in task accomplishment. According to Myers (1982), the theory of Jung maintained "that much seemingly chance variation in human behavior is not due to chance; it is, in fact, the logical result of a few basic observable differences in mental functioning" (p. 1).

Fiedler's (1976) model postulated that the performance of interacting groups, that is groups in which members work cooperatively and interdependently on a common task, is contingent upon the interaction of leadership style and situation favorableness. Fiedler defined "personality style or leadership style...as a transsituational mode of relating and interacting with others, and measures the style with the Least Preferred Co-worker (LPC) scale" (cited in Fleishman, 1973, p. 42).

The LPC score of a manager has been interpreted to mean a number of different things by different researchers (Fiedler, 1957, 1958, 1964, 1967; Hill, 1969; Foa, Mitchel and Fiedler, 1971; Fishbein, Landry and Hatch, 1969; Opuni, 1984). The most common interpretation

is that LPC is a measure of manager behavior in regard to the concepts of Initiating Structure and Consideration, and measures the extent to which the respondent views the least preferred co-worker as being difficult with whom to work (Fiedler, 1964, 1967, 1971; Hill, 1969; Foa, Mitchel and Fiedler, 1971). Fishbein et al., (1969) found that "LPC score was not simply measuring attitudes toward a given attitude object, but rather, it is a measure of different individual's attitudes toward different attitude objects...." (p. 185). Opuni (1984) found that LPC difficulty differences, the degree of difficulty perceived by two different respondents toward their least preferred co-worker, significantly affected the scores of respondents. Furthermore, the leadership style of respondents was discovered to be susceptible to significant misclassification, since the cutting scores did not take into consideration LPC difficulty differences among LPCs (p. 52). Situational Favorableness has been described as leader-member relations, task structure and position power of the leader. Leader-member relations was considered to be the most important of these situational factors (Fishbein, Lindy, S. Hatch, 1969; Mitchel, 1969).

Leader-member relations, task structure and position power of the leader are also factors in House's Path-Goal Theory (1971). According to House (1971), the function of the leader is to motivate the subordinate by making the path to goal attainment easier to travel. When the task is ambiguous, increased interaction between the leader and subordinate is appropriate until the path to accomplishment of the task is clear. In a structured task where the path-goal relationships are apparent, attempts to clarify the path-

goal relationships will be seen by the subordinate as redundant and have a negative motivational effect. Leader-member relations are not dependent on the characteristics of the leader alone, but also on the characteristics of the subordinate (House, 1971; Hunt/Larson, 1973). In a group situation, the same leader behavior may be perceived by one subordinate as satisfying or motivational and by another subordinate as dissatisfying, depending upon the subordinate's perception of and judgment of the problem.

Myers and Briggs (1982) contended that perception and judgment make up a large portion of people's total mental activity, which in turn governs much of their outer behavior. Thus, differences in perception and judgment should result in corresponding differences in behavior.

Another basic difference in people, accounted for by Briggs and Myers, is the relative interest in their outer and inner worlds. This difference is in their introversion, one of two complementary orientations to life. Its complement is extraversion. The introvert's main interests are in the inner world of concepts and ideas, while the extravert is more involved with people and things (Myers, 1982; Carlyn, 1977; Doering, 1972).

Since extraverts have a preference for people and communication, they should work better in groups. Kahn and Wolfe (1969) found that extraverts perceived greater amounts of trust and respect and lesser amounts of tension from their associates than did introverts, when performing a task under pressure. Extraverts have been found to have a greater tendency to engage in self-stimulating activities and to withdraw from repetitive tasks (Bakan, Belton, and Toth, 1963; Cooper

and Payne, 1967). Hamner and Organ (1978) suggested that the positive impact of stimulating tasks will be higher among extraverts than introverts. Kim (1980) found that both extraverts and introverts were more dissatisfied with nonstimulating tasks than stimulating tasks. However, introverts reported less dissatisfaction than did extraverts in the nonstimulating task, and extraverts were more satisfied than introverts with stimulating tasks. Kim (1980) also reported, "Contrary to the predictions, the introverted subjects tended to perform better in stimulating tasks than did the extraverted subjects, whereas the extraverted subjects performed better than the introverted subjects in nonstimulating tasks" (p. 314).

The Myers/Briggs Type Indicator (MBTI) is a means of measuring the variables in Jung's Personality Typology (Myers, 1982; Carlyn, 1977; McCaulley, 1977). Gwaltney/Spalding's (1980, 1984) Management Tree provides a means of translating the MBTI into management terminology. It would seem reasonable that by knowing the psychological type or management style, as classified by the Management Tree, of the superordinate and subordinates in a task group, predictions could be made about group performance. A limited amount of research has been done with groups consisting of compatible (similar) psychological types and complementary (different) psychological types (Blaylock, 1983; Doering, 1972; Myers, 1974).

Myers (1974) described a "superior management team" as one in which the leader shared at least one common component of the Myers/Briggs Type Indicator formula with every other member of the team (p. 5). In this type of team, the leader's ability to

communicate with all members of the team and improve team effectiveness is increased. Yorks (1975) agreed that communication style, is "...a way of interacting with others that reflects their basic personality" (p. 34). Individuals are more likely to be receptive to ideas presented by someone in a style congruent with their own, and similarly less receptive to the same ideas presented in a style dissimilar to their own (Yorks, 1975). Yorks (1975) stated:

If we develop skills which allow us to identify key characteristics of the communicative styles of others and, where necessary, modify our own style for greater consonance, we are in a better position to promote continuing dialogue and reduce resistance to our ideas (p. 34).

Yorks (1975) proposed the theory of personality developed by Jung as a useful foundation for understanding personality style and the coinciding communications system developed by individuals.

Mok (1975) and Gwaltney/Spalding (1980) also agreed that once communications are firmly established, the task team becomes more effective and that the theory of Jung is the basis for establishing the communications process. They also contended that skills can be developed which will permit one to identify his/her own key characteristics as well as the characteristics of others and to modify one's own style to enhance communications. Mok (1975) designed the Communicating Styles Survey and Gwaltney/Spalding (1980) designed the Management Tree which trains individuals to identify communicating or management style. Once style is identified, participants are trained to modify their own style to the style of others until communications and acceptance are firmly established.

Doering (1972) found with a limited sample at Honeywell that "the team performance and individual behavior showed a strong correlation with the psychological profile combinations involved" (pp. 51-52). In groups of like profiles, communication and cooperation was at an optimum because the problem was perceived in the same dimensions and the judgment logic was identical. However, task teams of like profiles were not found to make the strongest task teams. Their strength, which permitted maximum communication and cooperation, also became their weakness. Because their perception was in the same dimension and the judgment logical identical, task teams of like profiles were prone to overlook the same problem areas and not include them in their alternatives to solve the problem. Consequently, balanced teams of selected profiles were found to be more effective. The team leader's role is crucial in this type of group. S/he must not only ascertain technical competency of team members but also how each individual performs in a group setting, and establish a communications system that will permit each group member to respect the way others see the problem and how they arrive at judgments (Doering, 1972).

Blaylock (1983) in a study of senior level management students at Virginia Polytechnic Institute and State University also found that teams of mixed types out-performed teams of similar types in a computer simulated study. Teams were designated as compatible (similar) if all members shared a common perception and judgment dimension and if three of the four members coincided on all dimensions. All other groups were categorized as complementary (mixed) (Blaylock, 1983). The task performed by the groups was to

improve a mythical firm's efficiency level. Because there were only four complementary (mixed) teams, the sample size was determined too small to be statistically significant (Blaylock, 1983).

Summary

Contingency theorists and small group theorists have clearly established that interpersonal relations within a task group is the most important variable in determining effective group performance. Task structure is also established as being a variable that must be considered by both the contingency and small group theorists. Fiedler (1976) contended that interpersonal relations are determined by the leader's style, measured by LPC, and situational favorableness, which includes task structure and position power of the leader. Leader's style is labeled either one of Initiating Structure or Consideration. LPC has been found to be a contradictory predictor of leadership style at best, and may or may not be an indicator of the leader's tendency to perform behaviors identified as Initiating Structure or Consideration. House (1971) established that interpersonal relations are not dependent on the personal characteristics of the leader alone, but also on the personal characteristics of the subordinate. In House's Path-Goal Theory (1971), leader behavior was also described in terms of Initiating Structure or Consideration and was viewed as acceptable and satisfying to subordinates to the extent that the subordinates saw such behavior as either an immediate source of satisfaction or as instrumental to future satisfaction.

It is an over simplistic view to consider only the leader's style or the subordinate's perception of that style as being one of

Initiating Structure or Consideration as the determining factor in interpersonal relations and consequent task team performance.

Interpersonal relations are established by the harmonious blending of all personality characteristics with respect to the nature of the task to be accomplished.

The research in cognitive style (Rowe, Bennis, Boulgarides, 1984; Henderson and Nutt, 1980) has demonstrated that ways of perceiving and judging or reacting to information play a dominant role in how individuals respond to stimuli, solve problems, interact with others and make decisions. When individuals of a task team have like profiles, as measured by the MBTI, maximum communication and cooperation are possible, because the problem is being perceived in the same manner and the process of coming to conclusions (judgment) is identical. Although communications would be at an optimum with this type of team, it would not make the strongest task team to perform ambiguous tasks. When members are prone to "see" the same problem and react in the same way, they are also prone to overlook the same problem areas and may not be able to identify alternate solutions (Doering, 1972; McCaulley, 1977; Blaylock, 1983).

In the performance of a structured task, where the task can be clearly specified, verified, and programmed, and solutions to task accomplishment are limited, a task team consisting of members of like profiles would reasonably seem to be more effective than a team with different profiles. In this situation, where identification of the problem is already established and alternative solutions are limited, communications among team members become the driving force in task accomplishment. As previously stated, communications on a team of

like profiles is at a maximum and, therefore, this team should be able to reach early consensus on an alternative and begin to implement the decision.

In the performance of an ambiguous task, where there are a multiplicity of approaches available and there are no clearly defined solutions, a task team consisting of different profiles has the potential to perform more effectively. In this team, members would have the ability to see the problem from different perspectives because their method of perceiving information is different. They would also have the potential to identify a number of alternative courses of action because their method of coming to conclusions or making decisions is different.

Communications on this team would be more difficult and would require a skillful leader with competencies to recognize the difference in individuals to bring about group consensus. The task team of different profiles would be more creative in identifying "problems" that exist when assessing the data than the team of like profiles, which would have a tendency to identify "the problem." This task team would also have the ability to identify a number of alternative solutions available to complete the task. The difficulty encountered by this team, as previously indicated, would be coming to a consensus. The leader with position power and an understanding of the task to be accomplished as well as his/her own personality and the personality of other team members should be able to develop a communications network within the group to bring about consensus in identifying the problem to be addressed and a number of alternative solutions to the problem.

CHAPTER III
RESEARCH DESIGN AND METHODOLOGY

Selection of the Subjects

The population for the study was superintendent/principal teams in independent school districts located in a southwestern state. Each team had a minimum of one full-time superintendent and two full-time principals comprising the school management team. It was assumed that in districts of this size, principals would report directly to and be evaluated by the superintendent. This condition was necessary to assure that the variable of position power, as described in Fiedler's (1967) Contingency Theory, was accounted for in an on-the-job setting.

Time was perceived as a valuable commodity on the part of school administrators, and participation in this study took several hours of each participant's time. Therefore, the State where the researcher for this study had greatest access to school management teams through both the formal and informal system was selected as the population area.

Using the table of random numbers, all the management teams of the population were assigned a number for participation in the study. The first district drawn from the pool was assigned the number one, the second drawn was number two, and continuing until all

districts were assigned a number for participation. Utilizing this sequence, each superintendent and principal was administered the Myers/Brigs Type Indicator to identify each individual's psychological type and consequently identify each team as a compatible or complementary team. The team, consisting of one superintendent and two principals, was used as the unit of analysis in this study. In the event that a school district had more than two principals, only two were selected for participation. This allowed all teams to have the same number of participants. The psychological type of the principals was used as the basis for selection. When there were more than two principals in the school system, all were administered the MBTI. The researcher then considered the psychological type of the superintendent and selected the two principals needed to complete either a complementary or compatible team according to the needs of the study. In the event that all principals had the same psychological type, the researcher selected two by drawing lots. The process of identifying teams was continued until ten compatible and ten complementary teams were selected for participation in the study.

The process to select the sample and the number of teams selected (20) was used because of the assumed difficulty in identifying compatible and complementary teams. In determining the effect of Individual Psychological Type on task team effectiveness, only one team was studied by both Myers (1979) and Doering (1972). Blaylock (1983) utilized seventeen four-member teams in his study of the effect of psychological type on group accomplishment of a computer-simulated task. It should be noted that Blaylock (1983)

then typed a compatible team as one in which, "...all members shared common judgement and perception dimensions and if three of the four members coincided in all dimensions, all other groups were categorized as mixed" (p. 60).

The difficulty of identifying both complementary and compatible teams can be noted when observing the number of each type team used by Blaylock. In his sample of seventeen teams, there were only four (4) mixed or complementary teams. The population for Blaylock's study was a senior level production management class, and the similarity of types in the population may well have been caused by the fact that similar types often chose similar careers. Dietl (1981), in her study of 101 upper level management executives at AT&T of Omaha, Nebraska, found the group to be weighted in their preference for Sensing over Intuiting, Thinking over Feeling, and Judging over Perception. Myers (1982), citing Von Fang's study of 124 Canadian school administrators stated, "The sample seems to have no marked preference between E and I, S and N, or T and F. However, in dealing with the world around them, they are 86 percent J" (p. 51). A closer observation of the preference of the respondents, however, does demonstrate a choice of Extraversion over Introversion, Sensing over Intuiting, and Thinking over Feeling. Morrison's (1980) study of Florida principals also demonstrated a preference of Sensing over Intuiting and Judging over Perception, the judgment process was reversed, with the principals choosing Feeling in more cases than Thinking, and the choice for Extraversion/Introversion in Morrison's study (1980) was fairly equally distributed.

After reviewing the research of Myers (1962, 1980), Morrison

(1980), Dietl (1981, and Blaylock (1983), the researcher assumed that identifying complementary teams would be more difficult than identifying compatible teams. Yorks (1975) and Bledsoe (1976) also reported that communication is initially easier between people who possess like or similar psychological types. Therefore, it would seem safe to assume when a superintendent was interviewing principals for employment the ease of communication could lead to a favorable interview and consequent employment. It was also assumed that complementary teams would be found where the superintendent had not employed the principal or in those cases where the superintendent intentionally attempted to employ a principal of a different type.

Procedure for Collecting Data

A careful strategy had to be developed to seek the cooperation of the superintendents selected for the study. Since time was a valuable resource to superintendents, the data collection strategy had to involve a means of gaining and rewarding cooperation.

The superintendency is a rather closed network that relies heavily on the informal system of communication. Since the researcher was a member of this system, it was decided to use the informal network to gain cooperation. The first step in the process was to seek assistance from the presidents of the Northwest School Officials Organization, the Southwest School Officials Organization, and the Oklahoma Rural Schools Organization. These presidents were asked to write a letter supporting the researcher in this investigation and requesting cooperation for the study from their colleagues. Along with their letter, the researcher also sent a letter to selected superintendents soliciting their assistance in the

research. The researcher then followed this correspondence with a personal telephone call to each superintendent, explaining the study, how it would be conducted, and the approximate time it would take each team to participate in the study.

Since the completion of the structured and ambiguous task was a time consuming endeavor, the researcher felt it was necessary to offer some incentive to participating schools. The researcher offered to conduct an inservice activity for each participating district. The inservice selected by the superintendent could be focused upon one of three target audiences--the administrative team, superintendent and board of education, or the teaching staff.

The actual collection of data was done in three phases. Phase one was to seek cooperation from the superintendents and principals selected in the sampling process. Phase two was the identification of the ten compatible and ten complementary superintendent/principal teams needed for the study. Each member of the first twenty teams selected in the sample process was administered the Myers/Briggs Type Indicator (MBTI) Form F. Since the MBTI is a self-report forced-choice instrument, these were mailed to the superintendent of each selected team. The superintendent was asked to distribute the instrument to the principals and, after each person completed the instrument, it was returned to the researcher. In order to assure confidentiality of respondents, the instruments were packaged into self-addressed, stamped envelopes. As the instruments were returned, they were scored to determine the psychological type of each team member, which determined the identification of the team. This process was repeated until ten complementary and ten compatible teams

were identified.

Phase three of the study was to have each selected team complete a structured and ambiguous task. The structured and ambiguous tasks for this study were designed to coincide with the structured and ambiguous tasks designed by Fiedler (1967, 1971) and Mitchel (1969) in validating the contingency model. The selected task and criteria for effective performance of these tasks are described in the instrumentation section of this research.

The researcher visited each school site to administer the structured and ambiguous task. The role of the researcher was to distribute the necessary materials, give directions, and to record the time used by each team to complete the structured task. The researcher collected the material when the task was completed, sealed it in an envelope and submitted these materials to a panel of judges to establish a numerical score of each team's performance. The use of a panel of judges as a method of establishing a numerical score of performance was also similar to Fiedler's (1967, 1971) and Mitchel's (1969) research of the Contingency Theory.

Instrumentation

Myers/Briggs Type Indicator (MBTI)

The Myers/Briggs Type Indicator (MBTI) Form F is a 166 item forced-choice, self-report inventory which was developed to measure the variables in Jung's (1923) personality typology. It consists of four scales: Extraversion - Introversion (E - I); Sensation - Intuition (S - N); Thinking - Feeling (T - F); and Judgement - Perception (J - P). The indicator is designed to produce both a person's preference for each pole of the four indices (EI, SN, TF,

JP) and the strength of that preference. The indicator classifies respondents on four dichotomous-type categories, and it also produces eight numerical scores which can be transformed into four continuous scores. These eight scores are interpreted as four pairs of scores, with the larger of each pair indicating the preferred pole.

Psychological type is determined by the combination of the four preferences on the four scales. There are sixteen combinations of preferences possible and each combination forms a different psychological type (Myers, 1962; McCaulley, 1977; Carlyn, 1977, Dietl, 1981).

Myers (1962) reported that "...the indices of EI, SN, and TF are virtually independent of each other; however, JP correlates consistently with SN, Intuitives being more frequent among Perceptives than would be expected by chance." This finding was confirmed by Stricker and Ross (1963) and Webb (1964).

Reliability of the MBTI

Researchers have used various methods to estimate the reliability of continuous scores of the MBTI. Myers (1962) developed a split-half procedure involving Pearson Product-Moment Correlations; Webb (1964) used a split-half procedure similar to Myers' method; Stricker and Ross (1963) used Cronbach's Co-efficient Alpha. The three procedures have produced similar results with coefficients ranging from .76 to .82 (E-I), .75 to .87 (S-N), .69 to .86 (T-F), and .80 to .84 (J-P).

Validity of the MBTI

The validity of the Myers/Briggs Type Indicator is dependent on how well it measures the theoretical constructs of Jung's typology.

Content Validity of the MBTI was obtained by Bradway (1964) in a study involving 28 Jungian analysts. In this study there was 100 percent agreement on the E - I classification, 68 percent agreement on S - N classification, 61 percent agreement on T - F classification, and 43 percent agreement on all three dimensions (Carlyn, 1977). Content validity of the MBTI also was examined by Stricker and Ross (1963) by comparing it to the Gray-Wheelwright Psychological Type Questionnaire. This questionnaire, like the MBTI, was designed to measure the Jungian types (Myers, 1962; Carlyn, 1977; Dietl, 1981).

A number of researchers have conducted studies to determine if there is a correlation between MBTI scores and other personality tests. The purpose of these studies was to determine whether the types as identified by MBTI described themselves in consistent ways. The MBTI was correlated with the Strong Vocational Interest Blank, Allport-Vernon-Lindzey Study of Values, Edward's Personal Preference Schedule, and the Personality Research Inventory. In each case, it was demonstrated that Jungian types, as identified by the MBTI, do indeed describe themselves in consistent ways (Myers, 1962; Carlyn, 1977; Dietl, 1981).

Structured and Ambiguous Task

It was the intent of the researcher for this study to duplicate the structured and ambiguous task used in validating and extending Fiedler's (1967) contingency model as closely as possible. Therefore, not only were similar tasks used in this study, but also a similar process of collecting the data and determining effectiveness of each group. For more information on how the contingency model was

validated and extended, one might refer to Fiedler, 1967, 1971; Mitchel, 1969; Graen et al., 1971; and Skrzypek, 1969.

The structured and ambiguous tasks selected for this study were similar in nature to the structured and ambiguous tasks used by Fiedler (1967, 1971) and Mitchel (1969) in validating and extending the contingency model. Mitchel (1969), in a study of a church leadership group, used finding the shortest route for (1) a school bus, and (b) a cross-country road race as the Structured Task. The Ambiguous Task for this study was to write a position paper on the church's stand on (a) legalizing abortion, and (b) a "Black Caucus" within the church. Fiedler (1967), in the Belgian Navy studies, used the routing of ships as a Structured Task and a recruiting letter for boys sixteen to seventeen years of age urging them to enlist in the Belgian Navy as an Ambiguous Task. It was in this study that Fiedler described the dividing of materials to all team members to insure their participation in the Structured Task. Effectiveness of this task was determined by time on task and shortest route. Fiedler also used the routing of a truck convoy as a Structured Task and the writing of a recruiting statement inviting college students to become junior executives as an Ambiguous Task in an executive development workshop (Fiedler, 1967, 1971; Mitchel, 1969).

Structured Task

The Structured Task for this study was to develop one city and one rural school bus route for both elementary and secondary students. To assure that all members of the task team interacted while working on the problem, the materials for performing the task were presented on three different sheets. One member received a

school district map on which the routes were to be drawn; a second member received the student list, including the grade levels and addresses of the students with the starting and dismissal times of each school. The third team member received a list of school bus regulations including the maximum student capacity for each bus used in the project.

Efficiency and effectiveness of each task team's completed project was determined by the actual time on task and the total distance in miles of the combined bus routes. Areas of the structured task and the method used to assign a score to each were as follows:

1. Time on task: Since a structured task is one that can be clearly specified, verified, and programmed with the leader and followers knowing exactly what each is to do to complete the task, it was necessary to give explicit directions before the teams started to complete the task. Each team member was given his/her structured task component along with the written directions for completion of the task. After each member read the directions for completion of the task, the researcher explained the directions. This precaution was taken to assure that both visual and auditory learners had an equal opportunity to understand the task. The researcher then asked each team member if there were any questions. All questions were answered until each team member stated s/he understood the task and was ready to begin.

A target completion time of thirty (30) minutes was assigned to this task. The purpose of setting a completion time was to duplicate Fiedler's (1967) study as closely as possible and to further verify

the task. Each team's score on this task became their time in minutes needed to complete the task. The researcher recorded the time by starting the clock on a signal to begin and stopping the clock when the team leader (superintendent) indicated the task was completed. A team completing the task in thirty (30) minutes then earned a score of thirty (30), while a team completing the task in twenty (20) minutes earned a score of twenty (20). This process of recording the time and consequent score was followed for each team.

2. Shortest Route for Bus A and B: Once each team completed the structured task, the school bus maps were collected and each team's total mileage for Bus A and Bus B was calculated and totaled. The score on this sub-test of the structured task was the total miles for the two busses. A team with a route of thirty (30) miles for Bus A and twenty (20) miles for Bus B earned a score of 50 for this sub-test. This process of assigning scores for this sub-test was repeated for each team.

By definition the solutions to structured task are limited. In this study, those limitations were time on task and the shortest bus route measured in miles. Therefore, the researcher did not find it necessary to utilize the entire panel of judges to determine effective performance. However, in order to provide a system of checks and balances, the researcher calculated points for time and the shortest route, and calculations were checked by one of the judges.

Ambiguous Task

The Ambiguous Task for this study was to have each task team prepare a position paper based on a case study. The topic of the

case study was the performance of a tenured teacher with marginal performance evaluations. Each task team was asked to read the case and come to a consensus as to its recommendation to renew or non-renew the teacher's contract. Once consensus was reached, the team prepared a position paper stating its recommendation and the defense of that recommendation. This task was designed to parallel actual decisions that the participants in the study made each year concerning employment of personnel.

An ambiguous task by definition is one in which the task itself is not clearly specified or verified. Furthermore, there are no clear-cut solutions to the problem presented, and a multiplicity of approaches makes definite action of the group leader difficult. The ambiguous task provided some unique difficulties for the researcher. The first of these was in devising a method of giving instructions to the task team. A second problem was to ascertain how effectiveness was to be determined.

The following procedure was devised for resolving the problems presented by the ambiguous task:

1. The researcher and superintendent of each participating team agreed upon a date and time when the researcher could meet with the team and collect the data.

2. On the day of the study, directions for the ambiguous task were given to the superintendent. S/he was asked to convey the following directions to the team:

It is the task of this team to read a case study and to write a position paper. The paper will state our position on the employment of a tenured teacher and the defense of that position. The paper should be of sufficient length with the necessary specificity and clarity that an

independent panel of judges will agree with this team's decision.

Efficiency of the ambiguous task was measured in the same manner as efficiency of the structured task. Total time on task was recorded as the efficiency score. The time was started after the superintendent of the task team gave the directions. Two times were recorded, one after the team came to a consensus agreement, and the final time when the position paper was completed and handed to the researcher. The first time was recorded to determine which type of team came to consensus in the shortest amount of time, and the second time was recorded to determine total score.

To determine the effectiveness of the ambiguous task, a panel of judges was selected to rate the finished product against predetermined standards. A similar procedure was used by Fiedler (1967, 1971) in the Belgian Naval Study and in a training seminar for business executives. Mitchel (1969) also used this technique to determine effectiveness of an ambiguous task in his study of a church leadership group.

A panel of three successful practicing superintendents was selected to participate as judges in the study. The researcher contacted each potential judge, explained the study, and requested his/her help as a judge in the study. As each superintendent agreed to participate in the study, s/he was mailed a copy of the case to be used in the study along with the directions to the task team for the ambiguous task. Since judge interrater reliability was a crucial variable in a study of this nature, it became important to involve judges in the development of the criteria to be used as standards for judging the papers and the procedures used to rate the final position

papers. Therefore, the judges were asked to read the case and submit any changes they thought were necessary to improve the case. They were also asked to submit a list of criteria by which a paper of this topic could be rated. Specifically, they were asked what topics could reasonably be expected to appear in the paper if the task team agreed to renew/non-renew the teacher's contract. Once the researcher received a list of topics from each judge, a joint meeting was held with all judges and the researcher to finalize the criteria to be used in scoring the paper, the weight to be assigned to each, and the process each judge would use in scoring the paper. A joint decision was reached at this meeting that the critical issue for the position paper was not the renewal or non-renewal of the teacher's contract, but the position taken and the defense of that position. Therefore, the two criteria used to judge the paper and the weight given to each were as follows:

1. The Position Statement: This statement should clearly and concisely state the team's recommendation to either renew or non-renew the teacher's contract. This section of the position paper was assigned a weight of ten (10) points.

2. The Defense of the Position: The researcher and judges recognized that the defense of the position to renew or non-renew the teacher's contract would vary according to the position taken by the task team. However, regardless of the position taken, the defense of that position should contain several critical elements in a case of this nature. Those elements are a consideration of the state statutes and local board policies of the district regulating the renewal/non-renewal of tenured teachers' contracts, as well as the

efforts of the administration to improve performance through the performance appraisal process. This section of the position paper was assigned a weight of 90 points.

The researcher of this study realized that the use of a panel of judges to score the ambiguous task relied heavily on their subjective judgment. However, this methodology is an established practice and was used by Fiedler (1967, 1971), Hunt (1967), Hill (1969), Fiedler, O'Brien, and Ilgen (1969), and others in testing and validating the Contingency Model of Leadership Effectiveness (cited in Fiedler, 1971). In order to enhance the study, it was necessary to establish interrater agreement among judges and to statistically verify that agreement. This was accomplished, first, by involving the judges in revising the case and selecting the criteria for rating the paper, and then by training the judges. A training session for judges was conducted at the same meeting in which criteria for judging the position paper were established. In this training session, each judge was asked to rate a position paper on a case similar to the one used in this study. After each judge rated the sample position paper, they were asked to compare their ratings and discuss any difference that existed until a consensus agreement was reached on these ratings. This process was repeated with a second position paper after which the judges agreed they were in consensus on scoring the papers.

Statistical interrater agreement was established by having the judges independently rate the position papers of teams used in a pilot study. The districts and task teams selected and used in the pilot study met all criteria of the study's population. The pilot

study was conducted to test the structured and ambiguous tasks as well as to establish judge interrater agreement. The results of the pilot study were used to further train judges, make adaptations of the described bus routes, refine the method used to give instructions for both the structured and ambiguous task, and the target times allocated to each task.

The pilot study also indicated problems with papers that were handwritten. Judges had some problems reading handwritten papers and admitted that handwriting, as well as punctuation, spelling, and grammar, may have effected the score issued. Research on the effect of handwriting, punctuation, spelling and grammar demonstrates that contrary to instructions given, these factors influence scores on essays. The research on essay tests also indicates that the examiner's acquaintance with and opinion of the learner influences scores (Marshall, Powers, 1969; Scannel, Marshall, 1966; Markham, 1976). Therefore, the researcher and judges decided that all papers would be submitted to the judges without referring to the members of the team or the name of the school district. This would preserve anonymity of the writers. It was also decided that handwritten papers would be typed but not edited for the judges' review. A maximum number of points were discounted for errors of punctuation, spelling, and grammar.

Analysis of the Data

This study required two types of data analysis. One was to determine the reliability of judges' scores of the ambiguous task. The other was to determine if there was a significant difference in the manner in which compatible and complementary teams performed the

structured and ambiguous task.

The statistical procedure used to determine interrater reliability of the judges' scores was analysis of variance with a reliability subprogram. Analysis of Variance "is a statistical method of testing for significant differences between the means of two or more variables" (Popham, Sirotnik, 1973, p. 152). The addition of a reliability factor to the analysis of variance not only permitted the researcher to determine if there was a significant difference that existed among the judges' ratings of the ambiguous task, but also the quantifiable relationships among judges scores.

In determining the reliability for judge interrater agreement, the data were analyzed through the application of the Statistical Package for Social Sciences (SPSS). SPSS contains a variety of parametric and non-parametric program (Nie et al., 1975). One of those programs is Analysis of Variance/Reliability. This program was written by David A. Specht of Monsanto Agricultural Products with the assistance of Thomas A. Bubolz, Iowa State University (Hull/Nie, 1979). Subprogram Reliability may use raw data cases, a correlation matrix or a covariance matrix and through the use of these data, provide a means for evaluating multiple-item additive scales that use recognized coefficients of reliability (Hull/Nie, 1979).

Subprogram Reliability encompasses a large number of differing approaches to reliability definitions and estimations that depend upon some basic assumptions. The assumptions to be considered are essentially statistical, and "It makes no difference whether the measurement process involves judges or raters, assigning scores to objects, or individuals responding to test questions or sample survey

questions" (Hull/Nie, 1979, p. 74). One such statistical assumption is that in any analysis of variance, the error terms have homogeneous variance within each treatment combination. When judges are used to assign a score, there is only one observation per cell so no test of this assumption is possible. The F test for equality of treatment is a robust statistical treatment when variances and covariances are not homogeneous. However, it is not robust if both assumptions are violated because it gives too many false rejections of the null hypothesis. Subprogram Reliability utilizes Hotellings' T-squared test, an exact test of the hypothesis of equal treatment means, when there is only one observation per cell to determine homogeneity of variances and covariances (Hull/Nie, 1979).

Cronbach's alpha and standardized item alpha is one of the reliability analysis models available in subprogram Reliability. Cronbach's alpha is perhaps the most widely used reliability coefficient. Alpha is equivalent to the reliability coefficient Kuder-Richardson 20 when the data are in dichotomous form. Coefficient alpha is a member of the Guttman family of coefficients (λ_3) and has been generated under a broad variety of other theoretical assumptions as well. Alpha is equal to Guttman's split-half coefficient (λ_4) when only two items are calculated. When the parallel model is assumed to be true, coefficient alpha is the maximum estimate of the reliability coefficient. The standardized item alpha is closely related to alpha. Alpha and standardized alpha have the same value when the observation on each item are standardized by dividing them by the standard deviation of the item. The computations performed by this

subprogram are designed to be used where the goal is to assess how reliable a sum or weighted sum across variables is as an estimate of a case's true score (Hull/Nie, 1979).

The major analytical problem of the study was to determine if a significant difference occurred in the performance of compatible and complementary teams on a structured and ambiguous task. Significant, in this case, does not mean important to consequential difference, but whether the difference is indicative of or significant of a true difference between the means of the two populations. The difference that occurs between the populations must be statistically great enough that it could not have occurred by chance alone (Nie et al., 1975). "The t-test is used to determine just how great the difference between two means must be for it to be judged significant, that is a significant departure from difference, which might be expected by chance alone" (Popham/Sirotnik, 1973, p. 124). The statistician, William Seeley Gosset, using the pseudonym "student" designed the "student's t" as a statistic which is generally applicable to a normally distributed random variable where the mean is known or can be assumed and the population variance is estimated (Nie et al., 1975).

The function of the t-test is to test the null hypothesis (H_0) that there is no significant difference that exists between the means of the two groups and is symbolized by $H_0: \bar{X}_1 = \bar{X}_2$. The researcher is typically attempting to reject the null hypothesis ($H_0: \bar{X}_1 = \bar{X}_2$) so that the alternative hypothesis ($H_1: \bar{X}_1 \neq \bar{X}_2$) can be accepted at some level of significance. The significance level is chosen, in this case .05, since sampling is

being used and the decision to accept or reject the null hypothesis cannot be based on absolute certainty. Therefore, the decision is based on probabilities. The significance level ($p > .05$) is the smallest probability that is accepted as reasonable. That is the result if the study is due to chance or sample variability (Popham/Sirotnik, 1973).

The "student's t" shortened to the t-test has several different models available based on the nature of the data. If the data for the study show no positive relationship, that is the study is not using matched pairs or two measures for the same individuals, the data are uncorrelated data and either the "Separate Variance t-model" or the "pooled Variance t-model" is used to analyze the data. The "Pooled Variance t-model may usually be interpreted with more degrees of freedom than the Separate Variance t-model. The greater number of degrees of freedom makes it possible for a smaller t-value to reject the null hypothesis. Consequently, "the Pooled Variance formula is the more powerful test, that is more apt to reject the null hypothesis" (Popham/Sirotnik, 1973, p. 140).

In the present study, a Pooled Variance t-model with a $p > .05$ was used to determine if a significant difference existed in the time required by compatible and complementary teams to perform a structured task. A second Pooled Variance t-test with a $p > .05$ was used to determine if a significant difference existed in the time required by the teams to perform an ambiguous test. Effectiveness of performance of the structured and ambiguous task between the compatible and complementary teams was also determined through the utilization of the Pooled Variance t-test with a significance level

of $p. > .05$. A separate t-test was calculated for both the structured and ambiguous task.

Summary

There are both advantages and disadvantages in a study of this nature where the researcher is present when data are collected. The researcher must be cognizant that both verbal and non-verbal cues can affect results. In this study, the researcher attempted to avoid giving any such cues during the data collection period. The advantage to the study was that through observing and recording the actions and interactions of the participants, additional data were collected. This strategy permitted data collection beyond the scope of the instruments devised for the collection of quantitative data. The additional data in the form of participants' comments and actions provided additional information for the interpretation of the quantitative data collected.

CHAPTER IV
ANALYSIS AND INTERPRETATION OF THE DATA

Introduction

The Myers/Briggs Type Indicator was distributed to superintendents and principals in twenty-five randomly selected school districts in a southwestern state. Administrators in twenty-four districts completed and returned the MBTI's from which ten complementary and fourteen compatible teams were identified. All ten of the complementary and the first ten compatible teams identified were selected to participate in the tasks completion phase of the study.

Each team selected for the study first completed a structured task and then an ambiguous task. To determine if a statistically significant ($p > .05$) difference existed between the mean scores in the time necessary for each team to complete the tasks and the effective performance of the tasks, four separate t-tests were calculated. A separate t-test was calculated for time on structured task, time on ambiguous task, effective performance of the structured task and effective performance of the ambiguous task.

Psychological Types/Management Style of Participants

Compatible teams were identified as those teams in which a majority of the team members had the same Management Tree style and

Psychological Type. Table A1, Appendix A presents the ten compatible teams demonstrating the management style and psychological type of each team member. Complementary teams consisted of members with different management style and psychological types and are presented in Table A2, Appendix A.

Management style and psychological type are a combination of four polarity components. Table 1 reflects data regarding the polarity distribution of participants in this study.

TABLE 1
Psychological Type/Polarity Distribution

<u>Polarity</u>	<u>N</u>	<u>%</u>
Extraversion (E)	26	43
Introversion (I)	34	57
Sensing (S)	46	77
Intuiting (N)	14	23
Thinking (T)	50	83
Feeling (F)	10	17
Judging (J)	49	82
Perceptive (P)	11	18

Psychological Types/Management Styles appearing most frequently in the sample were ESTJ/manager-controller (28%) and ISTJ/organizer-controller (23%). Thirty-one (51%) of the participants appeared in these two categories. This finding was congruent with Von Fang's (1961) study of school administrators and Dietl's (1981) study of managers at the Omaha division of American Telephone and Telegraph. The difference found in these two types or styles is the preference for introversion or extraversion as a means of beginning a relationship or the relative interest in the inner world of concepts and ideas or the outer world of people and things.

The selection of introversion and extraversion was fairly equally distributed among the school managers in this sample, with 57 percent selecting introversion and 43 percent selecting extraversion. The task team member's preference for this component of type can effect the interpersonal relations which exist in the team. Therefore, descriptions of this component are provided as substantiating evidence to interpret the personalities of participants in this sample.

Gwaltney/Spalding (1980) describe the person with a preference for introversion as one who is self-motivated and begins a relationship from a strong reference point. The self motivated (introverted) person has a strong internal prospectus of his/her feelings, beliefs, values and attitudes and communicates those both verbally and non-verbally at the beginning of a relationship. Myers (1982) describes the introvert as a person who has a strong inner interest in the world of concepts and ideas, likes quiet for concentration, tends to be careful with details, dislikes sweeping statements, and has some problems communicating.

The extravert is described by Gwaltney/Spalding (1980) as an other motivated person. The other motivated person begins a relationship by getting the reception of others and then reacting to that reception in a like manner. S/he is more relationship oriented and more supportive in maintaining a relationship than the self-motivated (introverted) person. Myers (1982) lists extraverted characteristics as people who like "variety and action, communicate freely and like to have people around" (p. 163).

Public school managers in this sample exhibited a clear

preference for sensing (77%) as a means of perceiving information, thinking (83%) as a means of making decisions, and judging (82%) as a means of organizing and structuring their lives. See Table Number 1, Chapter 4. These findings were congruent with Von Fang's (1961) and Dietl's (1981) studies of managers and similar to Morrison's (1980) and Blaylock's (1983) studies.

Managers in both the public and private sector tend to demonstrate a strong preference for sensing, thinking and judging. Therefore, it seems appropriate to give further consideration to characteristic behavior exhibited by persons with these preferences since they will effect the interpersonal relations in which the manager engages.

The second component of psychological type describes the manner in which information is perceived. Myers describes two methods of perceiving information, intuition and sensing. Intuition is an indirect process in which the unconscious incorporates ideas in to perceptions taken in by the five senses (Myers, 1982). The perception process most often selected by school managers in this study is labeled sensing. In the sensing process people are made aware of their surroundings directly through the five senses (Myers, 1982). Gwaltney/Spalding (1981) label this process choicing and describe it as a means of implementing management decisions. Managers with this preference tend to be very practical and will often lay decisions out for a schedule. Choicing managers do not have to have the best possible option but rather the one that will allow them to complete the task as soon as possible. Myers (1982) describes the sensing manager as one who "likes an established way of

doing things, tends to be precise at work" (p. 164). Managers with a perception preference for sensing use words such as realistic, matter of fact, practical and seeing in their conversations. These are the things which they value. They tend not to value concepts and theories which are not easily related to data collected through the senses (Myers, 1982; Gwaltney, 1984).

Gwaltney/Spalding (1981) and Myers (1962, 1982) label the process by which decisions are made as thinking and feeling. Eight-two percent (82%) of the school managers in this study demonstrated a preference for thinking as a means of making decisions. Decision-making in the thinking mode is a left-brained activity which utilizes binary logic as a means of coming to conclusions. In this step-by-step process of decision making, two items are selected for comparison. One is selected and the other is discarded. A third item is then selected and compared to the selected item until a conclusion is reached. Because of this methodical mental process, thinkers can give a step-by-step description of how they reached a decision. In many cases a paper trail may be in evidence to support the process. When thinkers have to make a decision, they will want time to collect data, organize it, quantify it if possible and deliberate the possibility of several alternative strategies. Consequently, a standard response of the manager who has a preference for the thinking process when asked a question is often, "let me think about it" (Gwaltney, 1984). The thinker is described by Myers (1982) as a person who "is more analytical oriented, ...likes analysis and putting things into logical order, ...tends to decide impersonally sometimes paying

insufficient attention to people's wishes...does not show emotion readily...and tends to be firm-minded" (p. 163).

In this study five superintendents, four elementary principals and one high school principal selected feeling as their decision making process. See Tables A1 and A2, Appendix A. Feeling is a right-brained process in which global thinking occurs. In this process large amounts of information are absorbed and instantaneously compared against past experience to make a decision. This type of decision-making often appears to produce an emotional decision to the thinker (Gwaltney, 1984). The feeler is described by Myers (1982) as being more people-oriented, and will often let decisions be influenced by other people's wishes. The feeler enjoys pleasing people, likes harmony in the organizational setting and tends to make decisions based on personal values.

Differences in the decision-making process is the area which creates the most bias and causes the most interpersonal relations problems. Thinkers see feelers as making impromptu decisions based only on personal considerations. Whereas, feelers view thinkers as impersonal and unable to make decisions in a quick, efficient manner (Gwaltney, 1984).

The last component of psychological type/management tree style is the judgment/active-perception/passive process. The selection of the judgment or active process as a means of interacting with the environment is clearly dominant among managers. Von Fang's (1961) study of Canadian school administrators found that 86 percent of the respondents demonstrated a preference for the judgment (active) process. Judgment (active) was also the preference of managers in

the private sector with Dietl's (1981) study of AT&T managers in the Omaha division, demonstrating that 75 percent of the managers studies were in the judgment (active) category. The findings in this study of a southwestern state's school managers were similar to those reported in the literature. Eighty-two percent (82%) of the participants in this study selected the judgment (active) process as their method of interacting with the environment.

The judgment and perception processes are both used, but cannot be used simultaneously. Most people find one attitude more comfortable than the other and consequently use it more often. The judgment process is used to come to conclusions, the perception process is used to gather data to come to conclusions. People who use the judgment process more frequently have little trouble in deciding that "all the evidence is in, and anything more is irrelevant and immaterial. Conversely, in the perceptive attitude, people shut off judgment. Not all the evidence is in; new developments will occur" (Myers, 1982, p. 9).

People with judgment as the dominant process tend to be satisfied once a conclusion is reached and consequently do not search for new data that would alter the decision. In the bureaucracy these are the "no exception to the rule people." They work best when they plan their work; and in implementing the plan, they want only the essentials to begin their work. Once the implementation of the plan is begun, judging types tend to follow the developed plan disregarding new data that may occur. Their goal is to get the job done as quickly as possible so that they may pursue new activities (Myers, 1982).

The perceptive types may have difficulty stopping perception to make a decision. These are the people who look for the best possible solution to a problem, the people who will say, "That will work--how can we make it better?" In the bureaucracy they see rules and regulations as guidelines, not absolutes. The plan of implementation of a task for perceptive types is only seen as a tentative plan. If new data are presented that may effect the final product, plans are often altered mid-stream. Perceptive types are often found as problem solvers who have trouble with day-to-day routines (Myers, 1982).

Gwaltney/Spalding (1981) labeled this component of management style Intensity, and describes it as the pace the individual sets in accomplishing tasks. In the Management Tree it is found as one of two sub styles labeled active or pensive. The active person is described as one who is very causitive, assertive and enterprising. They have a need for things to occur and are often described as being time oriented and impatient. The pensive person goes through life in a more relaxed manner and tends to be more reflective. They are described as having a more futuristic approach to life, low key, inquiring, patient and less time oriented (Gwaltney/Spalding, 1981).

The majority of team members on most of the compatible teams in this study possessed the combination of sensing, thinking and judgment. Although this combination of type was present on complementary teams, it was not as prevalent. Complementary teams were interspersed with individuals possessing intuition, feeling and perception. The effect of this difference in team composition was the variable studied in the performance of a structured and ambiguous

task by compatible and complementary teams.

Structured Task

The structured task designed for this study was the completion of two bus routes. Performance on the task was determined by the time required to complete the task and the total miles of the routes.

One null hypothesis and its alternative were tested to determine if compatible and complementary task teams performed the structured task differently. The null hypothesis and its alternative were as follows:

H₀1: There is no significant difference at the .05 Alpha level of significance in the performance of an assigned structured task by either superordinate/subordinate teams consisting of compatible (similar) psychological types of superordinate/subordinate teams consisting of complementary (different) psychological types.

H₁1: Superordinate/subordinate task teams consisting of compatible psychological types perform structured tasks more efficiently and effectively than superordinate/subordinate task teams consisting of complementary psychological types.

The assumption was made that since the majority of compatible team members possessed the same orientation to life, methods of perceiving information and making decisions, they would individually perceive the information in the same manner and come to similar conclusions. Consequently, team consensus would be reached with a minimum of team interaction. The converse of this assumption was made for complementary teams. Team consensus would be more time

consuming, because individual team members had different orientations to life, methods of perceiving information and making decisions.

Analysis of Structured Task Data

Analysis of the data revealed that the mean scores of the compatible and complementary teams were 38.8 and 47.4, respectively, in the time required to perform the structured task. There was no statistically significant difference at the .05 level. See Tables 2 and 3.

There was no statistically significant difference at the .05 level between compatible and complementary teams' effective performance of the structured task. The mean effectiveness score for compatible teams was 176 and complementary teams 178.3. See Tables 4 and 5.

TABLE 2

Efficiency on Structured Task

Complementary Teams		Compatible Teams	
Team #	Time in Minutes	Team #	Time in Minutes
1	69	2	34
3	36	4	43
5	37	6	50
7	39	8	37
9	41	10	32
11	53	12	35
13	40	14	37
15	46	16	33
17	68	18	52
19	45	20	35
Minimum	36		32
Maximum	69		52
Mean	47.4		38.8

TABLE 3

Comparison of Compatible and Complementary Teams'
Mean Scores Regarding Time Required to
Perform the Structured Task

Compatible			Complementary			DF	T Value	T Probability
N	\bar{X}	SD	N	\bar{X}	SD			
10	38.8	7.115	10	47.4	12.176	18	1.9284	.0697

TABLE 4

Effectiveness on Structured Task

Complementary Teams		Compatible Teams	
Team #	Total Miles	Team #	Total Miles
1	179	2	187
3	181	4	179
5	186	6	179
7	175	8	176
9	178	10	162
11	172	12	178
13	171	14	177
15	180	16	169
17	175	18	172
19	186	20	181
Minimum	171		162
Maximum	186		187
Mean	178.3		176.0

TABLE 5
Comparison of Compatible and Complementary Teams'
Mean Scores on the Effective Performance
of the Structured Task

Compatible			Complementary			DF	T Value	T Probability
N	\bar{X}	SD	N	\bar{X}	SD			
10	176.0	6.912	10	178.3	5.208	18	.8404	.4117

The t-test utilized to determine significant difference in team performance was not significant beyond the .05 alpha level of significance in either efficient or effective performance of the task. With an observed t-probability of .0697 on efficient performance of the structured task and a t-probability of .4117 on effective performance, the null hypothesis (H_0) was accepted and the alternative hypothesis (H_1) was rejected.

Researcher Observations

It should be noted that compatible team number 10, with the low score of 162 miles, was innovative in its approach to completing the structured task. This team routed a bus to load it to capacity and pass the elementary school where it unloaded elementary students then continued the route to pick up middle and high school students. Further observation of compatible team number 10 revealed that it completed the task in 32 minutes, the low score for completion of the structured task. This task team was the only team in which two of its members had the Management Tree Style Innovator/Theorist-Futurist (INTJ). The third member's style was Organizer/Controller (ISTJ).

Therefore, all three team members possessed the same orientation to life (I), decision making process (T), and method of interacting with the environment (J). No determination can be made whether this unique combination of style contributed to successful performance of the structured task or whether performance was determined by chance alone.

Complementary teams numbered 3, 5, and 7 completed the task in 36, 37, and 39 minutes, a mean of 37.3 minutes which was comparable to the compatible teams (38.8 minutes) mean score. Further analysis of psychological type composition of the three teams and notes made by the researcher revealed information that may account for these scores. The superintendent of all three teams made decisions in the feeling mode. Feelers need less time to make decisions than thinkers. Furthermore, the researcher observed and made note of a close personal bond between these superintendents and their principals. Two of the three employed the principals and had worked with them for an extended period of time. Adversity in the school system of the third team provided this team the opportunity to build strong interpersonal relations. The longevity and adversity may have caused these teams to build a stronger trust system and consequent stronger interpersonal relations which could affect task accomplishment on a structured task.

Interpretation of the Data

In the process of interpreting the data revealed by the structured task, two factors must be considered. The first of these was the nature of the structured task. In the performance of a structured task directions to task performance are clearly specified,

verified and programmed in a step-by-step manner. Consequently, alternate solutions to task performance are limited and expectations of similar performance results by different groups are predictable. The results of compatible and complementary teams' performance of the structured task in this study verified that prediction. The mean difference in the time required by compatible and complementary teams to complete the task was 9.6 minutes. The mean difference between the school bus routes developed by the two teams was 2.3 miles. Neither of these mean differences was statistically significant at the .05 level.

The second factor to consider was the manner in which individuals used the components of psychological type. When interpreting the data provided by the structured task and relating it to the supporting review of the research on psychological type, it seemed plausible to offer an explanation of the similarity of performance by compatible and complementary teams on the structured task. The use of the continua of the four components of psychological type is analogous to right-handedness, left-handedness. The preference indicated by the MBTI is the method people will use if the environment permits them to do so. In a structured task which is clearly delineated, perceptual differences are minimized. The implicit directions toward task accomplishment may indeed force individuals with a perceptual preference for intuition to rely more heavily on their sensing mode for this task.

Decisions are made once information is perceived. One of the major differences between people who make decisions in the thinking and feeling mode is their consideration of others in the decision

making process. Feelers tend to make more personal decisions, thinkers make more impersonal decisions. The structured task in this study did not involve direct personal decisions. The directions to task accomplishment emphasized that effectiveness was measured by distance alone. Task teams were instructed in both the written and verbal directions that criteria such as crossing main highways, travel on unimproved roads, or the time any one student rides the bus were not considered for the study. These directions, in effect, may have removed personal considerations from the task, allowing feelers to rely more heavily on their thinking mode to make this decision. Consequently, it is possible that both perceptual and decision making process differences were minimized to the point that all participants were utilizing the same perceptual and decision-making process.

If this indeed were the case, the following logic sequence applies to the accomplishment of the structured task in this study. The psychological type of all team members was similar in that each participant used his/her sensing and thinking process to resolve the task. When team composition, determined by psychological type similarities and differences of team members, is a factor in determining task accomplishment, this variable was eliminated when all team members used the same perceptual and decision making process. Consequently, if there were no differences in task team composition, then no difference in either efficient or effective performance of the task could be expected to occur. The two types of teams would then perform the task in a similar manner.

Ambiguous Task

The ambiguous task utilized in this study was to have each task team consider a case study, reach consensus of the team's position and defend that position in a paper. Efficient performance was determined by the total time required to complete the task. Total time was subdivided into three components: (1) the time required to study the case and reach consensus of the team's position; (2) the time required to formulate a defense in a position paper; and (3) the total time required to complete the task. Effective performance was determined by the degree to which the team's position was defended in the paper.

To determine if there was a statistically significant difference in the efficient and effective performance of compatible and complementary teams on ambiguous task, one null hypothesis and two alternative hypotheses were tested. These were as follows:

- H₀2: There is no significant difference, at the .05 Alpha level of significance, in the performance of an assigned ambiguous task by either superordinate/subordinate teams consisting of compatible (similar) psychological types or superordinate/subordinate teams consisting of complementary (different) psychological types.
- H₁2 Superordinate/subordinate task teams consisting of compatible psychological types perform ambiguous tasks more efficiently than superordinate/subordinate task teams consisting of complementary psychological types.
- H₂2: Superordinate/subordinate task teams consisting of complementary psychological types perform ambiguous

tasks more effectively than superordinate/subordinate task teams consisting of compatible psychological types.

Analysis of the Ambiguous Task Data

Analysis of the efficient data of the ambiguous task revealed there was no significant difference in the mean time of compatible and complementary teams in reaching consensus. Compatible teams were able to study the case and reach consensus on the renewal/nonrenewal decision with a mean time of 40.1 minutes. The mean time for complementary teams to complete this phase of the ambiguous task was 50.0 minutes. A comparison of means for compatible and complementary teams using a t-test produced a t-value of 1.5933 and t-probability of .1285. Considering significant difference at the .05 level, no statistically significant difference was observed in the time required by compatible and complementary teams in this study to reach consensus on the renewal/nonrenewal decision.

The second phase of the ambiguous task was completed once consensus was reached by each team. In this phase of the task, each team was required to formulate a defense of their decision and to write a position paper in such a manner that a panel of independent judges scoring the papers would concur with their decision. A statistically significant difference was observed in the time required by compatible and complementary teams to complete this phase of the task. Compatible teams completed this phase of the task with a mean time of 11.4 minutes while a mean time of 21.6 minutes was required by complementary teams. This mean difference was significant at the .0034 Alpha level.

Alternative hypothesis H_{12} considered the total time required

by each type of team to complete the ambiguous task. Comparison of compatible (51.5 minutes) and complementary (71.6 minutes) mean scores on the total time required to complete the ambiguous task revealed that compatible teams required significantly less time to complete the task than did complementary teams. This difference was significant at the .0078 alpha level. Therefore, alternate hypothesis H₁₂ was accepted. Tables 6, 7, 8, and 9 reflect efficiency data on phases of the ambiguous task as well as the completed task.

TABLE 6
Efficiency on Ambiguous Task

Complementary Teams				Compatible Teams			
Team #	Consensus	Defense Formulation	Total Time	Team #	Consensus	Defense Formulation	Total Time
1	46	36	82	2	51	8	59
3	57	27	84	4	27	24	51
5	69	20	89	6	60	11	71
7	39	20	59	8	39	12	51
9	68	18	86	10	29	8	37
11	52	23	75	12	52	6	58
13	30	7	37	14	20	14	34
15	35	17	52	16	23	12	35
17	57	26	83	18	56	3	59
19	47	22	69	20	44	16	60
Minimum Score	30	7	37		20	3	34
Maximum Score	69	36	89		60	24	71
Mean	50.0	21.6	71.6		40.1	11.4	51.5

TABLE 7

Comparison of Compatible and Complementary Teams'
Mean Scores on the Time Required to Reach Consensus

Compatible			Complementary			DF	T Value	T Probability
N	\bar{X}	SD	N	\bar{X}	SD			
10	40.1	14.594	10	50.0	13.157	18	1.5933	.1285

TABLE 8

Comparison of Compatible and Complementary Teams'
Mean Scores on the Time Required by Each Team
to Formulate a Defense of Its Position
and Write the Position Paper

Compatible			Complementary			DF	T Value	T Probability
N	\bar{X}	SD	N	\bar{X}	SD			
10	11.4	5.873	10	21.6	7.531	18	3.3776	.0034

TABLE 9

Comparison of Compatible and Complementary Teams'
Mean Scores on the Total Time Required by Each
Team to Complete the Ambiguous Task

Compatible			Complementary			DF	T Value	T Probability
N	\bar{X}	SD	N	\bar{X}	SD			
10	51.5	12.457	10	71.6	17.193	18	2.9938	.0078

The second criterion established to determine performance on the ambiguous task was effectiveness. The objective in the ambiguous task of this study was to state the team's position on a contract renewal/nonrenewal issue and to defend that position in a paper in such a manner that three independent judges would concur with the team's decision. Effective performance was determined by the judges rating the position paper written by each compatible task team and each complementary task team. The method of using judges to rate papers and, consequently, determine effective performance of the ambiguous task was utilized by Fiedler (1967, 1972) in validating and extending the Contingency Model of Leadership Effectiveness. This process of determining effectiveness of an ambiguous task is an acceptable practice when judge interrater reliability is established.

Interrater reliability was established when judges rated papers written for the pilot of this study. Analysis of Variance/Reliability, SPSS subprogram, was used to determine reliability of those scores and produce a Cronbach Reliability Coefficient of Alpha .8647. Interrater reliability was confirmed by the same process for the position papers written by compatible and complementary teams using the ambiguous task. The interrater reliability of judges' scores on those papers produced a Cronbach Reliability Coefficient of Alpha .8488. A two-tailed t-test was used to determine statistically significant differences in the effective performance of the ambiguous task by compatible and complementary teams. Comparison of the mean score of compatible teams (112.3) to the mean score of complementary teams (181.2) revealed that complementary teams were significantly more effective than compatible teams in the performance of the

ambiguous task. This difference was significant at the .013 Alpha level. See Tables 10 and 11 for the presentation of ambiguous task data.

TABLE 10
Judge's Scores Ambiguous Task

Complementary					Compatible				
Team	Judge #1	Judge #2	Judge #3	Total	Team	Judge #1	Judge #2	Judge #3	Total
1	48	53	81	182	2	13	16	11	40
3	91	63	73	227	4	78	75	88	241
5	83	35	89	207	6	68	22	64	154
7	76	45	76	197	8	83	52	50	185
9	83	39	50	172	10	45	15	56	116
11	38	19	19	76	12	33	33	56	122
13	77	25	96	198	14	33	24	37	95
15	84	41	88	213	16	27	13	26	66
17	50	51	97	198	18	27	03	30	60
19	36	25	81	142	20	15	06	26	47
Total	666	396	750	1812		422	260	444	1126
Mean	66.6	39.6	75.0	181.2		42.2	26.0	44.4	112.6

TABLE 11
Comparison of Compatible and Complementary Teams'
Mean Scores on Effective Performance
of the Ambiguous Task

Compatible			Complementary			DF	T Value	T Probability
N	\bar{X}	SD	N	\bar{X}	SD			
10	112.3	65.630	10	181.2	43.815	18	2.76	0.013

The statistically significant difference observed in the effective performance of the ambiguous task provided the necessary data to accept alternate hypothesis H₂.

Researcher Observations

The assumption was made, based on the literature of psychological type, that the major time difference required by compatible and complementary teams in the performance of the ambiguous task would be in reaching consensus on the renewal/nonrenewal contract decision presented in the case study. However, researcher observations and recorded notes indicated it was difficult to determine actual consensus. The task was designed to allow each participant to study the case, followed by discussion that would lead to agreement and a team decision. Varying times required by participants to study the case, comments concerning the case, and discussion before all participants completed studying the case distorted the recorded time. The researcher observed that some teams reached consensus and discussed other related and non-related subjects prior to notifying the researcher of consensus. In other teams the researcher was notified of consensus and recorded the time. A team member would then make an additional point regarding the case and discussion would then continue for varying periods of time.

Researcher observations also revealed that once consensus was reached by compatible teams, the course of action became clear, and these teams completed the task with little discussion. The converse appeared to occur for complementary teams in that consensus and strategy were two separate and distinct decisions which required

further discussion. Observation of the individual psychological type composition of compatible teams revealed a clear dominance of sensing/thinking individuals, a combination of perception and decision making processes that would limit further discussion and move more quickly to a course of action. The composition of complementary teams were more heavily influenced by individuals with a preference for Intuition and Feeling as perceptual and decision making processes. The perceptual and decision making process difference present in complementary teams would account for more discussion and consequent time required to complete this phase of the task. The presence of Intuitives influenced teams to reexamine the data because of their tendency to believe all the evidence is not in--new evidence can affect the decision. The presence of Feelers on complementary teams influenced the teams to discuss personal considerations. This was crucial to Feelers who tend to make decisions based on personal considerations as opposed to the impersonal decision making process of the Thinkers. This influence was more frequent in the ambiguous task than in the structured task because of the highly personal nature of the task to renew or nonrenew a teacher's contract.

Interpretation of the Data

Whereas the nature of the structured task may have limited individual participants from using both ends of the continuum of the four components of psychological type, the ambiguous task may have had the opposite effect. In an ambiguous task there are no clear-cut solutions and a multiplicity of approaches make definite action of the group difficult. The nature of the ambiguous task lends itself

to resolution by allowing individuals to utilize the perceptual and decision making process they prefer. Compatible teams consisted of team members with perceptual and decision making similarities. Complementary teams consisted of team members with a greater degree of perceptual and decision making differences. Because of these differences, complementary teams were able to view the case study from a varied perceptual process, revealing data to the entire team which may have been overlooked or did not seem relevant to other team members. The additional data provided a variety of alternatives to be considered in the decision making process. In addition to data available through perceptual differences, complementary teams may have been affected in developing a strategy through the variety of decision making processes present in those teams. The comparative influx of decision making Feelers presented complementary teams the advantage of personal considerations in determining alternative solutions to the case. This advantage was not as readily available to compatible teams which were dominated by Thinkers who tend to make impersonal decisions. The presence of a variety of data and alternative solutions allowed complementary teams to write position papers that gave judges the type of information necessary to concur with the decisions of complementary teams to a greater extent than with compatible teams. Consequently, complementary teams were awarded higher scores which led to a significant difference in their effective performance of the ambiguous task.

Summary

Quantifiable data were found in this study to allow alternate hypothesis H_1 to be rejected and null hypothesis H_0 to be

accepted. Null hypothesis H_{01} stated there would be no statistically significant difference in the performance of a structured task by either compatible or complementary teams. The statistically significant difference in effective performance by complementary teams combined with the statistically significant difference in efficient performance by compatible teams allowed alternate hypothesis H_{12} and H_{22} to be accepted. Acceptance of the alternate hypothesis allowed the null hypothesis H_{02} to be rejected.

Interpretation of the data based on researcher observations and relating those observations to the review of literature of psychological types relies heavily on the intuitive process of the researcher. Consequently, these interpretations are certainly open to further discussion and debate.

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

The importance of interpersonal relations and task structure in predicting efficient and effective task team accomplishment has been established by both the small group and contingency theorists. Small group theorists have suggested interpersonal relations can be predicted using personality scales usually consisting of a one-scale continuum. One-scale personality measures do not appear to provide adequate personality profiles to predict interpersonal relations with regard to task accomplishment except in extreme cases.

Contingency theorists have attempted to make predictions of group performance based on the leader's style stated in terms of Initiating Structure and Consideration. Considerable contingency theory literature centers on Fiedler's (1967) Contingency Model of Leadership Effectiveness which utilizes the Least Preferred Co-worker (LPC) Scale as a measure of the leader's style, stated in terms of Initiating Structure and Consideration. The LPC-Scale is surrounded with controversy concerning the methodological rigor and objectivity of the scale. Consequently, many researchers conclude their reports with suggestions to revise the LPC Scale or to search for other measures of interpersonal relations.

This study abandoned the LPC Scale and its consequent identification of style as one of Initiating Structure and Consideration as a measure of predicting interpersonal relations. The study also abandoned one-scale measures of personality, opting for a measure that would identify several facets of personality considered in the literature as important variables in determining interpersonal relations.

Jung's theory of psychological type recognizes that personality is a complex structure consisting of a variety of personality components and that interactions among those components are intricate and involved. The MBTI, which was used in this study to predict interpersonal relations, is an instrument devised to indicate a person's preference for the components of personality described by Jung. Psychological Types and Management Tree Styles derived from the MBTI, provide descriptions of the components as well as predictable characteristic behaviors exhibited by individuals when the components are combined. The blending of personality into harmonious interpersonal relations is a complex issue that must consider each member of the task team's orientation to life, method of perceiving information, and making decisions about what has been perceived.

Contingency theorists have identified two types of tasks, structured and ambiguous, and have made predictions concerning leadership style and effective accomplishment of the two types of tasks. This study also considered structured and ambiguous tasks as important variables and made predictions concerning the psychological type of task team members and effective accomplishment of the two

types of tasks. The two research questions investigated in this study were as follows:

1. Do superordinate/subordinate task teams consisting of compatible (similar) psychological types perform structured tasks more efficiently and effectively than teams consisting of complementary (different) psychological types?
2. Do superordinate/subordinate task teams consisting of compatible (similar) psychological types perform ambiguous tasks more efficiently and effectively than teams consisting of complementary (different) psychological types?

Conclusions

The research questions investigated in this study led to the development of two null hypotheses and their respective alternate hypotheses. The first null hypothesis and its respective alternate hypothesis tested pertained to task team accomplishment of the structured task. The second null hypothesis and its two alternate hypotheses pertained to task team accomplishment of the ambiguous task.

The null hypothesis and its alternate hypothesis tested for task team accomplishment of the structured task are as follows:

- H₀₁: There is no significant difference at the .05 alpha level of significance in the performance of an assigned structured task by either superordinate/subordinate teams consisting of compatible (similar) psychological types or superordinate/subordinate teams consisting of complementary (different) psychological types.

H₁₁: Superordinate/subordinate task teams consisting of compatible psychological types perform structured tasks more efficiently and effectively than superordinate/subordinate task teams consisting of complementary types.

The results of the data derived from the structured task allowed the alternate hypothesis to be rejected and the null hypothesis to be accepted. The acceptance of the null hypothesis in this study permits the conclusion that compatible task teams consisting of members with similar psychological types are neither more efficient nor effective than complementary teams consisting of members with different psychological types in the performance of a structured task. It would appear that in the formulation of a task team to perform structured tasks that psychological type of team members is not a variable that will affect performance of the task team.

A second null hypothesis and two alternate hypotheses were tested to determine if there was a statistically significant difference in the performance of compatible and complementary task teams performing ambiguous tasks. These are as follows:

H₀₂: There is no significant difference, at the .05 Alpha level of significance, in the performance of an assigned ambiguous task by either superordinate/subordinate teams consisting of compatible (similar) psychological types or superordinate/subordinate teams consisting of complementary (different) psychological types.

H₁₂: Superordinate/subordinate task teams consisting of compatible psychological types perform ambiguous tasks

more efficiently than superordinate/subordinate task teams consisting of complementary psychological types.

H₂: Superordinate/subordinate task teams consisting of complementary psychological types perform ambiguous tasks more effectively than superordinate/subordinate task teams consisting of compatible psychological types.

The data derived from testing of the alternate hypotheses of the ambiguous task allowed both alternate hypothesis H₁ and H₂ to be accepted. The acceptance of both alternate hypotheses allowed null hypothesis H₀ to be rejected. The acceptance of alternate hypothesis H₁ permits the conclusion that compatible task teams are significantly more efficient than complementary teams in the performance of an ambiguous task. Acceptance of alternate hypothesis H₂ permits the conclusion that complementary task teams are significantly more effective than compatible teams in the performance of the ambiguous task.

Psychological type of task team members does affect the performance of the team when performing an ambiguous task. Therefore, when selecting members for a task team to perform an ambiguous task, the decision to be considered is: what is of more value to the organization--efficiency or effectiveness for this particular task?

Implications

Management implications derived from this study are divided into two categories. The first are implications for managers of task teams when the task to be performed is structured and the second are implications when the task is ambiguous in nature.

Structured Task

When the task performed by a task team is structured to the degree that the task is clearly specified, verified, and programmed in a step-by-step manner, psychological type of task team members does not effect either efficient or effective performance of the task by the team. Therefore, the manager may allocate his/her efforts toward other factors that may facilitate task accomplishment. These may include, but are not limited to, providing the resources necessary for task accomplishment including time, equipment, and materials, and providing additional information in the form of task clarification or additional training when technical competency of a group member is lacking in some area.

Ambiguous Task

The implication for managers of task teams performing ambiguous tasks is that the psychological type of the task team members can affect accomplishment of the task. This study has demonstrated that task teams composed of members of different psychological types perform ambiguous tasks more effectively than task teams composed of members of similar psychological types. The study also demonstrated the converse of this statement is apparent. Compatible teams perform ambiguous tasks more efficiently than complementary teams.

The contingency theorists stress the importance of interpersonal relations of group members in task accomplishment. They also contend that the manager influences group performance by adjusting his/her management style to match the task to be accomplished and the team member attributes. This study implies that total team interaction and not just the follower's reaction to the manager influences team

performance. That, indeed, team performance is not only contingent upon the type of task to be performed, and the environment in which it is performed, but also by the personality characteristics of perception and decision making differences each member brings to the team. It is incumbent upon the team manager to understand how these similarities and differences can and do affect team performance on the ambiguous task.

The understanding of how personality characteristics of both managers and subordinates affect interpersonal relations becomes increasingly important in today's society. In an attempt to increase organizational efficiency and effectiveness, recent trends in management literature and practices call for increasing employee involvement in the decision making process. Governmental guidelines and court decisions also call for increased interactions between management and subordinates in the performance appraisal process before making termination decisions. There are indications that not only is the role of managers and subordinates changing in today's society, but the role of the organization is also changing. Naisbitt (1985) in Re-inventing the Corporation: Transforming Your Job and Your Company For the New Information Society identifies economic necessity and new values as two elements which are causing organizational change. Naisbitt (1985) states:

The realm of creativity is one place where few business people feel competent, even comfortable. In this society, we think creativity is for the scientist, the artist, or the musical genius, not the typical corporate manager. But in the new information-rich decentralized, global society, creativity will be increasingly valued in business. Creativity is the corporation's edge (p. 136).

The implication for management to increase communications with its employees and to be creative does not imply making decisions quickly (efficiently). The implication is that organizations will become more efficient as the result of effective decisions. Thus, organizational efficiency becomes a product of effective decisions made by management.

This study has implications for involvement of the employee in a creative environment and for increasing effective management decisions. Discovering the right market niche, redesigning the organizational chart or utilizing the available resources for greater productivity are an ambiguous task.

The utilization of resources is not limited to dollars or materials but also human resources. The management team which capitalizes on the differences in its human resources, instead of allowing these differences to break down into useless conflict, can enhance the position of the organization by increasing its creativity and effectiveness. The manager of the creative task team must establish an environment in which there is an understanding and acceptance of member personality differences. In this task team there is mutual acceptance between the team members who have a perceptual preference for Sensing and Intuition. Sensors bring to the team the ability to be precise, discover pertinent details, and lay decisions out for a schedule. Intuitives react to the data and look for the best possible options, and have an inner drive to not only accomplish the task but to do it in the most creative and innovative way possible. There is also mutual acceptance between the decision

makers who are Feelers and Thinkers. Feelers who make global, right-brained decisions and are driven by personal decisions will accept and be accepted by the left-brained Thinkers who need time to use binary logic to make decisions and will tend to make impersonal decisions.

This study does not imply nor does it intend to imply that psychological type of team members is the only variable that affects task team accomplishment. It is only one variable among many that must be considered in the search for improving the efficiency and effectiveness of organizations.

Recommendations for Further Study

This study sought to investigate the efficiency and effectiveness of compatible and complementary school management teams performing structured and ambiguous tasks. If this study were repeated and similar results were obtained, the assumption that personality similarities or differences do not affect task team performance on a structured task but do affect performance of an ambiguous task could be validated.

The following recommendations are made for repeated studies:

1. Alter the order of performance of the structured and ambiguous task having task teams perform the ambiguous task first then the structured task.
2. Alter the structured and ambiguous tasks used in this study while maintaining the definition standards for the tasks found in the literature.

3. Repeat the study in the private sector of business or industry.
4. Utilize a different multi-scaled personality assessment instrument.

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APPENDIX A

TABLE A1
Compatible Teams
Psychological Types/Management Tree Styles

		MBTI	Management Tree Style Sub Style
Team #2	Supt HSP Elem P	ESTJ ISTJ ISTJ	Manager-Controller Organizer-Controller Organizer Controller
Team #4	Supt JrHP Elem P	ESTP ESTJ ISFJ	Manager-Inf Manager Manager-Controller Producer-Entrepreneur
Team #6	Supt HSP Elem P	INTJ ESTJ ESTJ	Innovator-Theorists-Futurists Manager-Controller Manager-Controller
Team #8	Supt HSP Elem P	ESTJ ESTJ ESTJ	Manager-Controller Manager-Controller Manager-Controller
Team #10	Supt MSP Elem P	INTJ INTJ ISTJ	Innovator-Theorists-Futurists Innovator-Theorists-Futurists Organizer-Controller
Team #12	Supt HSP JrHP	ISTJ ISTJ ISTJ	Organizer-Controller Organizer-Controller Organizer-Controller
Team #14	Supt HSP Elem P	ISFJ ISTJ ISTJ	Producer-Entrepreneur Organizer-Controller Organizer-Controller
Team #16	Supt HSP Elem P	ESTP ISTJ ISTJ	Manager-Inf Manager Organizer-Controller Organizer-Controller
Team #18	Supt MSP Elem P	ESTJ ESTJ ESTJ	Presenter-Instructor Presenter-Instructor Presenter-Instructor
Team #20	Supt HSP Elem P	ISTJ ISTJ ESTJ	Organizer-Controller Organizer-Controller Manager-Controller

TABLE A2
Complementary Teams
Psychological Types/Management Tree Styles

		MBTI	Management Tree	
			Style	Sub Style
Team #1	Supt HSP Elem P	ISFJ INTJ ESTJ	Producer-Entrepreneur Innovator-Theorist-Futurist Manager-Coordinator	
Team #3	Supt HSP Elem	ENFP ISFJ ISTJ	Communicator-Artist Host Producer-Entrepreneur Organizer-Controller	
Team #5	Supt HSP Elem P	ISFP ISTJ ENTJ	Producer-Trouble Shooter Organizer-Controller Presenter-Instructor	
Team #7	Supt HSP Elem P	ESFJ INTJ ISTP	Counselor-Advisor Innovator-Theorists-Futurists Organizer-Inf. Manager	
Team #9	Supt HSP Elem P	INTP ESTJ ENFJ	Innovator-Researcher Presenter-Instructor Communicator-Reformer	
Team #11	Supt HSP Elem P	ISTJ ESTP ISFJ	Organizer-Controller Manager-Inf. Manager Producer-Entrepreneur	
Team #13	Supt HSP Elem P	INTJ ENTJ ISTP	Innovator-Theorist-Futurists Presenter-Instructor Organizer-Inf. Manager	
Team #15	Supt HSP Elem P	ENTJ ISTP ESTJ	Presenter-Instructor Organizer-Inf. Manager Manager-Controller	
Team #17	Supt HSP Elem P	ENTJ ISTJ ESFP	Presenter-Instructor Organizer-Controller Counselor-Listener	
Team #19	Supt HSP Elem P	ISTP ESTJ INTJ	Organizer-Inf. Manager Manager-Controller Innovator-Theorists-Futurists	

TABLE A3

Number and percentage of participants identified in each psychological type and management tree style category.

<p>ISTJ Organizer/Controller</p> <p>N-14 %23</p>	<p>ISFJ Producer/Entrepreneur</p> <p>N-5 %8</p>	<p>INFJ Reformer/Promotor</p> <p>N-0 %0</p>	<p>INTJ Innovator/Theorists- Futurists</p> <p>N-7 %12</p>
<p>ISTP Organizer/Information- Manager</p> <p>N-4 %7</p>	<p>ISFP Producer/Trouble- Shooter</p> <p>N-1 %2</p>	<p>INFP Reformer/Planner</p> <p>N-0 %0</p>	<p>INTP Innovator/Researcher</p> <p>N-1 %2</p>
<p>ESTP Manager/Information Manager</p> <p>N-3 %5</p>	<p>ESFP Counselor/Listener</p> <p>N-1 %2</p>	<p>ENFP Communicator/Artist- Host</p> <p>N-1 %2</p>	<p>ENTP Presenter/Moderator</p> <p>N-0 %0</p>
<p>ESTJ Manager/Controller</p> <p>N-17 %28</p>	<p>ESFJ Counselor/Advisor</p> <p>N-1 %2</p>	<p>ENFJ Communicator/Reformer</p> <p>N-1 %2</p>	<p>ENTJ Presenter/Instructor</p> <p>N-4 %7</p>