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INTUITION IN DECISION MAKING

A Dissertation

Presented to

**the Faculty of the Department of
Educational Leadership and Policy Analysis
East Tennessee State University**

**In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education**

by

JoAnne Horton

December 1993

APPROVAL

This is to certify that the Graduate Committee of

JOANNE HORTON


met on the

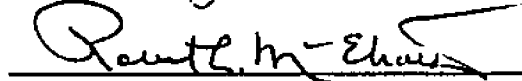
13th day of August, 1993.

The committee read and examined her dissertation, supervised her defense of it in an oral examination, and decided to recommend that her study be submitted to the Graduate Council and the Associate Vice-President for Research and Dean, School of Graduate Studies, in partial fulfillment of the requirements for the degree of Doctor of Education.

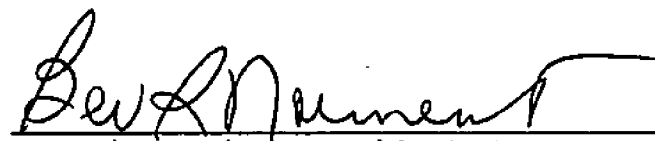


Chairman, Graduate Committee





Signed on behalf of
the Graduate Council



Associate Vice-President for Research
and Dean, School of Graduate Studies

ABSTRACT

INTUITION IN DECISION MAKING

by

JoAnne Horton

This was a two-phase study designed to identify intuitive principals and then to determine if there were common elements of their decision making. The Myers-Briggs Type Indicator was used to identify intuitive principals, and then a sampling of these principals were interviewed. The results showed that the principals with the highest preference scores for intuition differed from the principals with lower preference scores in that they came from supportive environments, were more conscious of using and developing their intuition, drew from experience but combined that with a future orientation, and were more comfortable with risk-taking and change. Recommendations included the suggestion that inservice and preparation programs should include the identification of intuitive thinkers and an environment conducive to the development of intuition.

INSTITUTIONAL REVIEW BOARD APPROVAL

This is to certify that the following study has been filed and approved by the Institutional Review Board of East Tennessee State University.

Title of Grant or Project Intuition in Decision Making

Principal Investigator JoAnne Horton

Department Educational Leadership and Policy Analysis

Date Submitted August 12, 1993

Institutional Review Board, Chairman Anthony J. [Signature]

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Chapter 1

OVERVIEW OF THE STUDY

Introduction

In the 1990s, the question in education is not if we're going to change, but how we're going to change. In every school district, change is either underway or imminent. The number of crisis situations that school leaders face is increasing, and the demand for making the right decision the first time becomes greater with each new indictment of public education. In response to the growing complexity of schools and schooling, the effectiveness of traditionally valued skills of school leaders is being questioned.

Most administrators have been prepared by programs whose curricula are steeped in analytical processes. They are taught logical, sequential steps to planning and problem solving. Most have learned well and can follow accurately the sequential steps to decision making: assess the situation, formulate options, estimate likelihoods of success, make a decision, and implement the necessary action. This type of formal planning, analytical decision making, and sequential problem solving is most effective in a stable environment where time and circumstance allow for unhurried data gathering, deliberation, and analysis (Agor, 1989). The problem is that one could hardly describe the environment in which educators now must make decisions a

stable one. Determining what skills are needed for effective school leadership and which of those skills can be taught continue as topics of research and debate.

Will the technical skills for decision making which have served us well in the past help to set us on a path for the future that will enable us to meet the changing educational needs of students and demands of the public? Is there an untapped resource for decision making? Weston Agor (1988, p. 11) said that his research "indicates the one leadership skill particularly productive to use and develop in this emerging management climate is intuition." Naisbett (1983) noted that using intuition in decision making has gained new respectability in corporate settings. Schon (1983) listed situations where intuition would be most helpful as those where:

1. There is a high level of uncertainty
2. There is little precedent
3. Facts are limited
4. Time is limited and there is pressure to be right
5. Variables are often not scientifically predictable
6. There are several plausible solutions from which to choose, with good arguments for each

Though the research of Agor and Schon is in the area of business management, the situations listed are applicable to the situations in education which we face today. Perhaps,

therein lies the explanation of the increasingly intense look into the role of intuition in decision making.

Problem

The problem of the study is that little is known about how intuition affects the decision making of designated school leaders.

Purpose

The purpose of the study was to determine whether intuition affects decision making of designated school leaders. If so, the purpose was to determine the extent that levels of intuition affect decision making of designated school leaders. Further, the purpose was to determine if there are common factors in the decision-making processes of designated school leaders.

Significance of the Study

As would be true of any organization undergoing change, educators face potentially dangerous situations. How well will school administrators lead during these pressurized, critical times? In making decisions, the risk is great; however, one is reminded of the Chinese symbol for danger-- risk, but also opportunity. Will the technical skills that have served leaders in education well in the past help set us on the right path, or is this the right opportunity for exploring the possibilities of other skills that school

leaders could be developing? Could intuition skills give school leaders the edge needed to minimize the risk and maximize the opportunity?

Some management scientists see intuition as the best human capital resource for creative input or problem solving. The 1980s brought several studies on how top managers think and decide. Schon (1985) noted that "in spite of the increasingly powerful status of management science and technique since World War II, managers have remained persistently aware of important areas of practice which fall outside the bounds of technical rationality" (p. 239). Schon found that it had become commonplace for managers to speak of the "turbulent" environments in which problems do not lend themselves to the techniques of probabilistic reasoning. According to Schon, managers have become increasingly sensitive to the phenomena of uncertainty, change, and uniqueness; and decision under uncertainty has become an art. Managers are often confronted with unique situations to which they must respond under conditions of stress and limited time, which leaves no room for extended calculation or analysis. According to Schon (1985, p. 239), "Here they speak not of technique, but of intuition."

As early as 1938, Chester Barnard spoke of the nonlogical processes, the skillful judgments, decisions and actions we undertake spontaneously without being able to

state the rules or procedure we follow. Lasden (1985) quoted from Arthur Koestler's The Art of Creation as follows:

Rebellion against constraints which are necessary to maintain the order and discipline of conventional thought, but an impediment to the creative leap, is symptomatic both of the genius and the crank. What distinguishes them is the intuitive guidance which only the former enjoys. (p. 104)

Lasden (1985) further stated that intuition is needed "when the pace of change is such that future trends cannot be extrapolated from past experiences, or when there are not enough facts available to make a rational analysis" (p. 100).

Agor (1986) listed the types of situations conducive to intuition decision making as those where:

- there is a high degree of risk
- data may be inadequate
- the course chosen is even in conflict with the direction suggested by the data at hand
- there is a choice between [sic] several plausible options, none of which is clearly favored by available data (p. 29)

School administrators are faced with new and difficult decisions at an increasing rate. They cannot always rely on

experience or on hard data to aid in decision making. Many of the problems they face have no precedent from which to draw. The critical nature of many decisions does not allow for learning from mistakes. The times seem right for a new appreciation for school leaders who will sometimes go beyond the bounds of conventional thinking. We don't always need someone who dots all the i's and crosses all of the t's, especially since we often don't know where or what all the i's and t's are.

We need to think of intuition not as an either/or, but as an "in addition to"--a complement that provides creative insights to more systematic and deductive decision making. Sometimes, intuition is a "Eureka" breakthrough type of process, but it can also feed and stimulate and evaluate the product of rational thought.

One of the enticing things about the subject of intuition in decision making is that it has been researched, debated, and written about but no one has been able to articulate the process involved. What we do know is that top business managers have intuitive skills and they use and value those skills. Agor (1989, p. 112) stated that the higher the position in the organization, the more the job involves conceptual rather than technical skills. Thus, they need to be able to see the big picture. According to Isabel Myers (1991, p. 26), intuitive thinkers offer a conceptual frame of reference to problems. Other

characteristics that she lists are: "the ability to see possibilities, to read the signs of coming change, to focus on preparing for the future, to anticipate trends, to see globally and keep the big picture in mind." According to Agor (1989), research conducted by Charles Ford indicated that "the most profound characteristic which distinguished intuitive decision makers from other executives is their propensity for making high-risk decisions. He does not need to wait on all the hard data; he will not hesitate; he will sense the direction to take and he will act" (p. 113). According to Agor, one of the major characteristics considered when NASA chose its astronauts for the Mercury project was intuition. They knew that situations would come up that would not have some preconceived and practiced solution. They knew that on these occasions, decisions would have to be made quickly and that intuitive skills would help to assure successful decisions. "NASA officials knew intuition is like a parachute. You hope it will not be used, but when all the sophisticated systems cannot help you, it's nice to have around" (Agor, 1989, p. 114).

This same rationale applies to education and its leaders. School leaders need to see the big picture, and there are no tried and true solutions to many of our problems since many of them are specific to the individual school. It may bode well to begin to understand how this "parachute" is constructed and how it might then be engaged

to make some decisions faster and better. If some light can be shed on the process involved and if common elements in the decision-making process of intuitive thinkers can be determined, then that information will be useful in the preparation of future school leaders and the professional development of school leaders who are already in practice.

If the importance of intuition in problem solving can be recognized, we should encourage its development and use. Preservice and inservice preparation programs should develop both ways (intuition and sensing) of taking in and processing information so that solutions are the best that can be made and are workable for even the most complex and demanding problems. We can begin by determining our intuitive score and then by determining the extent to which intuitive thinking is used in decision making. The skills which already exist can begin to be used and further development of those skills can be nurtured. If there are common strands to the decision-making process of intuitive thinkers, that information can be used to establish training protocols for non-intuitive or low-intuitive thinkers.

Assumptions

The following assumptions were considered relevant to this study:

1. There are some school leaders in Tennessee whose scores on the Myers-Briggs Type Indicator (MBTI) place them in either the high, medium, or low score categories.

2. The participants' self-disclosure on the MBTI was honest and their preference scores were an accurate reflection of their true preference.

3. The information gained from interviews reflected truthful accounts of the participants' intuitive skills.

Limitations

The following limitations were relevant to this study:

1. The study was limited to designated Tennessee school leaders on whom the results of the Myers-Briggs Type Indicator were available.

2. The sample was limited by the number of school leaders whose scores indicated a preference for intuition on the Intuition-Sensing (SN) domain of the MBTI.

3. The number of interviews conducted was determined by the number of intuitives at each level (high, mid, and low) who consented to being interviewed.

4. The generated conclusions are descriptive only of the population in this study.

5. The Myers-Briggs Type Indicator is a self-evaluative instrument. It tells about style, not ability or quality of their intuition. It is safe to only assume that N's (intuitives) are more likely to use or develop their intuition.

Research Questions

1. Who, among a designated group of educators and school administrators, had preference scores which placed them in the low, moderate, clear, and very clear preference categories on the intuitive domain of the MBTI?
2. To what extent did those in each category use their intuitive ability in decision making?
3. What was the relationship between the level of intuitive preference score and the extent to which the participant developed those skills?
4. What structure or procedure for enhancing intuitive skills was used by those in each category of intuitive skill on the MBTI?
5. Was the working environment of those who scored as intuitive supportive of intuitive thinking?
6. What were the common elements of the decision-making process of participants who scored as intuitive on the MBTI, and did these elements vary according to level of intuitive preference score?
7. What were the indicators other than scores on the SN domain of the Myers-Briggs Type Indicator that identified those who are intuitive decision makers?

Definitions

Extroversion--The attitude that orients attention and energy to the outer world.

Form G--Form G is the standard form of the MBTI for general use. Form G is comparable to Form F except that it does not have the additional unscored research items found in Form F.

Intuition--One of the two perceptive functions of the MBTI. Intuition attends to meanings, relationships, symbols, and possibilities. The act or faculty of knowing directly without the use of rational processes.

Index--Two letters to refer to one of the four preferences on the MBTI; i.e., EI, SN, TF, or JP.

Introversion--The attitude that orients attention and energy to the inner world.

Judging--A term that refers to the two judging functions: thinking and feeling. Judgment also describes how thinking and feeling appear in observable behavior.

Myers-Briggs Type Indicator (MBTI)--An instrument first developed by Myers and Briggs in the 1940's. It is based on Carl Jung's research which classifies people according to four psychological types. Myers and Briggs extended these four types into 16 basic personality types using four domains: extroversion or introversion (EI), sensing or intuition (SN), thinking or feeling (TF), and judging or perception (JP).

N's--Those whose scores indicate a preference for Intuition on the SN domain of the MBTI.

Perception--A term that refers to the two perceptive functions: sensing and intuition. Perception also describes how sensing and intuition appear in observable behavior.

Sensing--One of the two perceptive functions of the MBTI. Sensing is a function which attends to experiences available to the senses.

Thinking--One of the two judging functions that makes decisions by ordering choices in terms of cause-effect or impersonal logical analysis.

Organization of the Report

The remainder of this report is organized in four chapters.

Chapter 2 is a review of related literature and research. Major areas of research reviewed were: right and left brain research, intuition as a management skill, intuition and decision making, and building intuition in organizations. After analysis of the data was completed, the subject of building intuition in organizations was added as a result of discussion and comments about how one would go about developing intuitive skills.

Chapter 3 is a description of the methodology used in the study. The population and sampling are discussed in detail. A rationale for the two-phase research design and methodology procedures is included.

Chapter 4 presents the data display and an analysis of the data, given first for Phase One of the study, followed by an analysis of the data in Phase Two.

Chapter 5 is a summary of the study. Included is a recap of the findings in Phase One and the implications of the findings to future staff development plans for Tennessee school leaders. Also included is a list of common factors in the decision-making processes of the designated school leaders in Tennessee included in Phase Two of the study. The report concludes with recommendations and implications for future research.

Chapter 2

REVIEW OF LITERATURE

Intuition Defined

Throughout history, intuition has been variously defined as mystical, magical, a gift, a hoax, but more recently as a new storehouse of knowledge. The word "intuition" is derived from the Latin "intueri," meaning "to see within." The dictionary definition is "the act or faculty of knowing directly without the use of rational processes."

Noted psychologist, Carl Jung, included intuition as one of the four basic functions, with thinking, feeling, and sensation. Frances E. Vaughn (1979) referred to intuition as "waking up what we already know . . . and as a way of knowing without getting there in the linear, rational way we normally function" (p. 171). At any one given moment, one is conscious of only a small portion of what one knows. On a more metaphysical note, Vaughn said that intuition allows one to draw on that vast storehouse of unconscious knowledge that includes not only everything that one has experienced or learned, either consciously or subliminally, but also the infinite reservoir of the collective or universal unconscious. Vaughn categorized intuitive experiences into four levels of awareness: physical (associated with bodily sensations), emotional (associated with feelings), mental

(associated with images and ideas), and spiritual (associated with mystical experiences). Rockenstein (1988) defines intuition as "an open channel to universal sources of knowledge and wisdom that transcends the boundaries of time, space, the senses and the logical/ rational mind" (p. 77).

Benderly (1989) quoted the following definition of intuition by Robert Glaser:

At the heart of intuition is the ability to perceive large, meaningful patterns and the key to doing that appears to be the ability to take on problems that go a bit beyond what we have already mastered, organizing information in a way that relates it to specific goals, classifying and re-classifying knowledge as we learn. More years of learning and repeated challenge can contribute greatly to the development of expert thinking and its once elusive companion, intuition. (p. 40)

Isenberg (1984, p. 86) defined intuition in terms of what it is not and what it is. According to him, intuition is not the opposite of rationality, nor is it a random process of guessing. Isenberg determines that intuition is based on extensive experience both in analysis and problem solving and it is a combination of gut feeling with systematic analysis, quantified data, and thoughtfulness.

Isenberg's definition correlates with Herbert Simon's statement as related in Benderly (1989, p. 36) that expertise and intuition are not separate phenomena, but "aspects of the same thing." Benderly added to this revisionist view of intuition in the statement that, "intuitive people share one trait--they are experts in particular fields of knowledge" (p. 39). In other words, people appear to be intuitive because they possess expertise.

Intuition has been described as mysterious and inexplicable in the past but, more recently, it is being described as a tangible and understandable means of gaining knowledge. Agor (1989) gives the following explanation: "Because intuitive skills are difficult to quantify, hard science has tended to look at intuition as an illusive skill of insight which merely enhanced the logical thinking ability of those who had the innate intuitive ability as an added asset" (p. 15).

According to Carl Jung's theory of psychological type, intuition is defined as being the polar opposite of sensing, with both sensing and intuition being descriptors of how we prefer to perceive what we are experiencing. Intuitives are comfortable perceiving beyond what is visible to the senses. They prefer to take in information holistically and may be more theoretical and future oriented in outlook; whereas,

sensing types prefer to deal with the actual, the here-and-now.

Split Brain Research

In the 1960's Sperry conducted split brain research with monkeys. Joseph Bogen and Phillip Vogel, along with Sperry, extended this research to humans. Since this research began, different researchers have been categorizing mental activities according to left brain-right brain origin. However, according to Agor (1989, p. 27), no research has been conducted which proves that either hemisphere is capable of problem solving, decision making, or discovery independent of the other. The same is true of where intuitive processes originate: the matter is still unresolved. Though this question is not of particular concern to this study, some comment might illuminate the topic.

The manuals that have been developed as peripherals to the Myers-Briggs Type Indicator instrument generally refer to intuition as a right brain function; and sensing, the other half of the S-N domain of the instrument, is referred to as a left brain function. In Please Understand Me, Keirsey and Bates (1984) referred to intuitive thinkers as right brain thinkers. Simonton (1975, p. 351), in a study of Harvard and Radcliffe students, used the Barron-Welsh art scale to measure creativity in a three-way ANOVA between thinking (analytical or intuition), task complexity, and

creativity. The results of his study generally tend to support the conclusion that: (a) intuition and analysis may indeed be distinctive modes of thought, and (b) the relative effectiveness of each may depend on both the nature of the problem and the cognitive style of the individual. He described intuition as unconscious and behavioral and analysis as conscious and logico-symbolic. The dichotomous theory is continued by the following definitions from Schon (1983):

sensors--perceive consciously, beyond reason; apprehend world by what they see, know, feel, smell; impose no control on perceptions

intuitors--reverse of sensors; impose control on perceptions, but in an unconscious way; intuitors understand what they see and feel in a whole and complete way; they apprehend instinctively

According to Schon (1983), although intuition is an irrational function, many intuitional influences can be broken down and the elements and origins brought into harmony with the laws of reason.

Integrating Right and Left Brain Thinking

On the subject of integrating right and left brain (intuition and analytical) thinking, Vaughn (1979, p. 52) quoted Lawrence LeShan as saying that "the deepest goal is to integrate the two (mystical intuition and scientific

analysis) in our lives, so that each viewpoint is heightened and sharpened by the knowledge of the other." Mintzberg (1976) talked of this integration in a slightly different way. He called for translating intuitive thinking into linear order in order for it to be articulated and made useful. Mintzberg said that, "truly understanding managers are those who are able to couple effective right hemispheric processes with effective processes of the left" (p. 57). According to Kleinmuntz (1990, p. 296), P. E. Meehl completed a total of 20 empirical studies comparing clinical (intuitive) prediction versus statistical prediction. He found none in which clinical prediction excelled. Kleinmuntz (1990, p. 301) further discussed the 1990 study by Blattberg and Hoch which followed up on Meehl's work regarding when to use one's head (i.e., intuition) instead of the formula (i.e., statistical or mechanical procedure). They combined the two measurements in five different business forecasting situations, using a 50% model-50% manager solution that outperformed either of the decision modes in isolation. They found that the combination capitalized on both the intuiiter's "special case" insights and the model's reliable combination of this information (Kleinmuntz, p. 301). Vaughn (1979) warned that, though discriminating judgments are essential to making choices in the world, the mind should be guided by reason, not bound by it.

Intuition as a Management Skill

Chester Barnard wrote in 1938 in The Functions of the Executive about the non-logical processes executives used in decision making. He talked of these processes as skillful judgments, decisions, and actions that are undertaken spontaneously, without being able to state the rules or procedures followed. Recently, others who have studied top managers have begun to look at intuition as a leadership skill. This move toward cultivation of intuitive skills in management settings has been encouraged by brain research over the last 20 years. However, interdisciplinary research on intuition is minimal and practically nonexistent in the area of educational administration.

Isenberg (1984), Agor (1981-88), Mintzberg (1976), and Peters and Waterman (1982) did extensive studies of top managers. All found that a large percent of those managers in their studies admitted that they used intuition in even their most important decisions. Schon (1987, p. 13) commented that outstanding practitioners are not said to have more professional knowledge than others but more wisdom, intuition, or talent. When he spoke of the importance of intuition in top management, Schon (1983, p. 239) stated that these people have constantly had to make choices in turbulent environments where problems do not lend

themselves to the techniques of cost analysis or probabilistic reasoning.

Intuition and Decision Making

The notion that intuition can play an important role in leadership is a relatively new paradigm. Agor (1989) gave an operating definition for intuition as a "rational and logical brain skill that can be used to help guide decision making" (p. 15). He further stated that, though at present researchers cannot quantify step by step how the process works, it is a product of a series of input sources including both factual and feeling cues.

Managers have become increasingly sensitive to the phenomena of uncertainty, change, and uniqueness. Schon (1983) wrote that "decision under uncertainty" has become an art (p. 239). It has become commonplace for managers to speak of the "turbulent" environments in which problems do not lend themselves to the techniques of probabilistic reasoning. Lasden (1985, p. 98) says that computers are governed by precise logic yet it is the onslaught of computers on organizations that has engendered the conditions under which intuitive decision making becomes more valuable: fast change, turmoil, and leaps into the unknown. According to Lasden, it is under these conditions that managers may find intuition to be their best resource for decision making. Simonton's studies (1975) showed that "as problem complexity increases, individuals are more

likely to solve the problem intuitively; that is, show behavioral improvement without any corresponding ability to state the principle involved" (p. 351). Schon (1983) states that "managers are often confronted with unique situations to which they must respond under conditions of stress and limited time which leave no room for extended calculation or analysis. Here they speak not of technique but of 'intuition'" (p. 239).

Isenberg (1984) in a study of 12 division heads of large corporations found that managers sometimes use intuition as a perception check on more rational analysis. Though they are familiar with systematic decision-making formulas, they use intuition to check for congruencies between solutions suggested by these methods and their "sense" of the right course of action. "In trying to achieve a match between 'gut' and 'head,' intuition can help to seek out holes in the data" (Isenberg, p. 86). Intuition provided a means of bypassing in-depth analysis and allowed the managers in this study to move rapidly to plausible solutions.

Agor (1986, p. 11) related that the types of situations conducive to intuitive decision making are those where there is a high degree of risk, where there is a choice between several plausible options (none of which is clearly favored by available data), where data may be inadequate, and where the course chosen is even in conflict with the direction

suggested by the data at hand. If all these factors seem strangely applicable to the situations we now face, perhaps therein lies the explanation of the increasingly intense look into the role of intuition in decision making.

Building Intuition in Organizations

Traditionally, intuition has long been regarded as an inherent trait. However, Agor (1989) believes that there are possibilities for the training and development of intuitive skills. According to him, any program for developing intuition should include methods which help to allow intuition to work, methods to help develop belief in intuition, and methods to help cultivate and practice intuition.

Benderly (1989) stated that "intuition is a predictable product of the way experts think and that intuition may be an ability that individuals can work toward and organizations can foster" (p. 36). Markley (1988) listed three broad classes of applications for his four methods for facilitating intuition in organizations. These are:

- (1) creative problem solving--training to overcome internal blockages to intuition
- (2) strategic planning--using intuition for the vision which precedes creation
- (3) policy analysis and futures research--training to gain freedom from biases associated with loyalties to the past (p. 91)

Benderly (1989) quoted Simon and Prietula on the importance of building intuition in organizations as follows: "We should give people the opportunity to become masters of important tasks without feeling that their jobs are dead ends" (p. 35). According to Benderly, they state the importance of nurturing creativity and training intuitive skills because the resulting rewards permit superior performers to become more valuable and stay put. It is a way of building "in-house experts." Schwab and Zamko (1988) wrote of the usefulness of group mental energy in problem solving and the need to "soften" regimentation that stifles intuition. The use of group mental imaging has been used successfully in nursing education.

The City of Phoenix, the National Security Agency, and the International City Management Association, among others, have programs for the use and training of intuitive skills. They use Weston Agor's Brain Skill Management program for dealing with complex problems. First, they give diagnostic testing for assessing participants' brain skill capabilities and potential. Second, comes custom placement on the job, situationally according to the problem or requirement at hand. The third step is training and development. One large police department has used the program for the training and development of problem-solving skills. In this program, highly intuitive people were identified by using the Myers-Briggs Type Indicator. This group then generated

solutions to a problem. A second group of analytical, logical, and critical thinkers reviewed the list generated by the intuitive group. The reason for doing it this way was that often creative thinkers are "shut down" by analytical members of a group. The third group (the first two groups combined) then came together, chaired by a person who scored high on integrative brain skills. The results of this method of problem solving was that they came up with a significant number of workable solutions, some that the police department itself had not thought of.

The training and development part of the program involved assessment of skills followed by awareness (both cognitive and affective understanding) of the relationship between complete brain skill usage and organization and personal fulfillment of goals. Development activities make up the final step. A strong intuitive may want to develop deductive reasoning and analytical skills; a strong analytical thinker may want to develop intuitive, inductive, and creative skills. Some may want to develop integrative brain skills to achieve more holistic thinking.

Other training and development materials are available from Daniel Coppon who has developed an Intuition board game and who is working on the development of an IQ test for intuition. Alan Vaughn has developed computer software programs for identifying and enhancing intuitive skills. Stanford University has implemented a course entitled

"Creativity in Business." The Center for Creative Leadership in Greensboro, North Carolina, helps participants identify and strengthen intuitive skills.

Whatever the method or program of training and development, the fact remains that many organizations see the development of intuitive skills as a viable means of increasing productivity. Naisbitt (1983) predicted a shift toward a new respectability for intuition in corporate settings.

Chapter 3

METHODOLOGY

Introduction

This chapter contains the research design, the selection of the sample, the procedures followed in gathering the data, and a description of the instrument used in Phase One of the study and the interview technique in Phase Two. In addition, an explanation is given of how the instruments were scored and of the techniques followed in the quantitative and qualitative analysis of the data. Since this study was conducted in two phases, all of the information about the methodology will first be given for Phase One of the study, followed by the methodology for Phase Two of the study.

Phase One of the Study

Phase One of the study was a descriptive study. It was designed to provide a population of intuitive thinkers from which a sample could be drawn for Phase Two of the study. In Phase One, data were collected utilizing the Myers-Briggs Type Indicator. This instrument is described in detail in the "Instrument" section below.

Population--Phase One

The population of Phase One of the study was comprised of public school principals, assistant principals,

supervisors, and superintendents in Tennessee. The population from which the sample was drawn was not weighted insofar as intuitiveness is concerned in any way.

Selecting the Sample--Phase One

The sample was those school leaders on whom the results of the Myers-Briggs Type Indicator (MBTI) were available. Those for whom MBTI results were available were designated school leaders in Tennessee as follows: Doctoral Groups 1, 2, and 3 at East Tennessee State University; participants (superintendents, principals, assistant principals, and supervisors) at various leadership academies conducted by the Tennessee Academy for School Leaders; and Athens City and McMinn County school leaders. The participants in the study were not pre-selected in any way as to preference for intuition on the Sensing-Intuition (SN) domain of the MBTI.

Purposeful sampling was the sampling method chosen for Phase One of the study. The purpose was to identify school leaders in Tennessee whose scores on the SN (Sensing-Intuition) domain of the MBTI were available so that, ultimately, participants could be randomly drawn for Phase Two. In experimental research, purposeful sampling is considered to be the least respected methodology. However, in this study, "the logic and power of purposeful sampling lies in selecting information rich cases for study in depth" (Patton, p. 169). Information rich cases are those that can provide a great deal of information about issues of central

importance to the purpose of this research; i.e., whether intuition affects the decision making of a group of selected Tennessee school leaders and the extent to which this varies by level of intuition scores on the Myers-Briggs Type Indicator (MBTI).

Gathering the Data--Phase One

The MBTI was administered to a total of 337 designated school leaders in Tennessee as follows: participants in academies conducted by the Tennessee Academy for School Leaders; Doctoral Cohort Groups 1, 2, and 3 at East Tennessee State University, Department of Educational Leadership and Policy Analysis; and school leaders in McMinn County and Athens, Tennessee.

The MBTI was administered to groups of participants in the academies conducted during 1991-92 by the Tennessee Academy for School Leaders. Access to the results was gained through the Academy. Participants were told that the results would be used in research and that their participation was voluntary. The completion of the name and demographic portion of the instrument was also voluntary. A letter (see Appendix A) was sent to the ETSU Doctoral Cohort members, and a release form (see Appendix B) was signed by those who responded. In addition to scores on the MBTI, data were also collected describing the demographic status of participants; i.e., gender, age, years' experience, present leadership position, and the level at which most of

the participants' teaching experience occurred. Respondents were given the option of completing the demographic data, and they were given the option of whether or not to give their names. All respondents were assured of confidentiality of any information gathered within the confines of this study by verbal or written agreement.

Instrument--Phase One

The instrument used in Phase One to obtain intuition scores of designated school leaders in Tennessee was the Myers-Briggs Type Indicator (MBTI). Form G of the MBTI (see Appendix C) was used in this study. Form G is a shortened version of the MBTI which was developed for administration to groups. According to Myers and McCauley (1990), "When scored for type, the 1977 Form F and Form G are essentially interchangeable" (p. 144). The MBTI reports preferences on four scales. Each dichotomous scale represents opposite preferences, described as follows:

EI Scale Introversion--more at home in the inner world of ideas than in the outer world of people and things

Extroversion--more at home in the outer world of people and things than in the inner world of ideas

SN Scale Sensing--would rather work with known facts gathered through the five senses, more concerned with what is actual

Intuition--would rather look for possibilities and relationships; prefer taking in information through the "sixth" sense; concerned with what might be

TF Scale Thinking--base judgments more on impersonal analysis; prefer to organize and structure information to decide in a logical, objective way

Feeling--base judgments more on personal values than on impersonal logic; prefer to organize and structure information to decide in a personal, value-oriented way

JP Scale Judging--preference for a planned, decided, orderly way of life

Perception--preference for a spontaneous and flexible life

According to Myers and McCauley (1990), the MBTI reflects six decades of interest in Carl Jung's theory of psychological type. The instrument comes from the work of Katherine Briggs and her daughter, Isabel Briggs Myers. Myers took over 20 years to develop the type indicator.

The MBTI has been in use for almost 50 years and has proven to have high reliability and validity. The MBTI data bank currently has more than 250,000 records; the Form G data bank currently has 32,671 records.

Reliability. According to Myers and McCauley (1990, p. 169), reliability studies conducted on Form G show that the estimates of internal consistency reliabilities for the continuous scores of the four MBTI scales are acceptable for most adult samples. Older, more educated groups tend to give more reliable results (Myers and McCauley, 1990). Test-retest reliabilities of the MBTI show consistency over time with the chance probability of choosing all four preferences on retest (i.e., coming out the same type) being 6.25% (Myers and McCauley, 1990, p. 170).

Validity. "Because the MBTI was designed to implement Jung's theory of psychological types, its validity is determined by its ability to demonstrate relationships and outcomes predicted by theory" (Myers and McCauley, 1990, p. 175). The MBTI shows consistent high validity in several comparison studies. Comparison with self-assessment of type preferences and with other personality type inventory instruments, as well as scales of interest and academic tests, verifies the content validity of the MBTI (Myers and McCauley, 1990, p. 209). The MBTI has an established record of validity and reliability based on over 50 years of development and use.

Scoring the Instruments. The instruments were scored by the participants after a step-by-step explanation was given. After access was gained to the scored instruments,

the scoring for each case was verified and the data were coded (see Appendix D).

The raw scores of respondents' results from the Myers-Briggs Type Indicator (MBTI) were calculated from completed instruments. The scoring of the MBTI results in a four-letter type for each respondent. The four dichotomous domains as described on pages 29 and 30 are: Introvert-Extrovert (EI), Sensing-Intuition (SN), Thinking-Feeling (TF), and Judging-Perception (JP).

In order to gain further information beyond that available from raw scores, preference scores were calculated for each case. First, the difference between the raw scores in each index or domain (i.e., Introvert-Extrovert-EI) was determined. For those scores indicating Extrovert, Sensing, Thinking, or Judging, the difference in scores was doubled minus one. For those respondents whose scores indicated Introvert, Intuition, Feeling, or Perception, the difference in scores was doubled plus one. An example would be a respondent whose scores revealed an Extrovert score of 17 and an Introvert score of 12, which would give a letter preference of E (Extrovert). Since the preference is an E (Extrovert), the difference of five would be doubled, minus one for a preference score of 9 ($17-12=5 \times 2-1=9$). The letter indicates the direction of the preference (i.e., E or I), whereas the number preference indicates the strength of the

preference. The preference scores were divided into four levels or categories as follows:

Level 1--Slight preference; scores 1-5

Level 2--Moderate Preference; scores 6-10

Level 3--Clear Preference; scores 11-20

(F domain, 11-15)

Level 4--Very Clear Preference; scores 21+

(F domain, 15+)

The chart used to determine preference scores is shown in Appendix E. This same chart used to determine preference scores was also used to determine continuous scores. On this chart, continuous scores are given for each preference score.

Continuous scores are a linear transformation of preference scores, treating the dichotomous scores on each domain (i.e., EI) as if they were a continuous scale. This allows for the statistical manipulation of the scores. On this continuum, the ISTJ scores are given in the left column and the ENFP scores are given in the right column. For ISTJ, the range of continuous scores was from 33-99; the range for ENFP, 101-167. A lower score (nearer 33) on the continuum (i.e., SN) indicates a high preference for the first letter of the domain (i.e., S for the SN domain), and a score near 99 indicates a slight or low preference for the first letter. A score near 101 on the same continuum indicates a low preference for the last letter of the domain

(i.e., N of the SN domain), and a score nearer the upper limit (167) indicates a very clear or high preference for the last letter of the domain (i.e., N of the SN domain). The moderate and clear preference levels for the first letter of the domain (i.e., S of the SN domain) fall around the mean continuous score for Sensing, and the moderate and clear preference levels for the last letter of the domain (i.e., N of the SN domain) fall around the mean continuous score for N.

Data Analysis--Phase One

In Phase One, SPSS/PC, a data analysis computer software package developed by SPSS, Inc., Chicago, Illinois, was used. All data were coded for use with this software (see Appendix D). A data file was created, using a fixed format in which the information for each case was located in the same column locations.

Frequencies on gender, age, years' experience, present leadership position, and the level at which most of the participants' teaching experience occurred were obtained. Frequencies were also determined for each of the four dichotomous domains, preference levels and continuous scores on the Myers-Briggs Type Indicator.

A t-test for independent samples was run to test for a difference between the continuous scores on each scale of the MBTI for males and females. Analyses of variance (ANOVAs) were run to test for differences between mean

scores on each scale of the MBTI on the variables: age, years' experience, leadership position, education level, and the grade level at which most of teaching experience occurred. Multiple comparison tests were used when a significant difference was discovered among the groups. All analyses as listed above and as described in detail in Chapter Four were accomplished through the use of SPSS/PC.

Phase Two of the Study

Phase Two of the study was a type of multi subject field study which, according to Krausz and Miller (1974), is an umbrella term which covers three possible basic approaches: (1) application of a statistical sampling procedure followed by direct interviewing of varying degrees of formality or by the use of mailed questionnaires, (b) participant observation, whether open or concealed, and (c) the interviewing of "key contacts" or "key informants," usually without resorting to sampling methods. Since this study is a two-pronged approach consisting of a statistical sampling procedure followed by direct interviewing, it meets the criteria of the first basic approach described by Krausz and Miller (1974). The approach to collecting and analyzing data was a modified analytic induction design as quoted from W. S. Robinson and as defined by Bogdan and Biklen (1982) as including all or elements of the following:

1. Early in the research a rough definition and explanation of the particular phenomenon is developed.
2. The definition and explanation is held up to the data as it is collected.
3. The definition and/or explanation are modified as new cases are encountered that do not fit the definition and explanation as formulated.
4. Cases that may not fit into the formulation are actively sought.
5. The phenomenon is redefined and the explanation reformulated until a universal relationship is established, using each negative case to call for a redefinition or reformulation. (p. 67)

According to Bogdan and Biklen (1992), the procedure of analytic induction is called for when some specific problem (i.e., intuition in decision making) is the focus of the research. For this type of research, the open-ended interview is the primary source of data, the interview questions evolve as different subjects are interviewed, and purposeful sampling is employed. These basic design elements were included in the design of this study. An attempt was made to actively seek cases that might not fit into the formulation by seeking intuitive thinkers at various preference score levels. Also, by conducting a pilot using four participants and revising the questions

according to the results of those interviews, a more fertile source of information was provided so that common elements could better be discovered. The open-ended interview technique provided a guide of general topics to be explored, based on existing research and subsequent theories of intuition and its role in the decision-making process of managers. By allowing interview questions to evolve as the pilot interviews were being conducted, a better understanding from the perspective of the participants is possible, rather than being bound to a questionnaire which would be based entirely on the researcher's perspective.

Reliability--Phase Two

Reliability

Deliberate efforts were made to assure replicability of this study. According to LeCompte and Goetz (1982, p. 37), ethnographers can enhance the external reliability of a study by appreciating the impact of five problem areas: researcher status position, informant choices, social situations and conditions, analytic constructs and premises, and methods of data collection and analysis. In this study, efforts were made to address each of the five problem areas. A discussion and description of how each potential problem area was addressed follows.

As none of the participants held a close working relationship with either me or with other participants, the problem of researcher status position was not a factor.

Although I was acquainted with two of the participants among the four pilot interviewees, they were not known through work-related situations. The other participants in the study were known only through the administering of the MBTI in Phase One of the study.

In order to nullify the impact of problems with informant choices, care was taken to assure that interviewees were not deviant from their group (Tennessee school principals) except for the fact that they were identified as intuitive on the Myers-Briggs Type Indicator (MBTI). Though the instrument was given as part of a principals' academy for the majority of those to whom the instrument was given, this does not indicate that there was informant bias. Principals are required to attend academies and they may choose which ones to attend. The MBTI was administered at several different academies, most of which covered different programs of professional development. The participants were divided by levels of preference scores and five were selected for interviews. This technique insured that no pre-selection of informants was possible.

In addressing the third problem area, social situations and conditions, all interviews were conducted with one interviewee at a time. Since the interviews were conducted during the summer months, there were no other people around the school to distract the participants, and care was taken

to assure that all interview situations were conducted as similarly as possible.

To assure that analytic constructs and premises did not serve as a hindrance to reliability, care was taken to clarify underlying assumptions and definitions in as standardized a manner as possible. These are enumerated and explained in Chapter 1.

Methods of data collection and analysis comprise the fifth problem area that may emerge as a threat to external reliability. LeCompte and Goetz (1982, p. 40) iterate the conclusion that replicability is impossible without precise identification and a thorough description of data collection and analysis strategies. After the interview questions were clarified through the piloting process, they were presented in the exact format to each of the 20 participants. Thus, care was taken to make sure that the entire process was recorded in such a manner as to facilitate replication.

Population--Phase Two

The population of Phase Two of the study was those designated school leaders in Tennessee to whom the MBTI was administered in Phase One. The total population was 337 cases. Those cases whose scores showed a preference for Intuition (N) on the MBTI were isolated, giving 120 cases. Further, those principals (n=35) whose MBTI scores showed a preference for intuition were selected. Only one leadership status (principals) was used for Phase Two of the study so

that the decision-making experiences would be more similar and so that terms such as "peers," "subordinates," "work environment," and "superordinates" used in the interview would have common meanings. Further, it was believed that experience as a principal would be of particular benefit not only in gathering the data but also in the analysis of the data and would help to assure mutual understanding of terms and questions.

Each principal whose SN score reflected a preference for N was then placed in one of each of four categories according to the preference score on the N domain. These four categories as established by Myers and McCauley are as follows:

<u>Category</u>	<u>Range of Preference Scores</u>
Slight Preference	1- 5
Moderate Preference	6-10
Clear Preference	11-20
Very Clear Preference	21 or higher (15 or higher for the Feeling domain)

It was important to maintain a focus on common factors in decision making in order to determine the role of intuition in the decisions made by a selected group of school principals. The achievement of this goal was aided by selecting participants from four levels of intuition scores on the MBTI and by the diversity of participant demographics such as gender, administrative positions at three different

levels (elementary, middle, and high school), years of experience, and education level. This selection process guarded against the possibility that a more homogenous group selected from those cases with the highest level of intuition scores could have biased the data gathered toward the more exotic.

Sample--Phase Two

A sample of school principals was taken from each of the four categories: slight preference, moderate preference, clear preference, and very clear preference. The first case from each category was selected to serve as a pilot participant. The next five cases from each category were drawn, for a total of 20, to be interviewed after the pilot. This left one case in the slight preference category, three in the moderate preference category, three in the clear preference category, and four in the very clear preference category. One substitution was made in the very clear preference category when the participant was unable to keep several scheduled appointments for an interview. Because this participant lived in West Tennessee and time did not allow for another trip, the next case in the very clear preference category was interviewed. The rationale for selection of interviewees from each category of preference scores on the Intuition (N) domain of the Myers-Briggs Type Indicator was to determine if there was a

difference in the use of intuitive skills according to level of preference score.

The sampling procedure used in this phase of the study is sometimes referred to as a filtering or multi-phase process in which a limited amount of basic information is collected from a large sample and more intensive data is collected from a smaller subsample. This type of internal sampling narrows the focus of the study.

Gathering the Data--Phase Two

In Phase Two, a qualitative assessment, based on the interview technique, think-aloud protocols and researcher observations, and analysis of participants' answers to individual questions on the SN (Sensing-Intuition) domain of the MBTI, was conducted. A total of 24 subjects, or key contacts, were interviewed to determine if their decision making was affected by their intuition, to what extent this varied by level of intuition, what factors influenced their use of intuition, and if there were common strands or elements in their decision-making processes.

Triangulation

Triangulation, especially in terms of using multiple methods of data collection and analysis, strengthens reliability. Data were collected and recorded using three approaches: interviews and questionnaires, think-aloud protocols by interviewees and analytic memos concerning

nonverbal behaviors; notes on similarities and disparities of answers to specific questions; and answers to individual questions on the SN (Sensing-Intuition) domain of the MBTI. The triangulation of methods of data collection was used to cross-check the accuracy of data collection which, according to Goetz and LeCompte (1984, p. 35), is essential to assure reliability of qualitative studies. According to Patton (1980), triangulation is a process which can help to guard against the accusation that a study's findings are simply an artifact of a single method, a single source, or a single investigator's bias. Triangulation of data sources also helps to strengthen validity since it "formalizes the meanings which participants attribute to phenomena" (LeCompte and Goetz, 1984, p. 53).

Interviews

Pilot. Before the 20 interviews were conducted, four names were chosen from the available MBTI results. After those cases whose scores showed a preference for intuition were sorted and placed into four categories according to preference score level, the first case in each level was selected. These first four cases were chosen to serve as a pilot for the interview to determine if the questions to be asked would produce information pertinent to the problem of the study. Each of these four were asked if there were questions which were not clear and if rewording of some questions might result in more thorough information. The

questions posed to the four participants in the pilot are shown in Appendix F. After the data from these four interviews were analyzed, the questions were refined and supplemented, resulting in a list of questions shown in Appendix G which were used to interview the 20 subjects in the study.

Interview Format. Interview questions were developed that allowed the stratified sampling drawn from the population in Phase Two to verbalize about their decision-making process. The design of the interview questions was intended to translate the objectives of the research into a set of questions appropriate to the objectives and to maximize the potential value of the responses. Since Phase Two of the study was concerned with process issues, consideration was given to participants' perceptions. According to Patton (1980, p. 95), the use of open-ended questions in the interview process allows one to enter into the interviewee's perspective and thereby gather information which could not be gained through observation. Open-ended questions also allowed for the determination of possible themes, words, structures, procedures, influences, and other factors which are common to the decision-making process of intuitive thinkers. Certain questions were repeated in a slightly modified form in order to evaluate the consistency of response on certain topics. The questions for the pilot were influenced by the review of literature and they were

designed to provide information revolving around the research questions of the study. An attempt was made to include questions which tapped the affective and the cognitive domains and to maximize the richness of responses which would help reach the objectives of the research but which would also allow for actively seeking information which might not fit preconceived notions gained through review of research findings. The questions asked of the 20 participants in the study were a product of the refinement and supplements resulting from the four pilot interviews.

Arrangements for each of the interviews with the 20 participants were made by telephone. Most of the interviews were conducted in the school offices of participants. Conducting the interviews in the summer was ideal because there were few interruptions and the atmosphere was more relaxed than would be true when students and faculty were in the building. Because of scheduling conflicts, four interviews were conducted in other public places. Two of the interviews were conducted in restaurants; however, they were scheduled in mid-afternoon and were conducted in a quiet corner of the room. One interview was conducted in a meeting room of a hotel and one was conducted in an empty classroom at East Tennessee State University. The 20 interviews comprising Phase Two of the study were conducted during August of 1992.

Before each interview, a consent form was presented for each participant's signature (see Appendix H). Participants were then asked for permission to tape record the interview. LeCompte and Goetz (1982) advise the use of tape recorders as one strategy for reducing threats to internal reliability of a qualitative study. In this way, one can rely more on low-inference descriptors (verbatim accounts) and use high-inference comments from the notes to supplement. Each participant was told that time would be allotted at the end of each interview for any questions or further comments they might have. By doing this, comments were avoided during the interview which might have influenced answers given by the interviewees. This part at the end of the interview was not tape recorded, and the information given by some of the participants proved to be rich in information which was not given in the recorded interview. During this unrecorded part of the interview time with the four participants in the pilot, several suggestions were given which helped to clarify questions used with the other 20 participants. This technique also gave information which helped to understand the participants' perspectives. These comments made up part of the analytic notations which were added to the end of each transcript.

As an assurance of confidentiality, each participant was told that he or she would only be referred to by case number, gender, and administrative level (elementary,

middle, or high school). Each participant was taken through the same questions in the same sequence. Tapes were transcribed after each interview was completed. The tapes were erased after transcripts were carefully reviewed and analysis of all the data was complete.

Think-Aloud Protocol

At the end of each interview, participants were asked to respond to a school-related scenario as shown in Appendices I and J. The same scenario was used for all participants. Participants were given time to read both items, after which time they were asked to respond, telling how they would proceed in deciding how to handle the problem. Through a procedure called think-aloud protocol (Ericsson & Simon, 1984), participants were tape recorded as they "talked" through their analysis of the problem and the decisions and subsequent actions in solving the problem. To assure comparability of data, the same scenario and procedure was used for all participants. The tape recordings were then transcribed and the transcripts were analyzed using the eight-category analysis sheet as shown in Appendix I. The goal was to uncover covarying patterns of behaviors.

Analytic Notes

As ideas for codes emerged during interviews, notations were quickly jotted down. Since interviews were tape

recorded, these were the only notations made during interviews. After each interview and after returning to the car, notations were made concerning nonverbal behaviors which were observed and any other notations concerning the interview which might have influenced responses or which might prove helpful during data analysis. Unrecorded comments made at the end of each interview were reconstructed after the interview. These comments were added to the end of each transcript. Codes were also added to denote gender, age, and administrative position held by the interviewee. These notations and codes were added to the transcription of each case.

Data Analysis--Phase Two

Data gathered in Phase Two of the study were analyzed inductively; i.e., hypotheses develop from the data as particulars are grouped together and without prior constraints on what the outcomes of the research will be. Lincoln and Guba (1985, p. 40) prefer inductive data analysis because it is more likely to identify the multiple realities to be found in qualitative data and because it is more likely to identify the mutually shaping influences that interact. According to Patton (1980), the analyst is looking for emergent patterns in the data while working inductively. These patterns can then be represented as dimensions, classification schemes, themes, and categories. Theory developed in this way, emerging from the connection

of many units of information, is referred to by Glaser and Straus (1967) as grounded theory. Patton (1980) says that how one studies the world determines what one learns about it and that the methods that are used in the development of grounded theory take one into and close to the real world so that the results are "grounded" in the empirical world (p. 50).

In preparation for analysis of data gathered in Phase Two, the interview, talk-aloud materials, and researcher notes were transcribed. Three copies of all transcriptions were made, using a wide right margin format so that notes, key phrases, and codes could be added. Notes concerning nonverbal behaviors, comments made after the tape recorder was turned off, and other observations were added to the end of each transcript. Pages for each case were numbered and circled so as not to confuse page numbers with case numbers. Each case transcription was numbered beginning again with page 1. Each page was numbered by case number and page number, i.e., 1-13.

The data were scanned and notes and observations were made during the scanning process. "The notes taken while scanning constitute the beginning stages of organizing, abstracting, integrating and synthesizing, which ultimately permit the investigator to tell others what they [sic] have seen" (Goetz & LeCompte, 1984, p. 191).

The data were organized, broken down into manageable descriptive units, and searched for patterns or common factors. The data were then sorted according to preassigned coding categories. Care was given to insure that the categories met the following criteria set forth by Van Maanen (1979):

Internal homogeneity--the extent to which the data that belong in a certain category hold together or "dovetail" in a meaningful way and,

External homogeneity--the extent to which differences among categories are bold and clear. (p. 311)

A master sheet was developed showing the case number, gender, age, intuition preference score, and leadership position for each interviewee (see Appendix K). This was used after different parts of the transcripts were reassembled according to repeated phrases and common factors, as well as individual differences. The master code sheet helped to quickly identify the source of a particular piece of the transcript. After the master sheet was completed, the transcripts were reviewed and recurring regularities in the data were listed. These were put together with each pattern coded as to case number, page number, and question number. Common factors were highlighted as the transcripts were reviewed again.

Individual differences in the experiences and perceptions of participants were also noted and are interpreted in Chapter 4. Axial coding was used around repeated factors until core categories were formed. These were finally compressed into evolving categories as designated in Chapter 4. Subsequently, the final step in the analysis was a process of disassembling the complete picture and reassembling the pieces into a new form.

Chapter 4

DATA DISPLAY AND ANALYSIS

The results of this study are presented in two sections. The first section contains a quantitative analysis of the data gathered in Phase One of the study. The data garnered from the results of the Myers-Briggs Type Indicator (MBTI) are presented and discussed in isolation and as they compare with results from the data bank of the MBTI as reported by Myers and McCaulley (1990).

The second section contains a qualitative analysis of the data gathered in Phase Two of the study. This section contains a general presentation and analysis of data gathered from the interviews, talk-aloud protocols, and analytic notes made during the interviewing process. The results are analyzed in terms of theme formation, core categories, and subcategories and included is the rationale for category and theme formation. The analysis at this point became an interpretation of interpretations.

Phase One

The data were first coded and then analyzed utilizing the SPSS+ software package. Frequencies were obtained in the following categories: gender, age, leadership position, education level, years' experience in education, and grade

level of teaching experience. The total number of cases was 337 which exceeded the established sample required of 300.

Data for the demographic variables gender, age, education level, years' experience in education, and grade level of teaching experience are shown in Table 1.

Table 1
Demographic Information of Cases

Variable		Number	Percent
Gender			
Male		184	54.6
Female		153	45.4
Total		337	100.0
Age by Decade			
Group	Years		
1	20-30	9	2.7
2	31-40	98	29.0
3	41-50	162	48.1
4	51-60	58	17.2
5	Over 60	8	2.4
Missing Cases		2	.6
Total		337	100.0

(Table 1 continued)

Variable	Number	Percent
Leadership Position		
Principal	118	35.0
Assistant Principal	96	28.5
Supervisor	105	31.2
Superintendent	17	5.0
Missing Cases	1	.3
Total	337	100.0
Educational Level		
Master's	135	40.1
Master's +	172	51.0
Doctorate	25	7.4
Missing Cases	5	1.5
Total	337	100.0
Years' Experience in Education		
Group	Years	
1	1-10	18
2	11-20	143
3	21-30	113
4	31-45	30
Missing Cases		33
Total		337
		100.0
mean = 21.033 years maximum = 44.0 minimum = 4.0		

(Table 1 continued)

Variable		Number	Percent
Grade Level of Teaching Experience			
Group	Level		
1	Elementary	114	33.8
2	Middle	71	21.1
3	High	147	43.6
	Missing Cases	5	1.5
Total		337	100.0

Of the 337 cases, 153 were female and 184 were male. Frequencies on the age variable indicated that the largest percentage (48.1%) was in the 41-50 age group (n=162). The next highest age category was in the 31-40 age group (n=98) for 29%. In the 51-60 age group, 17.2% were represented (n=58). Eight respondents (2.4%) were over 60, and 9 (2.7%) were in the 20-30 year range. Two (.6%) did not report.

The leadership position variable was broken down into four categories as follows: superintendents, principals, assistant principals, and supervisors. Of the 337 cases, 17 (5.0%) were superintendents, 118 (35.0%) were principals, 96 (28.5%) were assistant principals, 105 (31.2%) were supervisors, and one (.3%) did not report.

The education levels as reported by respondents were as follows: 172 Masters + (51.0%), closely followed by 135 respondents (40.1%) who had earned a Master's degree. Twenty-five respondents (7.4%) held doctorates. Five (1.5%) did not report.

The mean years' experience in education for all respondents was 21.0 years. The minimum years' experience was 4 years; the maximum years' experience was 44; and the most frequently reported number of years' experience was 20. The number of years' experience grouped revealed 143 (42.4%) in the 11-20 category (Group 2), followed by 113 in the 21-30 category (Group 3) for 33.5%. Eighteen (5.3%) had 1-10 years' experience, and 30 (8.9%) had 31-45 years' experience. Thirty-three cases (9.9%) did not report. For 114 (33.8%) participants, the majority of their teaching experience was at the elementary level; 71 (21.1%) cases reported that the majority of their teaching experience was at the middle school level; and 147 (43.6%) respondents reported that the majority of their teaching experience had been at the high school level, and five (1.5%) did not report.

Frequencies for each of the four domains of the Myers-Briggs Type Indicator were obtained and are reported as follows: Of the 337 respondents, 148 (43.9%) scored as introvert, while the remaining 189 (56.1%) scored as extrovert on the IE scale. On the Sensing-Intuition (SN)

scale, 217 (64.4%) were sensing, and 120 (35.6%) were intuitive. Scores on the Thinking-Feeling (TF) scale yielded 215 (63.8%) thinking cases and 122 (36.2%) feeling cases. On the final scale, Judging-Perception (JP), 235 (69.7%) cases scored as judging, with the remaining 102 (30.3%) scoring as perceptive.

Preference scores for the four domains of the Myers-Briggs Type Indicator were calculated for each of the 337 cases. The preference scores revealed that over half of the respondents indicated a very clear preference for each of their choices in all of the four domains. A very clear preference indicates that the subject will almost always go to the choice indicated on the MBTI results. For example, a respondent with a very clear preference for Intuition on the SN domain will usually take in information in ways preferred by Intuitive thinkers--i.e., holistically, conceptually, nondetailed, focused on patterns and possibilities.

An analysis of the continuous scores reveals that as a group the 337 respondents in this study indicated preferences for Extroversion, Sensing, Thinking, and Judging (ESTJ). Fifty-six percent of the respondents scored as introverts and the mean continuous score on the IE scale was 97.8. A score above 99 would have indicated a preference for extroversion. The continuous scores on the Sensing-Intuition scale yielded 64.7% sensing with a mean of 88.6. The continuous scores on the Thinking-Feeling scale showed

62% thinking with a mean of 92.73. The final scale, Judging-Perception showed that 68% of the respondents scored as judging with a mean of 88.67.

Since continuous scores provide for more accurate statistical data, these were used for investigation of the interaction between the demographic categories and individual scores for each of the four domains of the Myers-Briggs Type Indicator (MBTI). The data were analyzed using Analysis of Variance (ANOVA), and subsequent multiple range tests utilizing continuous scores on each domain of the MBTI with each of the five categories: age by decade, years' experience in education, education level, grade level of teaching experience, and leadership position.

No significant differences between groups were found when looking at the age by decade category in any of the four MBTI domains. When the age variable was recoded into two groups--Group 1, ages 20-40, and Group 2, ages 41--a t-test revealed no significant difference between the groups, indicating that age was not a factor in whether the respondent was classified as Introvert, Extrovert, Sensing, Intuition, Thinking, Feeling, Judging, or Perception. The years' experience in education category also yielded no significant difference between group for any of the four MBTI domains.

When the continuous scores for the Sensing-Intuition (SN) domain were analyzed with educational level, a

significant difference ($F=.0006$) was found. Furthermore, the Tukey-B, a multiple range test, indicated that the difference was located in Group 3. Therefore, it was determined that respondents who had earned doctorates were more intuitive than the rest of the population. In addition, the educational level yielded another significant difference ($F=.0198$) on the Thinking-Feeling (TF) domain. Again, the Tukey-B showed that Group 1 (Master's degree) tended toward the Feeling side of the TF continuum.

Continuous scores on both the SN and TF domains showed significant differences when tested on the grade level of teaching experience category. A significant difference ($F=.0003$) on the TF scale showed that elementary and middle school personnel tended to be more Feeling than high school personnel. This was calculated using both the Student-Newman-Keuls and the Tukey-B multiple range tests; however, the Scheffe', another multiple range test, showed that only respondents with elementary teaching experience differed significantly from the other two groups (middle and high school). The Scheffe' is recognized as a highly conservative comparison test. Continuous scores on the Sensing-Intuition (SN) scale also yielded a significant difference ($F=.0039$) when tested with the grade level of teaching experience category. The multiple comparison tests, the Student-Newman-Keuls, the Tukey-B and the conservative Scheffe' all indicated that respondents with teaching experience at the

elementary level tended to be less Sensing and more toward the intuitive side of the SN continuum.

The leadership position category yielded significant differences on three of the four MBTI domains. When the continuous scores on SN were tested for leadership position, a significant difference ($F=.0003$) was found. Both the Tukey-B and Student-Newman-Keuls indicated that Group 3 (supervisors), although still scoring as Sensing, were more intuitive than the other three groups since the mean continuous score (95.6) for this group was closer to the Intuitive side of the SN continuum. A significant difference ($F=.0115$) was also found for the Thinking-Feeling (TF) domain and leadership position. Again, both the Tukey-B and Student-Newman-Keuls showed that Groups 3 and 4 (supervisors and superintendents) differed significantly in that their mean continuous score tended more toward the Feeling side of the TF continuum. It should be noted that the mean score (103) of Group 4 (superintendents) placed them clearly on the Feeling side of the TF continuum. When the leadership position category was analyzed with the continuous scores on the Judging-Perception domain, it yielded a significant difference at the .02 level. The Tukey-B revealed that Groups 2 and 3 (assistant principals and supervisors) were less judging than the other two groups.

Analysis of the remaining demographic category, gender, was completed for each of the four MBTI domains. Of these four, only one domain yielded a significant difference. T-tests for differences between the mean continuous scores of males and females on each domain (IE, SN, TF, and JP) of the MBTI revealed a significant difference in the continuous scores on the SN (sensing-intuition) domain at the .020 level of probability. Although the mean scores of both the male and female groups placed them on the sensing side of the continuum, the females were less sensing and their mean score (92.037) placed them more toward the intuitive side of the continuum. A summary of the demographic data for female respondents follows in Table 2.

Table 2

Demographic Information of Women Respondents

Variable		Number	Percent
Age by Decade			
Group	Years		
1	20-30	4	2.6
2	31-40	53	34.6
3	41-50	74	48.4
4	51-60	19	12.4
5	Over 60	2	1.3
Missing Cases		1	.7
Total		153	100.0

(Table 2 continued)

Variable	Number	Percent
Leadership Position		
Principal	35	22.9
Assistant Principal	47	30.7
Supervisor	66	43.1
Superintendent	5	3.3
Total	153	100.0
Educational Level		
Master's	75	49.7
Master's +	64	42.4
Doctorate	11	7.3
Missing Cases	3	.6
Total	153	100.0
Years' Experience in Education		
Group	Years	
1	1-10	7.2
2	11-20	49.7
3	21-30	29.4
4	31-45	7.2
Missing Cases		6.5
Total		100.0
	153	
	mean = 19 years	
	minimum = 4	
	maximum = 43	

(Table 2 continued)

Variable		Number	Percent
Grade Level of Teaching Experience			
Group	Level		
1	Elementary	88	57.5
2	Middle	22	14.4
3	High	42	27.5
	Missing Cases	1	.4
Total		153	100.0

Of the 153 female respondents, 4, or 2.6%, fell in the 20-30 year old group; 53, or 34.6%, were between 31 and 40; a majority of 74, or 48.4%, were between 41 and 50; 19 (12.4%) were between 51 and 60; only 2 women (1.3%) were over 60 years, and one (.7%) did not report. The majority of women, 66, or 41.1%, held supervisory positions, with assistant principals next with 47, or 30.7%; principals made up the next group with 35 women, or 22.9%; and 5, or 3.3%, were superintendents in the Leadership Position category. Educational level was divided into 3 groups. Of these, informants were fairly evenly divided among the Master's and Master's +, with 75 (49.7%) reporting a Master's degree, 64 (42.4%) having Master's plus hours, 11 (7.3%) having earned doctorates, and three (.6%) did not report. When the women

were analyzed as to years' experience in education, a mean of 19.587 years was obtained, with a minimum of 4 and a maximum of 43. When the years' experience education was broken down into groups, the overwhelming majority fell into the 11-20 year group with 76, for 49.7% of the women respondents. Forty-five (29.4%) had between 21 and 30 years' experience, and the extremes--both the 1-10 and the 31-45 groups--accounted for 11 (7.2%) of the women. For the grade level of teaching experience category, 88 women (57.5%) had taught at the elementary level, 42 (27.5%) at the high school level, 22 (14.4%) had the majority of their teaching experience in middle school, and one (.4%) did not report.

An analysis of the preference scores by levels revealed that the 153 female respondents were clear in their preferences for their choices for the Introvert/Extrovert, Sensing/Intuition, and Judging/Perception indices, but they were only moderate in their preference for the Thinking/Feeling index. For the 153 females, the preference as a group was moderately on the Feeling side of the TF scale.

When preference scores of female administrators were converted into continuous scores and analyzed, their scores revealed that as a group they were introvert, sensing, feeling, and judging (ISFJ). It should be noted that the scores for the Introvert/Extrovert (IE) index were on the border between the I and the E but fell slightly on the

Introvert side of the continuum. It should also be noted that the raw scores indicated a choice as a group for the Extrovert side of the index, whereas continuous scores indicated a choice for the Introvert side.

Because Phase Two of this study involves a qualitative assessment of data gathered from principals, it is of interest to include statistics that compare principals with the general population. Therefore, to sum up the analysis of data, a comparison was drawn between the population and the principals in this study and the Myers and McCaulley data bank for the general population and school administrators. The Myers and McCaulley data bank includes more than 250,000 cases (32,671 for Form G) in their general population and 1,024 elementary and secondary administrators. Percentages for each of the two scales for each of the four domains of the Myers-Briggs Type Indicator are displayed in Table 3.

The percentages given on the EI and JP domains for school administrators from the Myers data bank are closely aligned with the percentages on the EI and JP domains in this study. However, there is a difference in the SN and TF domains. The interpretation of these differences will be given in Chapter 5.

Phase Two

Four pilot interviews were conducted with intuitive principals identified through use of the Myers-Briggs Type

Table 3

Type Percentages for Myers Data Bank and Study Data

This Study		Myers Data Bank		
Population	Principals	Total Population	School Administrators	
Introvert	44%	47%	25%	41%
Extrovert	56%	53%	75%	59%
Sensing	64%	72%	75%	53%
Intuition	35%	28%	25%	47%
Thinking	63%	64%	60% males	50%
Thinking			35% females	
Feeling	36%	36%	40% males	50%
Feeling			65% females	
Judging	69%	76%	55-60%	70%
Perception	31%	24%	40-45%	30%

NOTE: Percentages rounded to nearest percent.

Indicator (MBTI) used in Phase One of the study. The four pilot interviews were followed by 20 interviews with intuitive principals also identified in Phase One of this study. There were two males (one high school principal and one elementary principal) and two females (one high school principal and one elementary principal) in the pilot. One was from southeast Tennessee, one was from east Tennessee, and two were from middle Tennessee.

As described in Chapter 3, in Phase Two of the study all respondents who scored as intuitive (n=120) on the MBTI were extracted from the total population of 337. From the 120 intuitive cases, the 35 principals were identified to provide the sampling pool. These cases were then placed into the four levels of intuitiveness according to preference scores on the MBTI, and the first case drawn from each level became the pilot. Following the pilot, the next five cases were selected from each level within the intuitive index.

Of the 20 participants, 11 were male and 9 were female. Of the 11 males, 5 were elementary principals, 5 were high school principals, and 1 was a middle school principal; of the 9 females, 7 were elementary principals, 1 was a high school principal, and 1 was a middle school principal.

The transcribed data from these interviews yielded 253 single-spaced pages of typewritten dialogue. The transcriptions were carefully scanned, then scrutinized for emerging categories. Seven major categories were identified as: definition of intuition, extent of use of intuition, development and enhancement of intuition, work environment, common characteristics of the interviewees, and common elements of decision making. Several subcategories resulted from many of the seven major categories. These subcategories are listed and discussed as each major category is reported in the following analytic narrative.

The 20 interviewees were also administered a school-oriented scenario and asked to "talk through" their decision-making process in dealing with the issue presented in the scenario. This talk-aloud protocol was transcribed and analyzed and will be summarized as a separate part of this discussion.

The master list as shown in Appendix K and which gives the case number, gender, age, MBTI preference score level and grade level of administrative position was used during the analysis of the transcripts. This allowed for the identification of each piece of data as to all categories shown on the master list. As quotes and summaries of participants' comments are given in the narrative, they are identified by case number followed by page number of that case's transcript; i.e., (1-3), case 1, page 3.

As the data for each category were analyzed, each data bit was sorted according to MBTI preference score level. After 11 categories were analyzed, it became apparent that there were no apparent differences in the responses given by participants whose MBTI preference scores placed them in the low, moderate, and clear preference levels. However, some elements were common to the highest preference score level (very clear preference) which were different from the other three levels. These differences are noted throughout the data report and will be discussed further in Chapter 5.

Axial coding was used to identify the repeated words and recurring themes from all the categories. These were

then collapsed into three themes which provide for the basis of the theory formation as described and discussed in Chapter 5.

Participant Generated Definition of Intuition

The first category dealt with the participants' definition of intuition. The participants were simply asked to define "intuition." Three elements were common to all 20 definitions. The first element was a "feeling of rightness," or a "gut reaction." The second element was a variation of the first element with the participants combining the "feeling" with their experiences to provide the third element which dealt with a future orientation which involved the prediction of consequences. In other words, a feeling of rightness combined with experiences enabled the participants to be able to project the consequences of their decisions. This is best summed up with a direct quote from one of the participants that, "intuition is what you know without knowing how you know . . . beyond logic" (5-1). The five very clear preference participants' comments involved being able to see the big picture and with being able to see how the pieces fit:

You have a feel for what's going on. When a decision is to be made, you have a global look. I know what's going to happen here, there, there. When I use my intuition I can see the whole layout. (19-1)

. . . you take all the information you have and there's a feel about how things relate to each other. (18-1)

Extent of Intuitiveness in Decision Making

In response to the question, "To what extent do you use intuition in your decision making?", all but one of the participants reported that they used intuition at least 50% of the time. One participant (moderate preference score) reported that he used intuition a little more than average but not a lot. One participant said, "I don't make a whole lot of decisions based on just what's on the surface . . . the hard facts. I always believe there's more to it" (3-6). Of the five who ranged in the highest preference level, very clear preference, all reported using intuition from 75% to usually all the time. The one participant who reported that he did not use intuition very much in his decision making, and who also scored in the low preference score level, gave the following explanation when he was asked why this was so: "Because of (1) professional development, (2) educational preparation, (3) a failed experience or experiences . . ." (12-4).

Development and Enhancement of Intuition Skills

The interviewees were asked questions concerning the development and enhancement of their intuition skills. From these questions the third major category area developed. All 20 participants said that they had not consciously tried

to develop their intuition skills. When asked to think about it, the participants felt some of the things which had helped them to subconsciously develop intuition skills were: "just plain experience which has given me more confidence," "skills were just gathered through reading and research," "I do more thinking--I listen more," and "learning to trust your intuition." When asked for suggestions on how one might develop intuition skills, they answered with such suggestions as, "develop awareness of people and how they react" (19-8), "communication skills are critical," (7-7) "watch body language" (13-6), "practice being more open; listening is a key" (2-9), "meditation" (1-7) (5-6), "self awareness kinds of things" (15-6), "learn to accept that there is not one right answer" (15-6) and "bombard them with literature" (11-8). Several people mentioned reading and other activities to gather information to develop awareness, and seven people mentioned the importance of people, listening to and understanding people.

In answer to the question concerning what had changed or enhanced their intuition skills, the participants responded with such comments as, "simply by using the skill" (13-5), "not being so afraid of using intuition" (16-14), "just being conscious of the intuitive kind of thinking" (1-6), "learning to be a better listener" (6-5), "developing a high success rate of intuitive decisions" (15-5), "being a coach helped hone the use of intuitive or 'gut' decisions"

(5-5), "an expanded frame of reference" (12-5), "having a background as an English teacher helped; you learn to look past the facts into motivation." Two respondents said that major traumatic events in their lives, one a marriage (3-6) and another a divorce (1-6), had caused them to turn more inward and thereby enhanced their intuition skills. Generally, the comments of all participants seemed to point to two general elements in the development and enhancement of intuition skills: developing awareness (of self and of others) and building confidence through use of intuition.

When asked if they had consciously tried to bring their intuitive skills into play in decision making, five participants said "no." The other 15 said they were aware of occasions on which they had tried to use their intuitive skills. Seven said there were specific activities which helped them to be more intuitive about decisions: two take long showers (1-3) (13-5), one goes to bed (9-5), one prays (11-6), two run (20-6) (5-4) and one goes off by himself (1-5). Two people (8-1) (3-6) said that they pay attention to "reading" the people involved in order to be more intuitive and remind themselves to pay more attention to their own feelings about a situation.

Work Environment

The fourth main category area emerged in response to several interview questions such as, "What kind of decision maker does your district seek out?"; "How does your work

environment view unusual solutions to problems?"; "How does your district view shared leadership?; and "How does your district view brainstorming?" On all aspects of these questions, half said that their work environments were supportive, and the other half said that either their work environments were not supportive or that they were not practicing shared leadership or brainstorming. The ones who said their working environments were not supportive commented that their districts wanted decision makers who were not intuitive, who followed directions (1-6), who followed a format (1-6), one that will stay status quo (19-7), and basically want the opposite of intuitive decision makers (12-5). The ones whose work environments were supportive reported that their districts were cutting edge organizations who encouraged creativity and unusual solutions to problems (3-2). On the subject of shared leadership, the negative comments included "little room for shared leadership . . . forget it" (17-5), "they vocalize shared leadership but don't practice it" (12-5), and "they are afraid of it" (2-8). Those who reported that their work environments were supportive of shared leadership reported that their districts were in varying stages of implementing shared decision making and one said that "shared leadership is not just tolerated, it is absolutely encouraged" (3-7). Those who reported supportive work environments said that brainstorming was encouraged, "very definitely into

brainstorming," (3-11), and that brainstorming was "something that is inbred" (12-5). Those who reported that their work environments were not supportive said they have never known brainstorming to be practiced at the district level (1-8).

Common Characteristics of Intuitive Principals

Self Characterization

Several questions were asked which provided data for the fifth category. Participants were first asked to characterize themselves as decision makers. Nine interviewees said that they like all the facts and that they are careful, thoughtful, and methodical in their decision making. Seven participants said they make quick decisions, one saying that he was "impulsive" (6-1). Only one of the five in the very clear preference level said he was a quick decision maker, but he also commented that he is "learning to slow down and listen to more folks" (16-1). Four of the highest preference level participants said that they take time to gather information, usually from others, and four of the five at this level said that they are a lot less logical and methodical than people think. Some of the comments were:

I'm probably a lot less logical than people think I am.
A lot of decisions I make on gut feeling. (5-1)

I might present myself as a different decision maker than I really am. It sounds a little better if you have used concrete ways to make decisions. (19-8)

I make a decision internally but hold it inside until I check out some facts before making it final. Most people don't know that. (18-1)

Only four participants characterized themselves as a decision maker who goes to people in the early stages. However, when asked to identify the role that others play in their decision making, the comments are contradictory. This will be discussed in the discussion of the next category.

Risk Taking

Participants were asked if they considered themselves risk takers. Fourteen considered themselves risk takers; and, of these, seven considered themselves calculated risk takers who needed to feel they would be backed before they took risks, while the other seven considered themselves as definitely high risk takers. Three of the risk takers talked of the necessity of taking risks if change is desirable. None of the women considered themselves high risk takers. Of the five very clear preference level participants, all considered themselves to be risk takers. One commented that "I'm more and more willing to take risks . . . I'm willing to even do something that I really think a superior might really think it best not to do" (16-13).

Sharing Method of Decision Making

When asked how they felt about sharing their method of decision making, most said it was not something they do either because there hasn't been a forum for such discussions, or four said that they don't because it may be misunderstood:

I try to share or appear that I do. (15-3)

I've always avoided talking about my martial arts background. I've always known it had a big influence on the way I make decisions. (1-7)

I feel a little hesitant about it . . . I'm really hesitant and uncomfortable with my style. (11-4)

Only two felt that they were very open about the intuitive factor in their decision making.

Change

When asked how they feel about change, all participants' responses were positive. They spoke in terms of change being necessary, but they also mentioned the uncomfortable feeling associated with change. Five spoke of opposing change for change sake.

Shared Leadership

When asked to comment on shared leadership, all the participants responded with positive comments, although it was apparent that all were not practicing shared leadership.

Those at the slight or low and moderate preference levels tempered their comments with such remarks as the following:

I feel very strongly that my role has certain responsibilities that rest on my job . . . but every job can be shared to some degree. (10-5)

I have no problems if it's with the right people and the right circumstances. (2-6)

I think it's a good thing if done by the right kind of people. (5-4)

Most espouse shared leadership but would rather someone else made the decision. (17-4)

Of the five very clear preference level participants, all were practicing shared leadership and they all spoke of the benefit to people with such comments as, ". . . I'm beginning to understand that they're making better decisions and I'm getting what I want anyway" (16-11).

Brainstorming

When asked to give their views on brainstorming, all without exception, commented in positive ways, ranging from "wide-open listening" (16-10) to "it's a good activity, depending on what brains you've got storming" (20-5). Nine participants said that they practice brainstorming.

Off-the-Wall Ideas

Participants were asked what they thought of "off-the-wall" ideas, and only one did not think she would ever come up with off-the-wall ideas of her own. None of the participants seemed negative or threatened by very unusual ideas. All other comments ranged from "would probably give it more consideration . . . I'm open even when I feel there's just no way" (8-1) to "off-the-wall ideas have a valuable place" (5-3). Although some did not feel they were particularly ones who would come up with off-the-wall ideas, they were very open to those kinds of ideas coming from others: "I think you have to have them . . . I'm not one of the totally creative people . . . I recognize that others do have great ideas that may seem at first totally off-the-wall" (9-3). Another comment was particularly interesting: "You have to listen and be open to any idea . . . if you're not receptive to new ideas from the fringe, you'll soon not get any at all" (7-4). All of the five very clear preference level participants were very comfortable with off-the-wall ideas and with the people who had them. They did not merely tolerate these kinds of ideas, but they saw real value in them: "I think one of the reasons we don't find solutions to problems is we're not willing to look at the off-the-wall ideas" (16-7).

Hiring: What Type People

Participants were asked what type of people they would hire. Sixteen participants said they wanted and deliberately sought a "mix" of people on their staffs. Five participants said they probably had a tendency to hire people who are similar to themselves; two of these were in the very clear preference level and the other three were in the low (slight) and moderate preference levels. Another participant said, "I think subconsciously you want to pick people who will do things as they are being done, but consciously I try to look for people who will do things differently. I want people to think a little bit like I think" (20-5). Six people specifically mentioned that they wanted risk takers and three felt communication skills were of prime importance; four looked for enthusiasm. The comments from the very clear preference participants were more specific about what type people they would hire, especially mentioning things to look for in order to assure diversity: different schools, different backgrounds, change agents, open-minded, people who would ask for the chance to do something different and not be punished for failing. They didn't appear to be apprehensive at all of hiring nontraditional teacher types; they encourage free-thinkers, change agents, and risk takers.

Superintendents' Perceptions

When asked how they felt their superintendents perceived them as decision makers, three of the five interviewees with the highest preference scores said that their superintendents perceived them as being more logical and rational than they really were. Thirteen of the 20 said that their superintendents perceived their decisions as being good ones or of having confidence in their decisions. Two felt that their superintendents saw them as ones who make quick decisions and that that was not necessarily a positive trait in the superintendent's view (11-1). The fact that they involved others in their decisions was seen as a positive trait by superintendents (16-1) (4-2).

Peers' Perceptions

The participants were also asked how they felt their peers perceived them as decision makers. Five felt their peers perceived them as ones who would take a chance and who would be quick to make a decision. Others felt their peers perceived them as "odd ball" (16-1), "lives on the edge" (18-1), "someone who will make a decision if nobody else will" (3-2), and "one who lets a lot of peoples' opinions color my decisions" (16-1). Five of the participants said their peers perceived them as being very different as a decision maker than they really were:

They probably perceive me as being more logical and rational in my thinking than I really am. (5-1)

Probably very logical . . . Maybe we hide how we really are. (20-1)

They feel I usually have good decisions, although, myself, I've been unsure. (8-1)

I think they think I make better decisions. I don't think I make that great a decision because I don't put a lot of background into them or think all the way through them. (15-1)

Teachers' Perceptions

Participants were asked how their teachers perceive them as decision makers. Five thought their teachers perceived them as quick to make decisions; three said they would sometimes be perceived as indecisive. These were the ones who also like to take in a lot of information and used the term "methodical" to describe themselves as decision makers. Several thought their teachers had a more accurate perception of them as decision makers than others in the school district: "Because they work more closely with . . . they probably would think I may be a little more intuitive than what my peers or superiors may think of me" (20-1). The very clear preference level principals felt their teachers perceived them as being quick (two even said impulsive) and as someone whose decisions they could support (19-1), someone whose decisions reflect the teachers' feelings (18-1).

Common Elements of Decision Making of Intuitive Principals
Specific Decision

In order to begin to determine if there were common elements to the decision making of the 20 interviewees, they were asked to describe a particular decision in which they felt they used their intuitive skills. Five of the decisions described dealt with the firing of a teacher; five others dealt with implementing new programs; i.e., inclusion, multi-age, Channel 1, home visits; and the others dealt with policy issues (exams, sports, attendance). One of the common elements was that they had already decided on and implemented new programs that other principals were just now beginning to talk about or they were willing to make controversial decisions that no one else would, especially those dealing with the firing of teachers.

Two participants talked of looking at the cause of problems and including that in their solutions; for example, ". . . this was a weighty problem . . . listened to others, observed, did a great deal of thinking about the cause of problem" (13-2). Another common element that emerged was not being afraid of change; for example, "it may be that a lot of people are afraid of any kind of change . . . if they do something that doesn't work, they may be afraid people will perceive them as having failed. I'm not afraid of that" (20-3).

The decisions discussed by each of the very clear preference level participants all dealt with unusual decisions which involved risk taking or which were controversial. They talked of being able to live through the phase where some might not be happy with the decision because they knew the future benefits would be good. Another person talked of the importance of good timing. This comes through careful observation, talking to a lot of people, and having a feel for when it's right. Two of them talked of having a "feel" for the feelings of others and being able to predict their reactions.

One-Right-Answer Approaches to Decision Making

All of the participants said there is no one-right-answer. Some equivocated and said that "there are situations where there is just one right answer and it needs to be acknowledged very quickly" (4-6); and others said outright, "There are no one-right-answers" (18-3). Two participants talked of the change in their attitude toward one right answers over the years: "When I went to school and first started teaching there was that idea but that's changed for me" (5-2), and "I think I started out in administration focusing on there's probably just one answer . . . real quickly I learned that there are more" (4-5). Two participants spoke of their English and general humanities backgrounds as being helpful in being able to see several possibilities, "being a language arts person, I

always think there's another way to get at it" (11-4), and "English is a subject of ideas . . . it helps me to see possibilities" (2-4). Four participants spoke of the importance of others in their decisions; "the one-right-answer . . . comes with a better decision built on people's ideas" (13-3). The overall comments are well summarized with the statement of one participant, "To me that's (one-right-answer) not decision making. That's having a cookbook" (10-3).

Talking Themselves through Decisions

Participants were asked how they felt about "talking themselves through" decisions. All of the participants but two agreed that they either consciously or subconsciously go through this procedure when making decisions. They spoke of this as a mental process of trying to "get at all sides of the issue, who it's going to affect, if I do this . . . this will happen, etc." (5-4). Another of the very clear preference level participants said, ". . . self talk and then I talk to other people just trying to play things out" (19-6). They talked of the combination of reflection combined with the ability to predict consequences.

Method of or Place for Decision Making

Participants were first asked if there were a specific method of decision making and later in the interview they were asked if there were other methods to their decision

making. Five participants literally said they "sleep on it." One said that solutions often come to her in the form of dreams and that she will go to bed much earlier than usual if she has a difficult decision because she knows that solutions often come to her while she sleeps (9-8). Three people run when they have decisions, "A lot of times I will run. That seems to help . . . to get a little different perspective" (20-4); and two people walk, "at times, I just walk back into the woods so I can think" (8-1). Four people said they go driving in order to think more clearly.

Interestingly, two people said they take long showers when they have tough decisions because they've learned that solutions come to them when they're in the shower (1-4) (11-5). Ten participants said they go to a quiet place or isolate themselves some way. Two people liked to isolate themselves first and think about the problem, then talk to others for help in deciding. The other eight who said they needed to think in isolation also said that they talk to people first, gather data, then isolate themselves to "synthesize the information within my own frame of reference, then create a vision of the various outcomes" (12-2). Three people talked about the importance of talking to others and the ability to talk to people and make mental categories, storing verbal and nonverbal data, at the same time. One participant said, "Yeah, my mouth's moving and my brain's working" (11-5), and ". . . like to get in the car

and ride . . . play out scenes even to the body language" (15-4). Ten people make lists but only five make written lists and, of these, three "jot things down," write key points only or doodle, ". . . I doodle sometimes . . . I may draw a type of pattern to help me see things . . . not a list though" (1-4); three make extensive pro and con lists; and four make mental lists only. Interestingly, three people said they make pro lists only.

Role of Prayer or Meditation

Participants were asked what role prayer or meditation played in their decision making. All of the participants said prayer or meditation played a role in their decisions. Eight people spoke of meditation as opposed to prayer, and five people said that prayer played a great role in their decision making.

Role of Others

All of the participants felt that others were important in their decision making for two reasons: to provide a source of data and to act as a sounding board. Seven said they would always involve the people who would be impacted by the decision in the decision itself, and four said that they would involve those impacted by the decisions as sources of information. Six of the participants listed supervisors as persons who play a role in their decision making and one mentioned his superintendent. Twelve of the

participants said they deliberately seek out people whom they know are different kinds of thinkers from themselves, "he's very analytical and detail oriented and helps me see things that I don't always see" (9-3). All of the very clear preference level participants made some comment about seeking people who were different from themselves: ". . . she prefers making decisions on her own, likes to make extensive lists" (16-3). The very clear preference people also said they go to all types of people, in and out of education, and at all levels in education.

When asked if the approval of others affected their decision making, seven said they needed the approval of others, and five of those were the very clear preference level participants. One even mentioned that he was "overly influenced by the approval of others" (16-6).

Organization of Data

When asked how they organized their data when they had a decision to make, three participants said they were very structured and methodical, making lists of lists. All others spoke mostly of mental processes, "there's a mental legal pad" (3-9), or of scribbled points or notes. Two people spoke of jotting notes (comments and behaviors) down and then looking for "common threads where people are saying the same thing and I'm beginning to get a 'feeling' that this is the drift" (16-15). One person said he mentally looked at different actions and tried to look at the

consequences of each, mentally discarding and refining. The very clear preference participants seemed to be saying that they went back to people, sought people out, more than once in the process.

Feelings about Making Decisions without All the Data

When asked how they would deal with a situation where they had to make a decision and all the data were not available, all said they would go ahead and make decisions. The low or slight preference levels all said they felt frustrated, uncomfortable to very uncomfortable in these situations; however, four of the very clear preference participants said they were not at all uncomfortable with these decisions: "It happens all the time in this business; just go ahead and learn to do it: (5-6), "You never have all the information" (18-6), and "If all the data are not there . . . intuition must come in" (19-8).

Which Decision to Make with Several Alternatives

In response to this question, there is a noticeable difference between the very clear preference participants and the other three preference level groups. The very clear preference people talked about how the decision impacts on people as opposed to impacting upon the organization or the program; for example, "which path leads you most humanely" (19-8) and "you have to predict what is best for the person(s) involved" (18-7).

What Elements to Feel the Decision is Good

All participants conveyed the same thing. They talk about feeling, "gut," and "goodness" of the feeling: "I have to have a gut feeling based on knowledge" (3-1); "Most of it's intuitive; you have to know you're on the right track" (11-3); and "The answer comes to me and I know it's the right answer" (13-2). The very clear preference participants, in addition to talking about "goodness" or "gut" feelings, felt that a decision was only good if it was good for the people: ". . . not only for the person making the decision but for the people it will affect" (19-8), "if other people it's going to affect feel good about it" (5-6), and "how it affects others has a big part in which decision I make" (5-6). Other comments were as follows:

No loose ends . . . nothing dropping out of the bottom
. . . no questions about what I'm doing. (19-3)

I feel good . . . relieved . . . I don't beat myself to
death with it. (5-4)

I can go to sleep at night without nagging thoughts.
(19-6)

. . . maybe just by intuition, comfort level, or
feeling that you can leave it. (17-5)

There's this tingle that comes over me . . . I mean, there's this swaying toward one, and I just know it when I know reaction. (4-14)

I don't have the feeling that there's a loose end.
(19-3)

Test for Viability of a Decision

All of the participants said they bounce the decision off others. The interesting thing was that if they were bouncing the idea off another person, three people said they made sure they presented the idea in a format the other person preferred, even if it were not their own preferred method; for example, hard data and charts. Three others mentioned again trying to put themselves in the other person(s)' shoes to test if the decision would be a viable solution.

Time Factors

All participants but two said they make decisions very quickly. They then went on to say that they all try to gather as much information as possible and make a decision that feels right. This process seems to be accomplished rapidly.

Quickly think through all the possible alternatives and look past the decision to how it will impact. (7-2)

Just act . . . seems as if the information comes to me
and I just act. (13-2)

I almost always know early what the decision is.
(19-8)

I'm afraid I make decisions very quickly just based on
how I feel things should be. (16-1)

When participants were asked how their decisions would
be different if they had unlimited time, all of them said
they would feel uncomfortable about taking time and would
make the decisions quickly anyway. However, all of the very
clear preferences plus two from the clear preference group
said they would also try to gather more information with the
extra time, in addition to reiterating that they would still
make the decisions quickly. Their comments were as follows:

If I had until May, May would move to the end of the
week. I've decided to marry people in less time than
that. (3-4)

I make most decisions quickly. If it merits more
thought, I can do that too. (6-3)

If I had unlimited time I'm not sure the decision would
be any better. I don't like things hanging over my
head so I tend to go ahead and get it out of the way.
With unlimited time, I'd use it to talk to more people
and get more information. (5-2)

If I had all the information I needed, I'd probably make the decision in a day or two. I just don't need and don't like a long time to make a decision unless I need more information. (19-3)

Sometimes there's a tension or apprehension when you have too long to think about it. Sometimes I don't always come up with the best solutions when I have too much time to think about it . . . maybe it's because, I'm intuitive. (9-3)

Talk-Aloud Protocol

At the end of each interview, each participant was given a scenario (two letters as shown in Appendices I and J). One letter was from a concerned black parent to a black teacher. The other letter was from the teacher to the principal. Each participant was asked to talk through his or her decision-making process into a tape recorder. The following elements were common to all responses:

1. The participants all responded very quickly; none taking more than five minutes to read the letters and respond.
2. None of the participants said they would reply in writing.
3. All participants said they would talk to the teacher soon.

4. All wanted to go to people involved to gather information, either the teacher or the concerned parents.
5. Half of the participants said they would also contact the concerned parents immediately.

Chapter 5

SUMMARY, THEORY FORMATION, RECOMMENDATIONS, CONCLUSIONS

Summary of Procedures

The purpose of this study was to determine whether intuition affects the decision making of designated school leaders in Tennessee. If so, the purpose was to determine the extent that levels of intuition affect decision making of designated school leaders in Tennessee. Further, the purpose was to determine if there are common factors in the decision-making processes of designated school leaders in Tennessee.

The objectives were, first, to identify a sampling of intuitive school principals from a population of school administrators in Tennessee. The second objective was two-pronged: to identify and describe those characteristics which intuitive principals have in common, and to identify and describe the common factors in the decision-making process of these principals.

Summary of Findings

A brief summary will be given of the findings for each research question as follows:

1. Who, among a designated group of educators and school administrators, had preference scores which placed them in the low, moderate, clear, and very clear preference

categories on the intuitive domain of the Myers-Briggs Type Indicator?

Of the 337 school leaders tested using the Myers-Briggs Type Indicator, 120 were identified as intuitive. Of these 120, the participants' intuition scores placed 14 in the low or slight preference level, 11 in the moderate preference level, 30 in the clear preference level, and 65 in the very clear preference level.

2. To what extent did those in each category use their intuitive ability in decision making?

All but one of the participants reported that they use their intuitive ability in decision making more than 50% of the time. The very clear preference level responses were different from the other levels in that all five reported using their skills at least 75% of the time or more. Several interviewees reported that the extent of their use of intuitive skills increased over time and with the experience that their intuition was usually correct.

3. What was the relationship between the level of intuitive preference score and the extent to which the participant developed those skills?

The 20 interviewees answered questions pertaining to this research question in such a diverse manner that it was difficult to identify a clear relationship between the level of intuitive preference score and the extent to which the participant developed those skills. However, all but one of

the very clear preference level participants reported that they came from very supportive work environments, their creativity was valued, and they were already practicing (as were their school districts) such activities as brainstorming and shared leadership which could have led to the development of intuitive skills. Also, the very clear preference level participants spoke of consciously trying to do things which they felt would develop their intuitive skills, such as meditation, learning to listen better, reminding themselves to observe verbal and nonverbal behaviors, and mentally "replaying" scenes and interactions. The participants at the other three preference levels spoke in more general terms about their intuition being developed through experience, and only one person at the other levels spoke of consciously doing something to develop intuitive skills.

4. What structure or procedure for enhancing intuitive skills was used by those in each category of intuitive skill on the MBTI?

The interviews provided little data to support differences among the four preference levels with the exception of the very clear preference category. The very clear preference level participants stated that they actively sought out others who would offer diverse opinions and perspectives, someone who thought differently from them and who would broaden their perspective. The very clear

preference level participants also stated that most of their data organization was a mental process. Only one reported the keeping of concrete organizational strategies such as notes, lists, or charts. Most of the participants spoke of the need to isolate themselves and think about a decision; this varied as to place, time required, and whether it occurred at the beginning of thinking about a problem or when the decision was ready to be made. The very clear preference participants, however, thought about the problem in isolation first and then went to others for information. The key seems to be that the activities for enhancing intuitive skills were often very different; each person has simply been very observant and "intuitive" about what works for him or her. This is especially true of the very clear preference level participants.

5. Was the working environment of those who scored as intuitive supportive of intuitive thinking?

Half of the participants reported that their work environments were supportive of intuitive thinking and that their districts were practicing such intuition enhancing activities as shared leadership and brainstorming. These participants said that their districts encouraged and valued creativity and unusual solutions to problems.

The other 50% reported nonsupportive work environments even to the extent that their districts actively sought people who were the opposite of intuitive thinkers. Several

of the principals who worked in nonsupportive environments said they often felt they were different or that they were the "odd balls" in the organization and felt the need to temper their intuitiveness to survive.

6. What were the common elements of the decision-making process of participants who scored as intuitive on the MBTI and did these elements vary according to level of intuitive preference score?

Seven common elements of the decision making of the intuitive principals emerged from the data. The order in which they are listed and the findings summarized below do not reflect order of importance or significance.

a. Future orientation--A key element for intuitive thinkers dealt with their involvement with the future. Several participants spoke of being able to predict consequences of various actions and to predict the reactions of others. They stated that they used these skills in their decision making. Several said they had the ability to "see" the future, to see all the ripples emanating from a decision. This ability is associated with a high level of risk-taking behavior; in fact, they assume a confidence that their decision is right. They report that they "know" what is going to happen. Another way to characterize this phenomenon is to say that intuitive thinkers do not bog down in specifics of the present; their time is spent directed toward the future, on how their solution will impact on

others, and on how to "make it happen." All of the very clear preference level participants considered themselves risk takers. The slight and moderate preference level participants described themselves as "calculated risk takers."

Many of the participants talked of searching for a better way. Many of the risks they took in bringing about change were not considered risks for them because they were searching for a better way. This aspect of their future orientation caused them to be more comfortable with as well as initiators of change.

Another aspect of the future orientation was that most of the participants spoke at some time of being concerned with outcome, being able to predict outcomes, and being able to see long-range benefits. This was especially true of the very clear preference level participants who felt that being able to predict outcomes kept them tied to making the decision work rather than dealing with all of the obstacles.

b. Time orientation. All but two of the participants said they make decisions quickly. Some of the slight and moderate preference level participants described themselves as impulsive and ones who "shoot from the hip" and ones who would go ahead and make the decision quickly even if they had unlimited time. However, the very clear preference level people described themselves as more methodical and ones who would use extra time to gather more information.

The very clear preference level people also said they almost always decide internally early on but do not always make the decision known quickly. They spoke of this enabling them to change a decision before everyone knew about the original one. Therefore, this may be the reason they appear to be less impulsive and more methodical but still confess that they do make the decision very early. One person made a comment that seems to summarize well the group as a whole, especially the very clear preference list: "I make a decision internally but hold it inside until I check out some facts" (18-1). Though they differ in the way they check out the facts (research, talking to people), most of them say that they pretty much have a feeling early on about how the decision should go.

Some then make the decision quickly and others take more time, which could be caused by another aspect of personality other than whether or not they are intuitive.

c. Thinking globally. There was a sense, especially among the very clear preference level participants, that the timing of their decisions was good. Participants felt that this sense of timing came partly from the ability to see how "all the pieces fit," to predict the reactions of others, to be observant of others and to have a "feel" for when things were right. For these participants, being able to forecast what's coming up, to tell "where is this leading" is tied to having a feel for the right time to act. Participants

described themselves as being able to quickly take in lots of information, categorize it, and store it while they are still taking in information (either while talking to others or through reading). They felt that they can see the big picture early on and then go back and fill in the pieces. They also talked of being able to see how the pieces fit. According to participants, they do not deal with events or data in isolation; they said that they can look past the facts. They can "juggle" hard data with memories of nonverbal behavior and experiences with predicting and with pulling in relevant pieces from another problem area while taking in information through other means. It is the ability to do all this seemingly simultaneously that stands out as making them different from other decision makers.

d. Importance of others. Two aspects of the importance of others to the participants in this study became apparent: the importance of people as sources of information or decision partners, and the importance of considering and predicting the impact of decisions on others as influences on the decisions themselves. At one time or another in the interviews, all of the very clear preference level participants spoke of the humaneness, the fairness, or justness, of decisions to others as an influence on their decisions.

As a group, the very clear preference level participants practiced brainstorming and shared leadership

and they talked of the benefit to others rather than the benefits to themselves. All participants saw a need for divergent thinkers, for off-the-wall ideas, for risk takers and for change agents. However, only the very clear preference level participants used the words "value," "essential," or "consciously seek them out," when they spoke of these "others." They also said that the approval of others was an influence on their decisions.

e. "Feel." At one time or another in the interviews, all participants spoke of the "feel" for making the right decision. Some spoke of this feeling as a "gut feeling" and others spoke of a calm, a peace, a feeling that came to them sometimes suddenly (in the shower, in the car, in a dream) that "this is the answer." The very clear preference level participants all spoke of the ability to "stand back" and letting the solution come to them, of being able to feel that there were suddenly no important loose ends. They also spoke of having a "feeling" for how things were connected.

7. What were the indicators other than scores on the SN domain of the Myers-Briggs Type Indicator that identified those who are intuitive decision makers?

Two other indicators that may identify intuitive decision makers emerged from the interviews: intuitive decision makers tend to not "second guess" themselves, and they have a high comfort level with situations involving

change and risk taking. The intuitive principals spoke of being at "peace" once a decision was made and of the feeling that there were no loose threads. They rarely had nagging thoughts about a decision once it was made; therefore, they spoke in terms of directing energy toward making the decision work rather than wondering "what if"

As to comfort level with change and risk taking, not only do the intuitive thinkers in this study seem to be comfortable with change and risk taking and risk takers, but they seem to be uncomfortable without change and risk taking. As one participant put it, "I'm not really very comfortable when everything is very comfortable. Something is amiss. More comfortable and make decisions well when something is happening, kind of at the edge all the time" (19-6).

Theory Formation

The interpretation of the analysis of the data gathered in this study involved attaching meaning and significance to the analysis, explaining descriptive patterns, and looking for relationships and linkages among descriptive dimensions. The findings led to the formation of the following substantive theories about intuitive school leadership. Glaser and Strauss (1967) define substantive theory as a theory that relates to a particular setting and place at a particular time.

Theory

There are common elements in the decision making of principals who have the highest level of intuition (very clear preference) which are not common to those at the lower levels of intuition. Very clear preference level principals more consciously acknowledge their intuition than principals at lower preference levels do, thereby increasing their level of creative insight. There is a relationship between a high level of awareness and a supportive work environment.

Conclusions

The problem of the study is that little is known about how intuition affects the decision making of designated school leaders. From the results of this study, the following conclusions can be drawn:

1. There was a conflict between principals who felt that they could make good decisions quickly and without following a formal, systematic model for decision making and the realities of institutional life which they felt required them to at least appear to be making decisions using systematic models. This was especially true for the principals at the slight, moderate, and clear preference levels, and for women.

2. The high rate of successful decisions as reported by the principals (both their own assessment of their decisions as well as their superiors' perceptions) is attributed to the Janus-like model of decision making which

the principals exhibited. As a group the principals interviewed exhibited this ability to look to the past and project consequences. This combination of calling up experiences combined with a future orientation enables them to predict consequences or reactions. They spoke of being reflective, but they also spoke of categorizing and storing information in such a way that allowed for calling up the information in inventive, enlightened ways. The key is that, if reflection on the lessons of experience are logical and well founded, so will the intuition become.

3. All but one of the very clear preference level principals reported supportive work environments, and only two of the other fifteen principals reported environments supportive of the use of intuition. The conclusion to be drawn is that a supportive work environment is an overriding factor in the difference in the use and development of intuition by the principals in the study.

The very clear preference level principals differed from the slight, moderate, and clear preference level participants in several ways:

- a. they have more confidence in their intuitive skills
- b. they consciously try to bring their intuition into play when making decisions
- c. they are more comfortable with change, risk taking, unusual solutions, and unusual people

- d. they are more adept at asking the right questions

The less intuitive interviewees (slight, moderate, and clear preference) spoke of their intuition as more of a subconscious factor. They talked more of "gut feelings" and "shooting from the hip." They also spoke more of relying on experiences to guide them and less of projecting alternatives to predict consequences.

Recommendations

First, there is a need for activities which will raise the awareness of those who plan and implement professional development programs and advanced degrees in school leadership. Once this is accomplished, self-awareness activities should be considered as part of the preparation of school leaders. These self-awareness activities should be combined with opportunities for developing intuition skills in those who are highly sensing, and developing the sensing skills of those who are highly intuitive. A deciding factor in administrative effectiveness is an awareness of how one takes in information and makes decisions, not necessarily an attempt to do so one way or another. Another factor is the right match of people with circumstance. This can only come through awareness.

An awareness of one's weaknesses or the pitfalls of one's preferences is necessary to effective decision making.

However, energies spent in the development of decision-making skills should be directed through one's strengths. Preparation programs and work environments must help to identify intuitive thinkers and provide them with an environment which sees intuition as a strength, not as something to overcome or hide.

Implications for Future Research

It was not the intent to complete a definitive study, but to carefully document the insight of a given group of principals on the topic of intuition and decision making. The results of the study left several implications for future research.

There may be some link between job satisfaction and whether the work environment is supportive of intuitive thinkers. One implication for future research would be to discover if there is a relationship between intuition score and job satisfaction.

Another area of exploration could be to compare the responses of a sampling of very clear preference for Sensing with the findings from this study to see if true differences exist in the common elements of their decision making across all levels of demographic data with the very clear preference for intuition respondents from this study.

This study could be followed up with a case study of one of the interviewees. Observation over an extended

period of time could help to determine how the phenomena as stated in this study reveal themselves in actual practice.

There is also the possibility of this study being used as a springboard into further research for the development of training programs which will enhance intuitive skills of intuitive as well as sensing thinkers.

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APPENDICES

APPENDIX A
COVER LETTER

June 1, 1992

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX

Dear xxxxxxxxxxxx:

I am conducting a study entitled "The Effect of Intuition in Decision Making" as my doctoral dissertation in the Department of Educational Leadership and Policy Analysis at East Tennessee State University. I am using the Myers Briggs Type Inventory as an instrument for identifying those who score at different levels on the Intuition domain.

I understand that you have recently completed this instrument as part of your IEP and I would appreciate your making your scores on the MBTI available to me. If you agree, please sign your name on the attached release form, and kindly allow me to ask further demographic information. You are kind to come to my aid in this regard and I will gladly return any favor when you reach the dissertation stage or at any time in your program. Of course, names and location of employment will be held in strictest confidence and will in no way be used in this study.

I am enclosing a stamped, self-addressed envelope. Please find time to complete the form and return it to me. Thank you in advance for your cooperation.

With kindest regards,

JoAnne Horton

Enclosures

APPENDIX B
RELEASE FORM AND DEMOGRAPHIC INFORMATION SHEET

RELEASE FORM AND DEMOGRAPHIC
INFORMATION SHEET

I hereby give my permission for JoAnne Horton to have access to my Myers Briggs Type Indicator scores on the instrument recently given to me by the Department of Educational Leadership and Policy Analysis at East Tennessee State University. Also, the demographic information below may be used in this research project with the understanding that total anonymity is assured.

Signature

(Date)

Age 20-30___ 30-40___ 40-50___ 50-60___ 60+___

Gender Female___ Male___

School System_____

Present School Leadership Position_____

Level where majority of teaching experience occurred_____

Total number of years in education_____

SCORES ON THE SN DOMAIN OF THE MYERS BRIGGS

(Record only the raw score from your score sheet, I will figure preference score if you do not know.)

E score _____	I score _____
S score _____	N score _____
T score _____	F score _____
J score _____	P score _____

APPENDIX C
MYERS-BRIGGS TYPE INDICATOR®

PLEASE NOTE

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University Microfilms International

APPENDIX D
SPSS DATA SHEET

ID	001-----		1-3	SPACE 4
SEX	FEMALE 1	MALE 2 (1,2)	5	
AGE	20-30 1	31-40 2	41-50 3	
	51-60 4	61+ 5	6	
STATUS	PRINCIPAL 1	ASST. PRINC. 2		
	SUPERVISOR 3	SUPT. 4	7	
EDLEV	MASTER'S 1, MASTER'S+ 2, DOCTORATE 3			8
YRSEX	YEARS EXPERIENCE			9-10
YRSEXGR	1-10 1, 11-20 2, 21-30 3, 31+ 4 (1,2,3,4)			11
GRLEVTEX	ELEM 1, MIDDLE 2, HIGH SCH. 3 (1,2,3)			12 SPACE 13
INTEXT	INTROVERT 1, EXTROVERT 2 (1,2)			14
SENINT	SENSING 1, INTUITION 2 (1,2)			15
THIFEEL	THINKING 1, FEELING 2 (1,2)			16
JUDPER	JUDGING 1, PERCEIVING 2 (1,2)			17 SPACE 18

FOR THE FOLLOWING PREFERENCE SCORES:

SLIGHT PREFERENCE	(1-5)
MODERATE PREFERENCE	(6-10)
CLEAR PREFERENCE	(11-20)
	F DOMAIN, 11-15
VERY CLEAR PREFERENCE	(21+)
	F DOMAIN, 15+

PINTEXT	(1,2,3,4)	19
PSENINT	(1,2,3,4)	20
PTHIFEEL	(1,2,3,4)	21
PJUDPER	(1,2,3,4)	22 SPACE 23
CINTEXT	CONTINUOUS SCORE-INTROVERT-EXTROVERT	24-26
CSENINT	CONTINUOUS SCORE-SENSING-INTUITION	27-29
CTHIFEEL	CONTINUOUS SCORE-THINKING-FEELING	30-32
CJUDPER	CONTINUOUS SCORE-JUDGING-PERCEIVING	33-35

PINTEXT

APPENDIX E
CONVERSION TABLE FOR PREFERENCE SCORES AND CONTINUOUS SCORES

CONVERSION TABLE FOR PREFERENCE SCORES AND CONTINUOUS SCORES

E,S,T, or J			I,N,F, or P		
Diff. in Points	Preference	Continuous	Diff. in Points	Preference	Continuous
1	1	99	0	1	101
2	3	97	1	3	103
3	5	95	2	5	105
4	7	93	3	7	107
5	9	91	4	9	109
6	11	89	5	11	111
7	13	87	6	13	113
8	15	85	7	15	115
9	17	83	8	17	117
10	19	81	9	19	119
11	21	79	10	21	121
12	23	77	11	23	123
13	25	75	12	25	125
14	27	73	13	27	127
15	29	71	14	29	129
16	31	69	15	31	131
17	33	67	16	33	133
18	35	65	17	35	135
19	37	63	18	37	137
20	39	61	19	39	139
21	41	59	20	41	141
22	43	57	21	43	143
23	45	55	22	45	145
24	47	53	23	47	147
25	49	51	24	49	149
26	51	49	25	51	151
27	53	47	26	53	153
28	55	45	27	55	155
29	57	43	28	57	157
30	59	41	29	59	159
31	61	39	30	61	161
32	63	37	31	63	163
33	65	35	32	65	165
34	67	33	33	67	167

APPENDIX F
PILOT INTERVIEW QUESTIONS

**The Effect of Intuition on Decision Making: A Study
of Designated School Leaders in Tennessee**

PILOT INTERVIEW QUESTIONS

1. How would you define intuition?
2. Describe yourself as a decision maker?
3. What role do others play in your decision-making process?
4. What elements or factors are necessary for you to feel that you have made a good decision?
5. Is there a certain method or a certain place necessary to your being comfortable making a decision?
6. Given that you have to make decisions under time constraints, what considerations come into play for you?
7. If you had unlimited time, how would your decision-making process change?
8. How do you feel about sharing your method of decision making with those with whom you work?
9. How do you feel about "one-right-answer" approaches to decision making?
10. How does the approval of others affect your decision making?
11. How do you treat ideas which may be perceived as "unconventional"?
12. How does the environment in which you work encourage or discourage unusual solutions to problems?
13. Do you ever pray over decisions you have to make?
14. What other methods of "thinking about" a decision to be made do you utilize?
15. How do you "test" the viability of a decision which you are about to make?
16. If you were hiring, what type of people would you most likely hire?

(Appendix F continued)

17. How do you view the following:
Brainstorming
Shared leadership
"Talking yourself" through decisions
18. To what extent do you feel that you are intuitive in your decision making?
19. How do you consciously bring your intuitive skills into play?
20. Explain how you feel once you have made a decision.
21. How do you feel that your intuitive skills have changed over the years, beginning with you as a student?
22. How do you account for any change in your intuitive skills over the years?
23. What kind of a decision maker does your organization like and seek out?
24. How does your organization view the following:
Brainstorming
Shared leadership
25. How would you deal with a situation in which you had to make a decision and all the data were not available to you?
26. How have you tried to develop your intuition?
If you sought to develop your intuition skills, what kinds of things would you do?
27. How do you know which decision to make?
28. How do you know that a decision is right or good?
29. How quickly do you usually make decisions?
30. Were there any questions in this interview which were not clear to you?
31. Are there other questions which you think might give information about the effect of intuition on your decision making?

APPENDIX G
INTERVIEW QUESTIONS

**The Effect of Intuition on Decision Making: A Study
of Designated School Leaders in Tennessee**

INTERVIEW QUESTIONS

1. How would you define intuition?
2. Describe yourself as a decision maker?
- 3a. How do you think your superiors perceive you as a decision maker?
- 3b. How do you think your peers perceive you as a decision maker?
- 3c. How do you think your subordinates perceive you as a decision maker?
4. Can you give me an example of a decision you've had to make which your superiors perceive as being a good one?
5. What role do others play in your decision making process?
6. If you go to others for help in making a decision, what kind(s) of people do you seek out?
7. What elements or factors are necessary for you to feel that you have made a good decision?
8. Is there a certain method or a certain place necessary to your being comfortable making a decision?
9. Given that you have to make decisions under time constraints, i.e., crisis decisions, what considerations come into play for you?
10. If you had unlimited time, how would your decision-making process change?
11. How do you feel about sharing your method of decision making with those with whom you work?
12. How do you feel about "one-right-answer" approaches to decision making?
13. How does the approval of others affect your decision making?

(Appendix G continued)

14. How do you treat ideas which may be perceived as "unconventional"?
15. How much time do you like to take to make decisions?
16. How does the environment in which you work encourage or discourage unusual solutions to problems?
17. What role does prayer or meditation play in the decisions you have to make?
18. What other methods of "thinking about" a decision to be made do you utilize?
19. How do you "test" the viability of a decision which you are about to make?
20. If you were hiring, what type of people would you most likely hire?
21. How do you utilize the following:
Brainstorming
Shared leadership
"Talking yourself" through decisions
22. To what extent do you feel that you are intuitive in your decision making?
23. How do you consciously bring your intuitive skills into play?
24. Explain how you feel once you have made a decision.
25. How do you feel that your intuitive skills have changed over the years, beginning with you as a student?
26. How do you account for any change in your intuitive skills over the years?
27. What kind of a decision maker does your organization like and seek out?
28. How does your organization view the following:
Brainstorming
Shared leadership

(Appendix G continued)

29. How would you deal with a situation in which you had to make a decision and all the data were not available to you?
30. How have you tried to develop your intuition? If you sought to develop your intuition skills, what kinds of things would you do?
31. How do you know which decision to make?
32. How do you know that a decision is right or good?
33. How quickly do you usually make decisions?
34. When you do delay decisions, why do you do it?
35. Do you usually speak out what you're thinking?

APPENDIX H
INFORMED CONSENT FORM

East Tennessee State University
Institutional Review Board
INFORMED CONSENT FORM

PRINCIPAL INVESTIGATOR Jo Anne Horton
TITLE OF PROJECT The Effect of Intuition in Decision Making:
A Study of Designated School Leaders in Tennessee

1. Indicated below are the (a) purposes of this study, (b) the procedures to be followed, and (c) the approximate duration of this study:

The purpose of this study is to determine if there are common elements in the decision-making process of intuitive thinkers. An hour long interview will be conducted and tape recorded to assure accuracy in analysis. The tapes will be transcribed by the investigator so that the data can be analyzed using Ethnograph, a software package. After the tapes are transcribed, they will be erased by the investigator. Participants will be referred to by case number only so as to assure total confidentiality. The study will be conducted from July 20-August 30.

2. Discomforts, inconveniences, and/or risks that can reasonably be expected are:

NONE

3. I understand the procedure to be used in this study and the possible risks involved. If I have any further questions about this study, I understand that I can call JoAnne Horton at (615) 744-8873 or Dr. Charles Burkett at (615) 929-4430 who will try to answer any additional questions that I might have. I understand that I will receive a copy of this form to read at leisure.

I also understand that while my rights and privacy will be maintained, the Secretary of the Department of Health and Human Services and the ETSU Institutional Review Board do have free access to any information obtained in this study should it become necessary and I freely and voluntarily choose to participate. I understand that I may withdraw at any time without prejudice to me. I also understand that while East Tennessee State University does not provide compensation for medical treatment other than emergency first aid, for any physical injury which may occur as a result of my participation as a subject in this study, claims arising against ETSU or any of its agents or employees may be submitted to the Tennessee Claims Commission for disposition to the extent allowable as provided under TCA Section 9-8-307. Further information

concerning this may be obtained from the Chairman of the Institutional Review Board at 929-6134.

Date

Signature of Volunteer

Date

Signature of Parents or Guardian

Date

Signature of Witness (if applicable)

Date

Signature of Investigator

APPENDIX I

SCENARIO: TALK-ALOUD PROTOCOL

254 S. 4 Avenue

October 12

Mrs. Arvella Clanton
178 S. 15 Avenue
Monroe City, North Columbia

Dear Mrs. Clanton:

I represent a group of Black people who are concerned about the way our kids are treated at Janus Junior High School. We have scheduled a meeting of interested Negroes to be held in the Pentecostal church at 1 Avenue and Montrose on Wednesday evening, October 28. Because you are a teacher in the school we would especially like to have you come. Among other things we want answers to the following questions:

1. How are Negro children treated at school?
2. How well do Negro children achieve in relation to others?
3. What percentage of Negro children appear in slow or remedial groups?
4. For what reasons can children be suspended from school?

As a teacher in the school, you are in a special position to help us save our Black brothers and sisters from the oppression of the White man. We look forward to seeing you at our meeting next Wednesday evening.

Sincerely yours,

Bertha Whitney

APPENDIX J

SCENARIO: TALK-ALOUD PROTOCOL

October 19

Mr. Dail, I received the attached letter at home last Wednesday. I am very upset by it because I believe I have been invited only because I am Black. In fact, Mr. Oakes is the only other teacher I was able to find who got a similar letter. We are both concerned because neither of us feel we know the answers to the questions listed in the letter.

Mr. Oakes heard that we were going to be tested to see if we were "truly Black."

I feel torn between loyalties to my own people and loyalties to the school. What do you suggest I should do? I am very confused and need your advice.

Arvella Clanton

APPENDIX K
DEMOGRAPHICS--PARTICIPANTS, PHASE TWO

Geographic Region	Case No.	Gender	Age	MBTI	Grade Level of Administrative Position
	1	M	46	M	HS
	2	F	48	L	HS
	3	M	38	M	EL
	4	F	38	VCP	EL
	5	M	45	VCP	EL
	6	M	63	M	EL
	7	M	40	CP	EL
	8	F	40	M	EL
	9	F	48	L	HS
	10	M	52	CP	EL
	11	F	42	CP	M
	12	M	52	L	HS
	13	F	58	M	EL
	14	M	53	CP	M
	15	F	42	L	EL
	16	M	45	VCP	HS
	17	F	60	CP	EL
	18	F	55	VCP	EL
	19	F	44	VCP	EL
	20	M	43	L	HS

Preference Score Level

L = Low

M = Moderate

CP = Clear Preference

VCP = Very Clear Preference

VITA

JOANNE HORTON

Presently director of the American International Elementary School in Cairo, Egypt. Daughter of Mr. and Mrs. Joe Horton, she was born in Unicoi County, Tennessee. Two sons: Matthew and Kenny. Master's Degree--East Tennessee State University, Elementary Education.