An Analysis of Teachers' Beliefs-Practice Congruency as Evidenced in Preinstructional Teacher Planning Decisions

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AN ANALYSIS OF TEACHERS' BELIEFS-PRACTICE CONGRUENCY AS EVIDENCED IN PREINSTRUCTIONAL TEACHER PLANNING DECISIONS

by

Kathleen Cieplak Owens

A Dissertation Submitted to the Faculty of the Graduate School of Loyola University of Chicago in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

April

1981
This study sought to gather information pertinent to the concept of teacher thinking. Teachers' preactive planning decisions were analyzed in order to provide information concerning the relationship between teacher beliefs and teacher practice. Additionally, the influence of teachers' beliefs on the determination of planning style as well as types of decisions made was investigated.

The subjects were twenty-nine (29) experienced elementary school teachers working in the Chicago Metropolitan area. All twenty-nine (29) participants prepared an audio-taped recording of their preactive plans for a creative writing lesson based upon a previous day field trip to the zoo. Furthermore, all participants were administered the Educational Beliefs System Inventory (EBSI) and the Educational Practice Beliefs Inventory (EPBI) developed by Dobson, Dobson, Grahlman and Kessinger (1978).

The educational inventories established each teacher's individual position within a philosophical framework. As a result, teachers were classified on the basis of their philosophical beliefs concerning education and their beliefs concerning practice. Both philosophical beliefs and beliefs concerning practice fell into one of three categories (i.e., behaviorism, experimentalism, humanism) representing teachers' individual
difference variables. Audio-taped recordings of the teachers' creative writing lesson plans were analyzed and teachers' preactive planning decisions were categorized on the basis of six decision categories (i.e., content/subject matter, objectives, materials, learner, activities/instructional processes, and evaluation). Furthermore, each decision was classified according to type (i.e., behavioristic decision, experimentalistic decision, humanistic decision).

A bivariate correlation analysis was used to determine the degree of congruence between teacher beliefs concerning education and teacher beliefs concerning practice as measured on the EBSI/EPBI inventories. Bivariate analysis were also used to assess the relationship of teacher classification on the basis of the individual difference variables with decision categories and decision types. These relationships were further analyzed using a one-way analysis of variance procedure. Each null hypothesis used an alpha decision level of .05.

Results indicated that teachers do not discriminate among their philosophical beliefs concerning education as differentiated on the basis of the three prevailing philosophies of education delineated in this study. It appears that teachers identify with several philosophies in general, but with no one philosophy in particular. On the other hand, it appears that when the theoretical dimensions of an educational philosophy are interpreted in terms of educational practice, teachers are more likely to identify with one prevailing philosophy. Since teachers identify with several educational philosophies in
general, a beliefs-practice congruency estimate based upon the beliefs measured in the study could not be determined.

Teacher planning styles and decision types do not appear to be directly influenced by teacher beliefs. Regardless of teacher alignment with one of the three philosophical positions described in this study, teachers make similar kinds and types of preactive planning decisions.

Although this study had anticipated teacher decisions to vary concomitantly with teacher beliefs, the results do not support the significance of this relationship. Instead, teacher decisions appear to be influenced by factors associated with the theoretical dimensions of decision theory. It appears that teachers' preactive planning decisions are based upon the teacher's determination of a subjectively expected utility value for each course of action from within a limited set of alternatives. Consequently, teachers select the alternative that in their perception leads to the most desirable outcome.

Results also indicate that teachers' preactive planning revolves around the formulation of various instructional activities. Although teachers usually begin their planning with a consideration of content/subject matter, subsequent decisions are primarily concerned with the formulation of instructional activities. Teachers do not consider evaluation decisions to be a priority during the teacher preparation routine nor do objectives appear to be a starting point in the preactive planning process.
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Finally, a very special thank you to my family. To my parents, Emil and Mary Rose, for the personal motivation which was instilled at a very young age, I am very grateful. To my husband, Alan, for his encouragement, support, understanding, as well as domestic and culinary endeavors, thank you seems inadequate. And to our sons, Mark and Matthew, a heartfelt thank you from a mom who will have renewed availability for piano lessons, soccer games, little league games and homework.
VITA

The author, Kathleen Cieplak Owens, is the daughter of Emil Cieplak and Mary Rose (Scott) Cieplak. She is the wife of Alan Owens and mother of Mark and Matthew. She was born December 20, 1946.

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CHAPTER I

INTRODUCTION

Historical Perspective

The concept of teacher effectiveness research is not new. For decades, educational researchers have conducted studies using various approaches in order to obtain data to answer the questions "What works?" or "What works with whom?". Because such a large number of past studies have often times produced either inconclusive or contradictory results, some authorities (Clark & Yinger, 1979 b, p. 2) suggest that a more appropriate question for consideration asks "What is happening here, and why?". The goal of research focused on this latter question deals with understanding why teaching is as it is and has been referred to as research on teacher thinking (Clark & Yinger, 1979 b). This study will analyze some of the variables impacting on teacher thinking.

The field of research on teacher thinking has recently come into distinct focus in the lengthy and voluminous history of teacher effectiveness studies. An overview of teacher effectiveness research will serve to elucidate the relationship of research on teacher thinking to the concept of teacher effectiveness. The history of teacher effectiveness research has been appropriately summarized by Medley (1979) in describing the various directions such research has taken since its inception in the early 1900's. The number of published and unpublished studies dealing with the topic of teacher effectiveness is well over 100,000 (Biddle & Dunkin, 1974). In fact, the vast quantity of material
presently available has made evaluation and comprehension of these materials an almost impossible task. For the most part, research in this field has been poorly reviewed. Evidence of dissatisfaction with early teacher effectiveness research is obvious in the comments made by the Committee on Criteria of Teacher Effectiveness of the American Educational Research Association (1953).

The simple fact of the matter is that, after 40 years of research on teacher effectiveness during which a vast number of studies have been carried out, one can point to few outcomes that a superintendent of schools can safely employ in hiring a teacher or granting him tenure, that an agency can employ in certifying teachers, or that a teacher-education faculty can employ in planning or improving teacher-education programs. (American Educational Research Association, 1953, p. 650)

A number of reasons have been offered as possible explanations for the failure of early teacher effectiveness research. These include: (1) failure to observe teaching activities, (2) theoretical impoverishment, (3) use of inadequate criteria of effectiveness, and (4) lack of concern for contextual effects (Biddle & Dunkin, 1974, p. 13).

More recently, however, the research in this area has been better supported (Medley, 1979). A number of scholarly reviews (Brophy & Evertson, 1976; Biddle & Dunkin, 1974) have attempted to synthesize recent research findings in order to bring interested readers an analysis of available information. Another approach utilized by Medley (1977) eliminates the reviewers perceptions and brings the reader into proximal contact with relevant data. These recent publications do provide some insights which lend credibility to teacher effectiveness research. The disparity between the early and more recent studies becomes more obvious when viewed from a historical perspective.
In an attempt to delineate and organize existing and ongoing research, Medley (1979) has historically categorized teacher effectiveness studies into four distinct phases. Phase one stems from the early years where teacher effectiveness research focused on the personal characteristics of teachers labeled as effective. The manifestation of various traits determined to be essential, through many different types of measurement, was imperative for characterization as an effective teacher. The work of Boyce (1915) provides evidence concerning the diversity of approaches once used to characterize effective teachers. Biddle and Ellena (1964) describe the use of observation techniques, objective instruments, rating forms, and self reports as potential tools available for assessment of effective teacher characteristics. Researchers have collected a large quantity of information regarding teachers perceived as effective. The data, however, do not provide evidence that teachers exhibiting the effective characteristics are any more successful in helping students to achieve educational goals than teachers lacking these characteristics.

A second phase in the evolution of teacher effectiveness research focuses on the effective methods of teaching. Accordingly, students are divided into groups and taught identical lessons utilizing various teaching methodologies. The group of students showing significant gains in learning were described as being taught using the most effective teaching methods. The results of these experiments, however, proved essentially useless since the information was either inconclusive or contradictory.
Phase three is a more recent endeavor in the research on teacher effectiveness focusing on the behaviors of effective teachers. A teacher behavior is an act of the teacher which, if effective, produces pupil learning. The dynamics of effective teaching can be best understood when research attempts to establish a "cause and effect relationship between teacher behavior and pupil learning" (Medley, 1977, p. 6). According to Biddle, it is this "ability of a teacher to produce agreed upon educational effects in a given situation or context" (Biddle & Ellena, 1964, p. 20) that denotes teacher effectiveness. Likewise, Medley (1979, p. 16) defines teacher effectiveness in terms of the effects a teacher has on pupils stating that "the more pupils learn as a result of what a teacher does, the more effective that teacher is". The quantitative research that establishes these relationships is referred to as process-product research. This process-product approach is unique in that it is concerned with quantifying the amount of learning or achievement accomplished by groups of students (Clark, 1979). The measured end-product can then be attributed to the teacher behavior variable under study, thereby, establishing a relationship between the teacher behavior and student achievement. The development of methodologies appropriate for data collection, as exemplified by Flanders (1970) and Gage (1963), has led to the proliferation of information describing the behavior of effective teachers.

The fourth and final phase in Medley's historical analysis of research on teacher effectiveness involves the notion of competencies associated with effective teachers. Teachers who are effective possess a variety of competencies that contribute to their successful performance.
Teacher competence research is best understood when examined using the process-product model associated with teacher behavior research. In this model,

the behavior of a teacher is seen as an effect rather than a cause, assuming that the competent teacher behaves in certain ways because he or she is competent. A strong relationship between teacher effectiveness and a particular behavior characterizes competent teachers, and therefore may deserve to be called a competence. (Medley, 1977, p. 7)

From this viewpoint, competence is allied with teacher behavior in that it describes how one teaches. It is measured in terms of the teacher's behaviors, whereas effectiveness is measured in terms of pupil learning. A competent teacher has an appropriate selection of behaviors which may or may not be described as effective depending upon measured outcomes of student achievement. Research in the field of teacher competency includes an analysis of when and why teachers behave in a certain fashion, rather than the single dimension of how they behave.

Research on Teaching

This current focus of teacher competence research in Medley's historical analysis stresses the processes of teaching and has recently been referred to as research on teaching (Dunkin & Biddle, 1974; Peterson & Walberg, 1979). According to Doyle (1979, p. 203-4), "research on teaching has been viewed as a process of isolating a set of effective teaching practices to be used by individual teachers to improve student learning or by policy makers to design teacher education or teacher evaluation programs". In keeping with this definition, the present emphasis in the field of research on teaching involves three variables:
"measures of teacher effectiveness based on pupil learning, measures of teacher behavior derived from systematic observation of classroom interaction, and information about the teacher's intentions or purposes" (Medley, 1979, p. 16). Doyle's final variable, information about the teacher's intentions or purposes, has also been referred to as research on teacher thinking (Peterson & Walberg, 1979). An analysis of the plans and decisions that teachers make before they enter the classroom provides information about the teacher's intentions and purposes and, as such, adds to the storehouse of information available in the field of research on teaching. With advances in methodologies appropriate for data collection and analysis (Eisner, 1979; Peterson & Walberg, 1979), some of the reasons offered in explanation for the failure of early teacher effectiveness research have been eliminated. The door is now open for meaningful exploration in areas involving the three variables mentioned here.

Teacher Thinking

Taking into consideration Doyle's (1979) variable dealing with teacher intentions and purposes, the concept of teacher thinking comes into distinct focus. Within the domain of research on teacher thinking, the process of teacher decision making receives attention. Although investigations pertinent to teacher decision making as a function of teacher thinking may include "studies of reading diagnosis and remediation, classroom management strategies, instruction in areas of language arts, reading and mathematics, teacher education, teacher planning, effects of external pressures on teachers' decisions, and teachers' perceptions of student affect" (Clark & Yinger, 1979 b, p. 3), the problem
for consideration in this research study will focus solely on teacher planning decisions.

Decision making is one of the basic psychological processes that impacts on the ability of teachers to cope with their environment (Clark & Yinger, 1979 b, p. 4). Basic psychological processes, such as decision making, do not operate in a vacuum. Therefore, the psychological context in which the decision-making process is embedded, including "teacher's implicit theories, beliefs, and values about teaching and learning" (Clark & Yinger, 1979 b, p. 4) needs to be addressed. This study will consider the impact of the teachers' implicit theories on teacher planning decisions.

Teacher Planning

The importance of teacher planning for both the new and experienced teacher has been previously established (Morine, 1976; Yinger, 1980). The early studies dealing with the phenomenon of teacher planning were concerned with providing prescriptions for planning (Eisner, 1967; Taba, 1962; Tyler, 1950) as well as investigating the effects of interactive planning decisions on student learning (Zahorik, 1970). More recently, the study of teacher planning decisions has been addressed as a source of information concerning teacher thinking (Borko, Cone, Russo, & Shavelson, 1979; Shavelson, 1973, 1976, 1977). The separate concepts of teacher planning and teacher decision making have been integrated in recent studies which have examined preactive teacher planning decisions (Peterson, Marx, & Clark, 1978; Clark & Yinger, 1977,
Preactive teacher planning decisions are made as the teacher plans for lesson implementation prior to any interaction with students. These planning decisions occur within the intellect of the teacher and gathering information in this area is crucial for the study of effective teaching practices (Doyle, 1979). Information germane to preactive teacher planning decisions establishes an increased knowledge base relevant to the concept of teacher thinking which provides a framework for the research problem to be delineated here.

One of the complaints most frequently voiced concerning the competencies of novice teachers deals with their inability to plan lessons effectively. In fact, the ability to adequately plan for effective lesson implementation is a skill that many experienced teachers often lack. One reason for this inability may be that most preservice education programs present teacher planning as a function of either the rational ends-means model (Tyler, 1950) or the integrated ends-means model (Eisner, 1967; MacDonald, 1965). In both these models an orderly sequence of events leads to a planned lesson. The Tyler model states that productive planning begins with a statement of objectives, followed by the definition and organization of learning activities, and concludes with evaluative procedures. According to the integrated ends-means model, the learning activities are of primary importance. Effective planning begins with the determination and sequencing of appropriate learning activities in such a fashion that the objectives are generated from these activities. Again, a statement of evaluative procedure finalizes
this planning procedure. These two models have permeated the field of
teacher planning at all levels, from yearly planning at one extreme, to
daily planning at the other.

Recent empirical research dealing with preactive teacher planning
has verified neither of these models. In numerous studies the relative
importance of objectives has been minimal (Goodlad & Klein, 1974; Joyce
& Harootunian, 1964; Mintz, 1979; Zahorik, 1975), whereas the emphasis
on subject matter and content has been maximal (Mintz, 1979; Zahorik,
1975). There clearly is a discrepancy between the professed prescrip­
tive models and the reality of the planning situation. This study will
closely examine preactive teacher planning decisions in order to more
clearly define the planning function.

In attempting to address the disparity between theoretical plan­
ing models and empirical research findings, some researchers have begun
to analyze teaching with teachers defined as problem solvers, planners,
and decision makers (Clark & Yinger, 1977; Shavelson, 1973; Shulman &
Elstein, 1975). Although the connotations associated with these de­
scriptors envision the teacher as acting in a very logical and orderly
fashion, the reality of the interactions constantly pervading the class­
room environment would seem to preclude the purposeful and rational
thinking associated with decision making and problem solving (Jackson,
1968). During the preactive planning phase, however, the description of
teachers as decision makers and planners may be most appropriate (Yinger,
1980). This distinction creates a need to analyze preactive teacher
planning decisions as a characteristic of the thinking processes of
teachers. If teacher planning and teacher decision making are analyzed
as a function of teacher thinking, rather than as a procedure to be
followed as designated by a theoretical planning model, it is possible

to gather information concerning teacher intentions and purposes as de-
scribed by Doyle (1979). This study analyzes teachers' preactive plan-
ning decisions in order to provide information concerning the relation-
ship between teacher beliefs and teacher practice.

Teacher Decision Making

In order to gather information pertinent to teacher thinking,
two approaches are commonly used: the decision-making approach and the
information-processing approach (Clark, 1978). The decision-making ap-
proach, utilized in this study, is appropriate for studying deliberate
teacher decisions such as those made in planning situations. The
information-processing approach, on the other hand, is most appropriate-
ly utilized in interactive settings where teachers are faced with a com-
plex task environment involving spontaneous information-processing situ-
ations (Clark, 1978). Using the decision-making approach to studies on
teacher thinking, research is guided by the question, "Given a particular
situation, how do teachers decide what to do?" (Clark, 1978, p. 4).
The implications of the decision-making model for research in the fer-
tile field of teacher thinking, including teacher planning and decision
making, have been summarized by Borko, et al. (1979, p. 153).

1. It is a model that offers a broader perspective of the teaching-
    learning process than traditional approaches and leads to a re-
    conceptualization of other research and an integration of appar-
    ently contradictory findings.

2. It is a model that looks at the rationality of the teaching proc-
    ess rather than prescribing a single "best" way of teaching.

3. It is a humanistic model that depicts teachers as professional
decision makers who are competent in their field, rather than as
black boxes to be programmed with teaching skills.
4. It is an instructional model that...will give teachers more specific information about how and why they make certain decisions.

5. It is a model with direct implications for both pre-service and in-service training.

The applicability of this decision-making paradigm, represented in Figure 5 (p. 42), is especially significant for this research study since the personal beliefs (implicit theories) of teachers impact cumulatively on student learning (Dobson & Dobson, 1980).

As information concerning the dimensions of teacher thinking becomes available, including information concerning preactive teaching planning decisions, investigators in the field of research on teaching may take the initiative for redefining the teacher planning function. A study of preactive teacher planning involves an analysis of the decisions teachers make in designing a lesson for implementation. The decision-making processes utilized in making preactive teacher planning decisions have roots in classical decision theory. The theoretical framework of classical decision theory will provide the structure for discussing teacher planning decisions as they impact on teacher thinking.

Although classical decision theory is based in the fields of economics and mathematics, the language of classical decision theory has become a part of teacher decision-making analysis. The initial theoretical work in decision analysis had implications for business, politics, and gambling (Fishburn, 1964; Horan, 1979). Gradually, psychologists became interested in the behavioral implications derived from these theories. As will be discussed in greater detail
in Chapter II, the applicability of classical decision theory to teacher
decision-making analysis has evolved as a result of the impact of the be­
haviorists on the field of classical decision theory. In addition to pro­
viding a new orientation for looking at thinking and problem solving, the
behaviorists formulated modified theories. The modified theories of the
behaviorists are descriptive in nature as opposed to classical decision
theory which is normative. The normative approach of the classicists is
prescriptive and involves providing advice pertaining to what individuals
should do. The descriptive approach, on the other hand, deals with pre­
senting a statement describing what individuals really do. The research
on teacher decision making reflects classical decision theory but also
utilizes the descriptive theory advocated by the behaviorists.

Teachers' Implicit Theories

The study of teacher thinking is based in part on the assumption
that teachers refer to a personal belief system concerning both teaching
and learning. Teacher judgments and teacher decisions flow from a teacher's
personal perspective as regards teaching and learning as well as all
other innately held concepts. A teacher's implicit theories charac­
terize the conceptual bases from which the individual operates in making
judgments and decisions pertinent to teaching and learning (Clark &
Yinger, 1979 a).

Since the theoretical notion of teacher thinking deals with effec­
tive teaching practices occurring within the intellect of the teacher,
an analysis of teacher planning and teacher decision making which con­
siders teachers' perceptions of their educational beliefs and their educational practices will provide additional information relative to teacher thinking. Additionally, the rationale for establishing harmony (congruence) between implicit theories and practice will impinge on teacher planning, vis-a-vis teacher thinking.

The impact of teachers' implicit theories on teachers' thinking and the desirability of encouraging teachers to establish harmony between implicit theories and practice has been previously discussed (Dobson & Dobson, 1980; Kessinger, 1979). Reconciling one's self-reported beliefs with practice, referred to as beliefs-practice congruency, is essential for effective teaching (Dawson, 1976). Teacher planning and decision-making which does not recognize the need for a beliefs-practice congruency tends to focus on the rituals described in the prescriptive planning models rather than on the reality of each teacher's individual decision making and planning style.

The relationship of teacher beliefs to teacher practice and the effect of this relationship on preactive teacher planning decisions influences the total teaching process. Effective teaching as described by Dobson and Dobson (1980) necessitates the recognition of a "perceptual base line system". The "perceptual base line system" is a process approach to schooling that focuses on the facilitation of awareness of an individual's degree of congruency between his/her beliefs and day-to-day operations in the school setting. Additionally, the system provides group data that allow an individual to compare his/her personal beliefs with the collective beliefs of colleagues. The perceptual base line system is not designed to foster change, but to encourage self-awareness, self-acceptance, and harmony between self-reported beliefs and practice. (Kessinger, 1979, p. 8)
The perceptual base line system differs from the widely accepted mode of operation that permeates today's schools. According to Kessinger (1979) the schools of the late 1970's have been tremendously influenced by the back to basics movement as well as by an unceasing demand for accountability. Accordingly, most schools function from the perspective of a base line data system as opposed to a perceptual base line system. Kessinger (1979) has described the base line data system as follows:

Information obtained through some kind of needs assessment procedure designed to accommodate the institution being assessed as opposed to being sensitive to the persons within the institution. The person of the individual is viewed as a role player in an ongoing drama instead of as the person in the process. (p. 8)

Since the disparity which results from a mismatch of systems does not provide for internal harmony, some researchers (Dobson & Dobson, 1976, 1980; Kessinger, 1979) claim that more energy must be expended for the purpose of establishing individual beliefs-practice congruency.

In establishing the importance of a beliefs-practice congruency, Kessinger (1979) claims that

The learning climate of any school is an expression of the consciousness level of the administrators, teachers, counselors and other personnel. It is a unique ecosystem striving for inner-outer balance. These persons know how they would like to interact for the good of themselves and others; however, due to the imposed reality of role expectations, they may behave in manners which are contrary to what they know and feel. Any real improvement in the schooling process will occur only when each person's beliefs and feelings are in harmony with his/her behaviors. (p. 5)

Similarly, Combs (1978) holds that good teaching is a product of teacher beliefs or perceptions. He states:

Good teaching is not, it seems a question of right method or behaviors, but a problem solving matter, having to do with the teacher's unique use of self as he/she finds appropriate solutions to carry out the teacher's own and society's purpose. (p. 558)
Questions raised by MacDonald (1977, p. 20) and Ebel (1972, p. 3), which challenge curriculum theorists to make their value commitments clear, have been answered differently by individuals with varying feelings, values and beliefs. In response to such questions, the expressed purposes of education are as diversified and unique as the individual perceptual filters of those providing opinions (Kessinger, 1979, p. 14).

**Problem**

As a product of such statements, there appears to be a need for research which will ascertain the degree of congruence between the teacher's educational beliefs and the perceived expression of these beliefs via preactive planning decisions. Furthermore, there is a need to determine whether or not the degree of beliefs-practice congruence is reflected in the decisions made during the actual planning situation. In order that this research may be useful in pre-service and in-service teacher training programs, it is desirable to determine whether it is possible to prescribe appropriate planning techniques based upon one's personal perceptions concerning beliefs about educational theory and practice.

Results of this research could be utilized to provide both prospective and experienced teachers with baseline data concerning their perceived and actual planning and decision-making styles. Information of this nature might serve as a valuable catalyst for future personal and professional growth. Secondly, it may also provide a mechanism for an accurate assessment of the degree of planning and decision-making flexibility inherent in the preactive planning function.
Summary

The purpose of this chapter has been to establish the place of research pertinent to the topic of preactive teacher planning decisions within the domain of teacher effectiveness studies. The eclectic model seen in Figure 1 graphically illustrates the relationship of research dealing with teacher planning decisions to the field as a whole.

Teacher effectiveness studies have been historically categorized by Medley (1977) to include four distinct phases. The fourth and current phase deals with research on teaching. One of the three variables receiving attention in the field of research on teaching deals with teacher thinking. One area of concern in studies of teacher thinking portrays the teacher as a decision maker. Although Clark and Yinger (1976 b) delineate eight different areas for studies involving the teacher as decision maker, this study focuses solely on decisions concerning teacher planning.
TEACHER EFFECTIVENESS RESEARCH

Phase I: 
Teacher Characteristics

Phase II: 
Methods of Teaching

Phase III: 
Teacher Behavior

Phase IV: 
Teacher Competence

Research on Teaching

Teacher thinking

Teacher effectiveness based on pupil learning

Ethnographic studies of teacher behavior

Decision Maker

Problem Solver

Diagnostician

Information Processor

Planner

Teacher planning

Teacher education

Reading diagnosis & remediation

Effects of external pressures

Classroom management strategies

Perceptions of student affect

Instruction in areas of language arts

Reading and mathematics

Figure 1

Research on Teacher Planning Decisions within the Domain of Teacher Effectiveness Studies
CHAPTER II

REVIEW OF SELECTED LITERATURE

Introduction

This research study deals with the relationship of teachers' implicit theories to both perceived and actual preactive teacher planning decisions. The approach for studying these decisions, which are made as teachers plan for lesson implementation involves the decision-making approach to the study of teacher thinking (Borko, 1979; Clark, 1978). According to Clark (1978)

Research on teaching that is guided by the decision-making model seems to focus on explaining and understanding deliberate teacher activity. Jackson (1968) and Shavelson (1976) both indicate that the decision-making model is most appropriate for situations in which the teacher has sufficient time and incentive to deliberately decide what to do (as in teacher planning) than it is in the fast-paced context of classroom interaction. (p. 3-4)

Since this research study deals with teachers' preactive planning decisions, the decision-making model seen in Figure 5 (p. 42) will provide the framework for pursuit of information leading to answers posed by the research questions. The relationship of the decision-making model to the present study is represented in Figure 2 (p. 19).

Prior to an analysis of the decision-making paradigm, this chapter initially considers the topic of decision theory. Decision theory will be addressed from both a classical and behavioral perspective in order to place the concept of teacher decision making within a theoretical framework. The applicability of the decision-making paradigm will follow from the theoretical consideration of the decision-making process.
Decision Making Model (Figure 5)

Cognitive Information-processing Model

Preventive Planning Decisions

Interactive Classroom Decisions

TEACHER AS DECISION MAKER

Decision Maker (Teacher)

teacher decisions are studied using either

Decision Making Model

This model is used to study

Cognitive Information-processing Model

This model is used to study

these decisions pertain to

these decisions provide information concerning

kinds of information processed

ways in which information was processed

Figure 2

Approaches for Studying Teacher Decisions
Since the concept of educational beliefs is included within the framework of the decision-making model (Figure 5, p. 42), the relationship of teachers' implicit theories to teacher behavior will be considered within the context of the decision-making paradigm. And finally, since the particular type of decision being analyzed in this research study is a preactive planning decision, a review of the literature pertaining to teacher planning decisions will be presented.

Decision Theory

Decision making is "intertwined with all human activity" (Miller & Starr, 1967, p. vii). More specifically, "educators are, by necessity, decision makers...faced with the task of making decisions about how to plan learning experiences, how to teach, how to guide students, how to organize a school system, and a myriad of other matters" (Ary, Jacobs, & Razariak, 1972, p. 3).

Decision theory provides the framework for discussing teacher decision making. Decision theory can be approached through several disciplines: psychological (behavioral), economical, and mathematical (Lee, 1971). The format here will be to discuss classical decision theory from an economic and mathematical perspective; progress into its impact on behavioral theory; and, then, relate these theories to teacher decision making.

The initial theoretical work on decision making comes from the economic and mathematical worlds with application in business, politics, and gambling (Fishburn, 1964; Horan, 1979; Kogan & Wallach, 1964; Lee, 1971). Psychologists then became interested in the behavioral implications derived from those theories.
Economic theories of choice had been formalized over the last decades by Knight, Shackle, Marschak, and Arrow, among others. These approaches analyzed the expected consequences of decisions into two parts: The desirabilities of expected alternative outcomes, and the respective probabilities of the outcomes in question....The Process as a whole concerned thinking and problem solving (Kogan & Wallach, 1964, p. vi).

The theory generated from an economics framework is referred to as classical decision theory (Horan, 1979).

Decision theory rests on the cornerstone concepts of value and probability, both of which can be either objective or subjective in nature. Models of behavior built on the various permutations of these concepts, accompanied by an assortment of rules and assumptions, constitute the subject matter of classical decision theory. (p. 46)

From this description the two terms, value and probability, need clarification.

Value is simply the desirability of an object or outcome. Objective values would be numbers representing specific things. Within the framework of classical decision theory, objective value refers to the desirability of a particular outcome aside from any given individual's perceptions. For example, market values are sometimes described as objective values since the market value of certain products (milk, coffee) is a concept aside from one's belief that the price may be too high or too low (Horan, 1979). Subjective values, known as utilities, are numbers that measure worth in terms of a person's preferences or objectives (Miller & Starr, 1967). Subjective value refers to the desirability of a particular outcome while considering the individual's perceptions. Since the concept of subject value is central to decision theory, this concept will be elaborated.

Since very few values are objective, decision theory has centered mainly on subjective values or utilities. It has been called "utility
theory" and deals mainly with "preference structures and numerical representations of preferences structures" (Fishburn, 1970, p. vii). This work is highly mathematical and uses the axiomatic method (von Neumann & Morgenstern, 1947). Because utilities measure preferences, the debate has focused on how preferences should be measured. If data is measured through ranking or ordinal utility (for example, a city government prefers building a new airport over expanding present facilities over making no changes), the problem is that the degree of preference is not indicated (Horan, 1979). If data is measured through an interval scale or cardinal utility (for example, a new airport 10, expanding present facilities 8, making no changes 2), problems arise in combining utilities (Horan, 1979). Utilities are subjective values and, therefore, "there is no way to compare the utilities of different individuals" (Miller & Starr, 1967, p. 72). However, this "impossibility creates no unresolvable problems for decision theory as long as we are concerned with non-competitive situations, i.e., there are only states of nature at work" (Miller & Starr, 1967, p. 72). Though difficult to measure utilities, combined with probabilities, "dictate what decisions are- or ought to be- made" (Horan, 1979, p. 50).

Probability, the other cornerstone of decision theory, may be defined as the likelihood of a given event occurring (Horan, 1979); or, the "probability of an outcome can be most simply understood as the percentage of the times in which this outcome would occur if the event were repeated a great many times" (Miller & Starr, 1967, p. 75). An example of objective probability would be tossing the same coin in the air 50 times with heads coming up 25 times; the formula would be:
Probability of an outcome = \( \frac{\text{Frequency of that outcome}}{\text{Total number of cases}} \)

calculating the next toss \( \frac{25}{50} = .50 \)

Subjective probability occurs when talking about the probability of the Loch Ness monster, or future trends in society. An example would be a baseball coach's deciding on the probability of one player performing better in a crucial game than another. Player A may have a better record on paper but Player B may have been steadily improving, be tougher mentally, or be able to draw more walks than Player A (Horan, 1979). Personal preferences and assumptions are involved.

Taking the key concepts of value and probability, there are four possible combinations: objective value and objective probability, objective value and subjective probability, subjective value and objective probability; and subjective value and subjective probability (Horan, 1979). The matrix seen in Figure 3 graphically represents the four possible value and probability combinations.

![Value and Probability Combinations](image)

Figure 3
Value and Probability Combinations
It is the latter combination, subjective value (utility) and subjective probability in which most formal decision theory research occurs (Horan, 1979). Decision theory research in this realm utilizes "the subjectively expected utility maximization model" or SEU model (Edwards, 1954, 1961).

Solving the decision model consists of finding a strategy for action the expected relative value of which is at least as great as the expected relative value of any other strategy in a specified set. The prescriptive criterion of choice of a strategy will be maximization of the decision maker's total expected relative value. (Fishburn, 1964, p. 11)

Furthermore, Fishburn (1964) explains that the expected relative value of a strategy is simply a weighted sum of the relative values of the consequences, where the weights are the respective probabilities of the consequences occurring if the strategy is adopted and used by the decision maker. (p. 12)

Working with this model, several rules emerge when dealing with decisions whose outcomes, or consequences, are known, are unknown, or are uncertain. First, "decision-making under certainty occurs when we have a decision problem in which we know with certainty which state of nature will occur" (Miller & Starr, 1967, p. 108). The decision-making rule is to act in order to maximize utilities or minimize negative utilities (Horan, 1979). "All we need to do is find the strategy which has the largest payoff and that is the strategy which should be selected" (Miller & Starr, 1967, p. 111).

Second, decision making under risk occurs "where there are a number of states of nature but where the decision-maker knows the probability of occurrence of each of the states of nature" (Miller & Starr, 1967, p. 109). Here there is a payoff for each strategy; therefore "maximization of expected utility is the primary rule...." (Horan, 1979, p. 56).
Third, in decision making under uncertainty, the probabilities are not known. There are two basic strategies or rules to follow. Assuming the worst will happen, the decision maker uses the maximum criterion where the alternative with the largest minimum payoff is chosen (Miller & Starr, 1967). Oppositely, assuming the best will happen, the decision maker uses the maximax criterion where the alternative with the largest maximum payoff is chosen (Miller & Starr, 1967). (Decision making under partial information and under conflict will not be discussed here.)

In actuality, distinguishing risky decisions from uncertain ones may be impossible as it is difficult to be certain about "the probabilities of receiving utilities from the alternatives placed before us" (Horan, 1979, p. 57). Therefore "when confronted with a seemingly uncertain decision, the SEU model would suggest culling our pertinent experiences, affixing probability estimates according to our best 'guess-estimate', and then adapting the maximization of expected utility rule" (Horan, 1979, p. 58).

Achieving optimization of strategies or maximization of utility is an ideal (Horan, 1979). There are two concepts that deal with this reality. The first, termed suboptimization, occurs "when objectives are dependent, the optimization of one can result in a lower degree of attainment for at least some of the others" (Miller & Starr, 1967, p. 48). An example would be the ambitious executive whose career objectives would be optimized by taking a new position involving longer hours and more traveling. His personal objectives, being with his family, would be affected adversely (Miller & Starr, 1967).
The second concept dealing with the reality of optimizing strategies is "bounded rationality" (Simon, 1960). Humans can absorb, deal with, or consider a limited amount of information at one time. Miller (1956) asserts human capacity for considering data to be 7 ± 2 categories or chunks of information. "Information inundation can be quite as debilitating as information scarcity" (Miller & Starr, 1967, p. 62). As an example, to make the first move in chess one could consider 10^{120} possible move combinations (Eastman, 1972)! Simon's principle of bounded rationality asserts that people "define in a limited sense the ranges of outcomes (that probably could be delivered by their available strategies) which would be good enough. Then they select a strategy that is likely to achieve one of the good enough sets of outcomes" (Miller & Starr, 1967, p. 50). Bounded rationality is a statement about what people really do; it is a descriptive statement (Miller & Starr, 1967).

The preceding section, then, is a general description of classical decision theory. As was stated previously, the theory arose in economic and mathematical contexts. Psychologists examined classical decision theory and saw the inherent problems in applying it to their field but, they also saw some benefits. Because this research deals with teacher behavior, it will be relevant to look at behavioral decision theory. Formal research in behavioral decision theory similarly considers subjective value and subjective probability as described in Figure 3 (p. 23) but also adds a new dimension.

Lee (1971) differentiates decision theory as it pertains to psychology (behavior) from economic and mathematical decision theories.
Economists have been less concerned than psychologists with rationalizing observed human behavior and more concerned with choices that should be made to maximize profit or utility. Mathematicians, likewise, have usually been little concerned with explaining actual human choice. (p. 17)

Lee (1971) further explains:

Behavioral decision theory has largely been concerned with the hypothesis of general rationality plus the related peripheralia used to formulate and test the hypothesis....A distinction is often made between normative and descriptive decision theory. Normative decision theory is said to concern the choices that a rational man should make in a given situation, regardless of the choices that real men actually make. Descriptive theory is said to concern the choices real people actually make, regardless of the choices they should make. (However), the hypothesis of general rationality states that men do make the decisions they should make. If this is the case, normative and descriptive theories merge into one. (pp. 15-16)

Although it may be difficult to distinctly separate normative decision theory from descriptive decision theory, an attempt will be made to do so in order to clarify the impact of classical decision theory. The early classical decision theorists generally gave advice on what should be done. Such decision theories are normative (Horan, 1979). However, critics of normative theory hold that people cannot know all the possible consequences, all the possible choices, all the possible problems in the future, associated with the chosen strategy implementation (Fishburn, 1972). Also, since the theory assumes all possible choices are known, creativity of new alternatives is not provided for (Horan, 1979). The behaviorists are very concerned with generating new solutions, choices or responses (Horan, 1979). Fishburn (1972) explains the importance of creativity.

The process of developing alternatives or strategies occurs over a period of time and is (or should be) evaluative as well as creative. In searching for and constructing alternatives we bear in mind (or should bear in mind) the purpose of the inquiry and are constantly evaluating, often subjectively, the extent to which a course of
action may be able to accomplish these purposes....As indicated here
the processes of alternative creation and alternative evaluation are
inseparable. (p. 20)

Miller & Starr (1967) give three reasons why striving to attain
optimum utility from a normative theory is unrealistic.

First, an optimum decision, made at one point in time, is generally
suboptimum in terms of subsequent times....Second, there are fre­
quently an enormous number of possible choices of actions (strat­
egies)....Third, there are virtually innumerable factors outside the
control of the decision-maker. (p. 50)

These reasons led Miller and Starr (1967) to conclude that Simon's prin­
ciple of bounded rationality is realistic because it explains how people
do deal with these problems, using limited selectivity.

Horan (1979) believes that the inherent problems associated with
the normative theory have resulted in behaviorists turning more to descriptive theory (Horan, 1979). Lee (1971) states his purpose in behavioral
research is to search for and understand "human action in relation to
reason" (p. 1). Lee (1971) tackles the issue of rationality in decision
making by examining subjective probability, choosing between risks, prob­
ability learning, signal detection theory, information processing in de­
cision making, and game theory. His conclusion is that the research in
behavioral decision theory, while not proving or disproving man to be
rational in his decisions, is valuable because it "now better understands
the difficulties involved in asserting whether a choice is rational or
not" (Lee 1971, p. 322).

In past years psychologists have categorized their study of human
behavior from many perspectives: thinking, personality, opinions and
attitudes, aptitudes and abilities, and motivation (Kogan & Wallach, 1964,
p. v). It was with the advent of classical decision theory based in
economics that psychologists turned to a new orientation in looking at thinking and problem solving. The element of risk came into focus (Kogan & Wallach, 1964).

Parallels can be drawn between decision theory terms and behavioral theory terms.

The process as a whole (decision-making) concerned thinking and problem solving. The presence of consequences or "payoffs" introduced issues of personality and motivation. Matters of ability or aptitude could bear upon one's knowledge of the alternatives being considered. Further, questions of ideologies and attitudes could influence the evaluation of potential outcomes and of their likelihoods. (Kogan & Wallach, 1964, p. vi)

The focus of their study was to find out what risk taking has taught us about the psychology of thinking. The approach is more descriptive than normative.

Consideration of relevant moderating variables constitutes the basis of the research....The result has permitted us to investigate risk taking as it operates within a motivational context, to study the meaning of generality and specificity in risk-taking behavior, to examine relationships with cognitive-judgmental and intellective ability behaviors, to consider how different individuals react to the consequences their decisions generate, and to evaluate the influence of personality considerations in steering persons toward risk or conservatism. (Kogan & Wallach, 1964, p. vii)

The influence of classical decision theory on behavioral decision theory can be seen in Coleman's (1979) suggested aids for decision making in contemporary psychology. Coleman proposes five aids which can be correlated to key concepts of decision theory. First, Coleman (1979) advises avoiding impulsive action, taking time to examine what the effects of the decision might be and, thus, diminishing the likelihood of error. This is comparable to evaluating choices, assessing probabilities of outcomes, and trying to maximize utility (Horan, 1979). Second, Coleman (1979) urges the decision-maker to accept a "reasonable level of
satisfaction" (p. 363), avoiding long periods of vacillation. "Even if a superior solution is ultimately found, it may not justify the tremendous cost in anxiety and strain" (Coleman, p. 363). This paraphrases Simon's (1960) concept of bounded rationality where a strategy is selected from within a set of limited possibilities. Third, Coleman (1979) advises reducing "negative aspects of choosing" (p. 363) by trying to focus on the positive aspects of the decision. Decision theory presumes strategy optimization. Fourth, Coleman (1979) encourages persevering in a decision once it is made, but also keeping reserve choices in mind after a fair test of time shows the decision to be wrong. Decision theory assumes values and probabilities are taken into account, resulting in a worthwhile outcome while other alternatives are always available (Horan, 1979). Fifth, Coleman (1979) urges faith in one's goals and values, and advises being true to ourselves in choosing alternatives. Decision theory is based on the fundamental concept of individual preference or subjective value (Fishburn, 1972, p. 21).

To further study the effect of decision theory on behavior the work of Janis and Mann (1977) will be considered. Classical decision theory does not explain the influences of our value preferences, does not explain why our values change or remain stable, does not explain why we choose to consider some information and ignore other facts, and does not explain irrational decisions (Horan, 1979).

Janis and Mann (1968, 1977) sought the answers to these questions by looking at studies dealing with attitude change, cognitive dissonance, conformity, and commitment, among other (Horan, 1979). From their research, Janis and Mann (1977) have developed a conflict theory on
decision making "to be useful not only for generating basic studies of psychological processes involved in conflict, choice, and commitment but also for developing practical means to improve the quality of decisions made by individuals and groups" (p. xv). The aim "is to fill a long-existing gap in the behavioral sciences—to provide a comprehensive descriptive theory of how people actually cope with decisional conflicts" (Janis & Mann, 1977, p. xv). As with other research pertinent to decision theory, the conflict model deals with subjective values and subjective probabilities as diagrammed in Figure 3 (p. 23).

The major theoretical components of the conflict model of decision making as seen in Figure 4 are hot and cold decisions, vigilant information processing, and coping patterns in decisions (Janis & Mann, 1977). Briefly, cold decisions are those whose value or utility is not vital for happiness while hot decisions are made under stress with utility values (Janis & Mann, 1977).

From the literature, Janis and Mann (1977) have synthesized seven major criteria that can be utilized in determining whether decision-making procedures are of high quality.

The decision maker to the best of his ability and within his information-processing capabilities
1. thoroughly canvasses a wide range of alternative courses of action;
2. surveys the full range of objectives to be fulfilled and the values implicated by the choice;
3. carefully weighs whatever he knows about the costs and risks of negative consequences, as well as the positive consequences, that could flow from each alternative;
4. intensively searches for new information relevant to further evaluation of the alternatives;
5. correctly assimilates and takes account of any new information or expert judgment to which he is exposed, even when the information or judgment does not support the course of action he initially prefers;
6. reexamines the positive and negative consequences of all known alternatives, including those originally regarded as unaccept­able, before making a final choice;

7. makes detailed provisions for implementing or executing the chosen course of action, with special attention to contingency plans that might be required if various known risks were to materialize. (p. 11)

"When a decision maker meets all 7 criteria, his orientation in arriving at a choice is characterized as vigilant information processing'" (Janis & Mann, 1977, p. 12).

The influence of classical decision theory is seen in the use of the terms: alternatives, objectives, values, costs, risks, negative consequences, and positive consequences. The third theoretical component of the conflict model of decision making is the coping patterns in de­ciding. They are unconflicted adherence, unconflicted change, defensive avoidance, hypervigilance, and vigilance (Janis & Mann, 1977, p. 70). These theoretical components are portrayed in Figure 4.

Janis and Mann's (1977) model of conflict decision making pro­vides an example of how behaviorists took the elements of classical deci­sion theory, such as risk, consequences, alternatives, and strategies, and developed a theory for intervention in decision-making processes.

Having discussed classical decision theory and its impact on beh­avioral theory, its influence on teacher decision making needs to be examined (specific information concerning teacher decision making is discussed in the next section). Referring back to Figure 3 (p. 23), re­search on teacher decision making occurs within the context of chamberD where consideration is given both utilities and subjective probabilities. The behaviorists impact on this permutation through consideration of decisions from a descriptive perspective as opposed to the normative
Figure 4
Conflict Model of Decision Making
(Janis & Mann, 1977, p. 70)
perspective which characterizes the classicists. The research on teacher
decision making reflects classical decision theory but also utilizes the
descriptive theory advocated by the behaviorists.

Reflecting the influence of classical decision theory, Shavelson
(1976) uses the terms alternative acts, states of nature, outcome, utili-
ties, and goals in describing the features of teacher decision making.
Similarly, the influence of Simon's (1960) principle of "bounded ration-
ality" to deal with information overload provides a framework for the no-
tion that teachers make a "best guess" estimate (Borko et al., 1979) in
a variety of situations. The factors that contribute to teachers prein-
structional decisions as described in Figure 5 (p. 42): information
about students, beliefs about education, nature of task, availability of
alternative strategies and materials, and inferences about students
(Borko et al., 1979) have roots in decision theory. Teachers have sub-
jective values which influence decisions (Borko et al., 1979). Shavelson
(1976) is concerned with teacher decisions that are designed to "optimize
student outcomes" (p. 376). Optimization of outcome is the goal of
effective decision making.

Aspects of behavioral decision theory, which "aspires to give an
accounting and explanation of human behavior" (Lee, 1971, p. 16), can be
seen in discussing teacher decision making in terms of what teachers
should do (normative) and what they actually do (descriptive). Lee (1971)
Attempts to "rationalize" decision making using the hypothesis of general-
rationality in his behavioral research as Borko et al. (1979) attempted
to do in their model of preinstructional decisions. The assumption is
that teachers behave to some degree in a rational way.
Before discussing the specifics of teacher decision making, it is important to emphasize three significant points.

1. Classical decision theory influenced behaviorists in two ways. First, it provided a new orientation for looking at thinking and problem solving. Second, the problems with the classical decision model resulted in formulation of modified or altered theories.

2. These modified theories are more descriptive in nature than classical decision theory which is more normative.

3. The language of classical decision theory, as will be shown, has become a part of teacher decision making analysis. The approach of the behaviorists, however, has influenced teacher decision making analyses in the sense of being more descriptive than normative.

**Teacher Decision Making**

Reiterating, the purpose this study is to examine the preactive planning decisions that teachers make, and then determine if those decisions are consistent with their perceived beliefs and practices as well as their actual practices. In other words, do these teachers exhibit a beliefs-practice congruency? Recent research on teacher decision making will assist in creating a framework in which to pursue this question.

Teaching practices and strategies involve continual decision making. "Most, if not all teaching, then, is based on decisions made by the teacher after complex cognitive processing of available information" (Shavelson, 1973, p. 144). This is not to say that teachers make all the decisions relevant to education. Various publishing
companies, educational enterprises, and educational researchers provide guidelines and data in support of decisions that they prescribe (Strasser, 1967). Additionally, other decision-making personnel, such as administrators and curriculum designers, may strongly influence or determine teachers' preactive planning decisions.

Research has shown that preactive teacher planning decisions usually pertain to the following categories (Peterson et al., 1978): subject matter or content, lesson objectives, learners, materials, instructional processes or activities, and evaluation. Decisions pertinent to any of these categories involve value and judgments, whether consciously or unconsciously made, and may or may not be in agreement with a teacher's educational beliefs. It is anticipated that the present research will reveal strategies and practices deemed important by each individual teacher as preactive planning decisions are made and, more importantly, assess the degree of theory/practice congruence.

To assist with the analysis of teacher decisions, Shavelson (1976) describes five features of the decision-making process. These features are rooted directly in classical decision theory and are utilized from a behavioral perspective. In the language of decision analysis, the basic elements of the process include, first, choosing from a repertoire of alternative acts. These represent actions that are available to the decision maker and controlled by his/her own choices (Elstein, Shulman, Vinsonhaler, Wagner, Bader, 1978). Faced with these choices, the decision maker must select one course of action from the set of all possible alternatives. Secondly, states of nature impact on the decision process. States of nature refer to the different possible conditions influencing
the system. These states refer to conditions not directly under teacher control but which influence the effectiveness of some course of action to be taken. A third component included in the decision-making process deals with outcomes. Outcomes refer to predictable results that may occur from a course of action combined with a state of nature (Shavelson, 1976). Fourthly, probabilities impact on the decision process. According to Elstein et al. (1978), probabilities are estimates, either subjective or objective, of the likelihood that each listed state of nature does in fact exist, or that each outcome will occur, or of observing a particular sign or symptom in a particular state of nature. (p. 5)

The probabilities, when combined with utilities, provide a subjective evaluation about the outcomes providing the decision maker with information concerning the value or worth of the outcome. And, finally the fifth feature in Shavelson's (1976) analysis of teacher decision making refers to the goal, that to which the teacher strives as an end. The goals which are determined by each individual teacher may vary based upon such individual differences as educational beliefs (Kerlinger & Pedhazur, 1968; Kessinger, 1979) and cognitive styles (Morine & Vallance, 1975; Peterson et al., 1978). The impact of these variables will be discussed in greater depth later in this chapter.

In applying these five features to studies of teacher decision making, various researchers (Borko, 1978; Markle, 1977; Shavelson, 1973, 1976, 1978; Shavelson & Borko, 1979; Shavelson, Caldwell & Isu, 1977) have used a descriptive behavioral approach within a classical decision theory framework. Since the present research study seeks to determine the degree of congruence between educational beliefs and educational
practice with regard to preactive teacher decision making, this description of the decision-making process as well as the applicability of the decision-making research paradigm diagrammed in Figure 5 (p. 42) has relevance. With the theoretical components of the decision-making process fully elaborated, the discussion will now turn to an analysis of the research models utilized in the study of teacher thinking i.e., teacher planning and teacher decision making.

Choice of a Model

As summarized in Chapter I, various paradigms have been previously utilized to gather information in the field of research on teaching and "only recently have teacher intentions, goals, judgments and decisions been admitted as a legitimate part of research on teaching" (Shavelson & Borko, 1979, p. 183). The criterion-of-effectiveness paradigm produced thousands of, often times, disappointing and inconsistent correlation coefficients while the teaching-process paradigm was found to have important conceptual limitations, the most severe limitation being the failure to take into account teachers' goals, motives, knowledge, plans, decisions, and the like (Shavelson & Borko, 1979). The limitations associated with these paradigms have led to the development of a new paradigm, the decision-making paradigm, which considers the teacher as an active, intelligent professional whose activities include: setting instructional goals; seeking information about students and curricula in the context of these goals, formulating hypotheses on the basis of this information, his or her own proclivities toward teaching, and the teaching environment; and selecting among alternative teaching methods and instructional materials on the basis of these hypotheses. This new decision-making paradigm incorporates its predecessors in that teacher characteristics are expected to influence the information teachers seek and the way
they use the information in making decisions. And it considers teaching skills and methods as a subset of the alternative courses of action among which a teacher must choose in order to carry out instruction. (Shavelson & Borko, 1979, p. 183)

Within the framework of the field of research on teacher thinking, the teacher has been viewed as an information processor (Shulman & Elstein, 1975; National Institute of Education, 1975), a decision maker (Shavelson, 1976, 1979; Clark & Joyce, 1975), a planner (Yinger, 1977, 1980), a diagnostician (Vinsonhaler, Wagner, & Elstein, 1977), and a problem solver (Joyce & Harootunian, 1964). With such a diversity of possible classifications, it is essential to select an appropriate model for pursuit of questions and issues which pertain to the thinking of teachers. Two research models dominate in the field of research on teacher thinking: a decision-making model and an information-processing model. According to Clark (1978), in the decision-making model the teacher is seen as someone who is constantly assessing situations, processing information about these situations, making decisions about what to do next, guiding action on the basis of these decisions, and observing the effects of the actions on students.... The information-processing model focuses much less on the decisions that teachers must make. Rather, it describes the teacher as a person who, faced with a very complex task environment, copes with that environment by simplifying it, i.e., by attending to some small number of aspects of the environment and ignoring others. (p. 3)

Several researchers (Clark, 1978; Jackson, 1968; Shavelson, 1976) indicate that the decision-making model is most appropriately used in situations where the teacher has both time and incentive to make deliberate decisions, i.e., teacher planning. The decision-making model tends to focus on understanding and explaining deliberate teacher activity (pre-active planning decisions) as opposed to the information-processing model which focuses on the spontaneous decisions made within the context of
the fast-paced classroom setting (Clark, 1978). Although the decision-making model has been used in research studies involving an interactive setting (Peterson et al., 1978), the research question usually asks "What kinds of decisions do teachers make during classroom interaction?" (Clark, 1978). The information-processing approach, on the other hand, investigates "the kinds of information teachers processed during instruction and the ways in which the information was processed" (MacKay & Marland, 1978, p. 2). In a recent study of teacher thinking using the information-processing model (Marland, 1977), data were compiled to show how teachers process their complex task environment by dividing it into simplified problem spaces and how these problem spaces influence subsequent action. Newell and Simon (1972) argue that since individuals can handle only a limited amount of information at a given time, they construct a problem space to simplify the process of selecting a strategy for completing a task. The problem space includes a set of potential responses from which an appropriate selection can be made in order to provide a solution for a particular task. As a component of the information-processing model, an analysis of the problem space provides insights into how teachers process information in order to cope with a complex environment by attending to some things and ignoring others. In contrast, the decision-making model used in the Peterson et al. (1978) study focused on the frequency and nature of decisions made in a relatively structured situation lacking the influence of a complex task environment. In assessing the applicability of these two models within the field of research on teacher thinking, Clark (1978) concludes
that research guided by a decision-making model of teaching tends to be highly controlled, focusing on the decision-making behavior of teachers in situations defined by the researcher. In contrast, the research guided by the information-processing model tends to be descriptive; it explores the ways teachers define the situations in which they work and cope with an environment so rich in information that it far exceeds the processing capacity of the human mind. (p. 10)

Since this research study deals with teachers' preactive planning decisions, the decision-making model will provide the framework for gathering information pertinent to this aspect of teacher thinking.

**Decision-making Paradigm**

A number of models have been proposed to account for teacher planning decisions (Borko, 1978; Clark & Yinger, 1979; Russo, 1978; Shavelson, 1973, 1976, 1978; Yinger, 1977). The most recently developed model, and the one utilized in the present study, (Borko et al., 1979, p. 139) attempts to identify the information teachers consider important in making their preinstructional decisions (Figure 5).

The decision model identifies several important factors that are expected to affect teachers' decisions about instruction. Teachers deal with a large amount of information about their students from many sources....The model suggests that, in order to handle the "information overload," teachers integrate this information into a few "best guesses" (estimates) about the student's learning, feelings and behavior. These estimates may influence teachers' plans for instruction and the decisions they make, consciously or unconsciously, during instruction. As the model indicates, plans and decisions may also be influenced by the teachers' educational beliefs and the nature of the instructional tasks. The instructional task may also indirectly affect instructional decisions by limiting the alternative strategies that the teacher considers. Finally, the availability of strategies and materials may influence decisions by limiting or expending the number of alternatives from which the teacher can choose. (Borko et al., 1979, p. 140)

Based upon the model shown in Figure 5, the processes involved in making a particular decision are identified. The model provides one way of
Some factors contributing to teachers' preinstructional decisions

Figure 5
Decision Making Model
(Borko et al., 1979, p. 139)
thinking about teaching from a decision-making perspective in addition to suggesting a set of questions and conjectures about components of the teacher's planning process (Shavelson & Borko, 1979, p. 184). With the teacher viewed as a decision maker, each teacher has a repertoire of teaching strategies (alternative acts) that are potentially useful for a particular situation. The choice of a particular teaching strategy (an instructional decision) depends upon the teachers' information about the students, beliefs about teaching and learning, the nature of the instructional task, as well as the constraints of the situation.

Looking at each component of the decision-making model represented in Figure 5, researchers have provided varying amounts of information pertinent to each of the areas impacting on the instructional decision. One area of consideration for teachers when making instructional decisions relates to information or cues about students. A number of studies (Barr, 1975; Borko, 1978; Russo, 1978; Shavelson, 1978; Shavelson & Atwood, 1977; Shavelson et al., 1977) have examined the types of information that teachers consider in making inferences or estimates about students prior to making instructional decisions. Because such an abundance of information is available, teachers usually handle this information overload by integrating the information within the limits of "bounded rationality" (Simon, 1960). In reading instruction (Barr, 1975) use of the bounded rationality strategy leads to the formation of reading groups based upon ability estimates determined through consideration of relevant information. Generally speaking, teachers seek information pertinent to students' general ability or achievement, class participation, self-image, social competence,
classroom behavior, and work habits (Borko et al., 1979). Consequently, the estimates that teachers make relevant to instructional decisions may vary depending upon the different pieces of information considered.

Another component of the decision-making model impacting on teacher planning decisions concerns the dimension of educational beliefs. To further define the impact of educational beliefs on teacher decisions, recall that in Figure 3 (p. 23) the focus for decision theory research was relegated to chamber D where utilities and subjective probabilities impact on one another. The decision-making model proposed by Borko et al. (1979) in Figure 5 falls within the confines of chamber D in Figure 3 and allows the study of teacher decision making to proceed within a classical decision theory framework while, at the same time, permitting the application of descriptive theory from a behavioristic perspective. Looking at the portion of Figure 5 entitled "Beliefs and attitudes about education", the impact of this variable on preinstructional teacher decisions can be visualized.

The study of teacher thinking, which encompasses teacher planning and teacher decision making is based in part on the assumption that teachers refer to a personal beliefs system concerning teaching and learning (Clark & Yinger, 1979). Among researchers there are various ways of characterizing teachers' educational beliefs and the impact of these beliefs on the decision-making process (Brophy & Good, 1974; Clark & Yinger, 1979; Duffy, 1977; Janesick, 1977). For purposes of this study, the conceptual bases which establish an individual's educational beliefs have been designated as the individual's implicit theories. These implicit theories represent the personal perspective
which operates in each individual as judgments and decisions pertinent to teaching and learning are made.

In studying the relationship between educational beliefs and educational practice, Kessinger (1979) maintains that

Individuals possess a philosophy of life whether they are cognizant of it or not. One's philosophy, personal values and beliefs, form the foundation from which one makes choices or decisions during his/her lifetime. Basic to a teacher's personal philosophy is his/her belief about human nature or the belief about people and how they grow and develop. (p. 14)

Likewise, Jackson (1971, p. 33) recognizes the necessity of examining one's personal beliefs and values when he states "that in education, as in many other domains of human endeavor, we must act on the basis of belief rather than knowledge. We must do what we believe is right rather than what we know will pay off." If teachers are to function productively in the teaching-learning environment, it is essential that they clarify personal beliefs about people and how they learn (Seaburg, 1974). Similarly, Usher and Hanke (1971) emphasize the crucial nature of teachers' personal beliefs since these beliefs are conveyed to students through their methods and procedures within the classroom. Goodlad (1977) reiterates the importance of recognizing one's personal belief system by calling upon teachers to examine their implicit theories and to act responsibly so they do not violate their own integrity.

As teachers became cognizant of their own personal implicit theories, they are afforded the opportunity to develop an individual philosophy of education which "can reveal one's basic values, clarify one's choices and increase one's consistency or congruency with regard to one's day to day practices" (Kessinger, 1979, p. 22). As teachers interact in
a professional setting to develop a shared philosophy, "they may estab-
lish guidelines or a foundation from which to examine educational vari-
ables such as curriculum, organization, instruction, evaluation and
society" (Kessinger, 1979, p. 22). Along the same lines, Hedges and
Martinello (1977) propose that the philosophy of the school when imple-
m ented in daily practice gives education wholeness, direction and purpose.

In attempting to research the impact of educational beliefs on
preactive planning decisions, Borko et al. (1979) posed the following
questions. "How do their (teachers') beliefs affect their preinstruc-
tional decisions? How do beliefs about education influence the cues
and estimates about students to which teachers attend in making these
decisions?" (p. 148). The impact of the variables dealt with in these
questions has been portrayed in Figure 5 (p. 42). In order to ascer-
tain information pertinent to teacher beliefs, all participants in the
Borko et al. (1979) study completed a questionnaire concerning their be-
liefs about education. The participants were then given descriptions
of hypothetical primary students and asked to make various estimates
concerning the likelihood of a number of specified events. As far as
the impact of educational beliefs on the preinstructional teacher de-
cisions, the researchers concluded:

that the measure of educational beliefs we used did not predict
teacher's decisions, perhaps because this measure was not sensitive
eough to the differences in beliefs of the teachers participating
in the studies. We still believe that individual differences in
teachers do affect their decisions, and we plan to continue to ex-
plore the role of individual differences in our future research.
(Borko et al., 1979, p. 154)

In related studies, various researchers have attempted to describe
teachers according to their educational beliefs (Dobson & Dobson, 1979;
Kessinger, 1979; Sontag, 1968). The Kessinger (1979) study was based on the thesis that "if currently practicing teachers could align themselves with an educational philosophy, the result might be more knowledgeable teachers who could explain why it is they do what they do" (p. 71). In attempting to determine the relationship between educational beliefs and educational practices for a sixteen member elementary school faculty, Kessinger (1979) found a significant beliefs-practice relationship at the .05 level of significance for the group as a whole. On an individual basis, however, only one of the sixteen participants could achieve a correlation that was significant at the .05 level. Kessinger (1979) concluded:

Although several of the participants showed strong beliefs or strong beliefs about practice, only six per cent could identify with one philosophy. This would seem to indicate that a large number of educational practitioners may be irrational in their philosophies and identify with several philosophies in general, but with no one philosophy in particular. (p. 65)

Based on the findings of his study, Kessinger (1979) called for more inservice education which focuses on the individual needs of each teacher. Since the person of the teacher is the most important factor in the learning process, a more "person-centered" approach focusing on individual teacher differences must be developed.

Again, the importance of establishing an awareness of one's underlying educational beliefs was addressed by Sontag (1968). He concluded that teachers' beliefs may be categorized as being traditional, progressive, or mixed (combination of both). A similar attempt at beliefs categorization was made by Dobson and Dobson (1979) dividing implicit theories into three groups: essentialism (behaviorism), experimentalism
(cognitivism), and existentialism (humanism). In either case, regardless of the mechanism used for philosophical classification, both stress the importance of teachers engaging in some introspection concerning their educational beliefs since these beliefs impact on the climate of the learning environment. The importance of this directive has been emphasized by Dawson (1976).

Teachers must be given an opportunity for developing and understanding basic systems of philosophy, as well as understanding the lines of relationships connecting fundamental philosophic positions with educational points of view, and, in turn, the connections of these to decisions teachers must make regarding classroom methods and procedures. (p. 151)

In the categorization schemata proposed by Dobson and Dobson (1976), they describe, at one extreme, an individual characterized by an essentialist philosophy and a behaviorist psychology. At the opposite extreme, as seen on the continuum presented in Figure 6, they describe an individual espousing an existentialist philosophy and humanistic psychology. Between these two extremes, as indicated in Figure 6, Dobson and Dobson (1976) place the experimentalist (cognitivist) who is a combination of both in moderation.

Design A
Essentialism/
Behaviorism

Design B
Experimentalism/
Cognitive

Design C
Existentialism/
Humanism

Movement toward
External Control

Training (to)

(for)

Education (with)

Figure 6
Philosophical/Psychological Continuum
(Dobson & Dobson, 1976)
According to Dobson and Dobson (1976), the following beliefs are asserted to be characteristic of an individual identifying with the essentialist/behaviorist end of the continuum. Society is the prime force in child development. Society must provide training, guidance, control, and direction. Moral values must be instilled. Proper motivation should be provided for children to behave, learn, and act in an acceptable way, with external stimulation or reward to ensure success. Learning is basically reacting to stimuli; competitive situations encourage such reaction. Environmental conditions largely determine intelligence. A universal truth and knowledge is to be conveyed to the child. The function of the school is to create a "standardized student-citizen".

In transforming the educational beliefs of the essentialist/behaviorist teacher into practice, Dobson and Dobson (1976) indicate that the essentialist is concerned with the transfer of information with clear objectives in mind. The curriculum is well organized and emphasizes content. Management, structure, and efficiency are vital for an orderly flow. Content should be consistent throughout the educational system. Diagnostic, programmed materials are desirable followed by reliable evaluation to measure standardized achievement.

The second classification category, which describes teachers espousing an existentialist philosophy and humanist psychology (Dobson & Dobson, 1976), is quite the opposite of the first and is located at the opposite end of the continuum seen in Figure 6. The primary belief here is the intrinsic goodness of man which leads to the conclusions that people will seek knowledge, and be self-motivating in their never-
ending experiential quest, based on the belief that individual perceptions are man's only reality. People are self-satisfying, looking for rewards internal in nature. Man is his own best initiator of action and is the seeker of his own truth. He is in the center of his environment and learns best by experiencing and creating. Intellectual ability exists within the individual. It is to be developed and brought out by society's efforts. Society should center on helping individuals, not institutions. Individual freedom should be developed in children.

Educationally, (Dobson & Dobson, 1976) indicate that the existentialist (humanist) believes the child is the center and focus of the school. The educator works at developing the potential of the child. Instructional acts are contingent upon the learner's freedom. A dynamic curriculum is required, based on the students' needs and wants. The students plan and organize their own time. Education is interdisciplinary, that is, a student needs to look at all parts of the whole. The ultimate end of education is not knowledge but quality of being. There is no limit to resource possibilities. Evaluation is done by self or by shared peer feedback.

Between these two extremes, as seen in Figure 6 (p. 48), Dobson and Dobson (1976) place the experimentalist (cognitivist) who is a combination of both in moderation. Society's role is to put the individual in harmony with the environment. Learning tasks should be lifelike or functional. Social, emotional, physiological, and intellectual development are factors in learning readiness. Knowledge is related to experience. Life is ever-changing and, therefore, what we perceive as truth is ever-
changing also. The ultimate goal of education is to successfully produce future adults capable of effective, innovative social functioning.

Within the educational setting, according to Dobson and Dobson (1976), the teacher assumes the role of manager and consultant. Content is valued by its future usefulness and is sequenced to coincide with child development. The concern is with individual achievement directed through programmed study. A combination of content-centered curriculum and process curriculum is sought. Materials and resources can be drawn from a variety of areas. Sequential skill building is emphasized with past learned knowledge used as a basis for future learning tasks. Evaluation includes areas of critical thinking, problem solving, and high level cognitive skills.

A more thorough analysis of the differences associated with each of the three positions is included in Appendix C. Additionally, the distinctions are again addressed in Chapter III in discussing methodologies appropriate for classifying teachers according to their beliefs.

In addition to "information or cues about students" and "beliefs and attitudes about education", a third component of the decision-making model affecting instructional decisions, as represented in Figure 5 (p. 42), is the "nature of the instructional task". Two important aspects of the instructional task that affect teachers' decisions are the nature of the subject matter and the goals of instructions (Borko et al., 1979, p. 142). Unfortunately, limited research has been done relevant to the nature of the instructional task as affecting teachers' decisions. In one study involving preinstructional decisions in reading and mathematics (Russo, 1978), the following question was asked. "How does the nature of the
Instructional task influence the cues and estimates about students to which teachers attend in making preinstructional decisions?" In the Russo (1978) study, the nature of the particular task, either teaching a reading lesson or teaching a math lesson, influenced the types of information that the teacher considered in making estimates about students. No generalization, however, could be drawn since in placing children in various reading groups some teachers only considered information about reading achievement while other teachers took into account both achievement in mathematics and achievement in reading. It would appear that this finding enhances the significance of the concept of individual differences in the teacher planning and teacher decision-making function. Additionally, as shown in Figure 5, the nature of the instructional task impinges on preinstructional decisions via the availability of alternative strategies. The utilization of alternative strategies may be influenced by such things as educational facilities, material resources, school politics, pressures from the community and administration and teacher training (Borko et al., 1979).

In conclusion, then, the description of teaching with the teacher defined as decision maker offers an advantage when compared with the more traditional approaches. It offers a broader perspective of the teaching learning process and leads to a reconceptualization of other research findings which, at one time, were described as contradictory. Additionally, it integrates some of these apparently contradictory findings (Medley, 1977) by "emphasizing the importance of considering individual differences in teachers as well as individual differences in students when making educational decisions" (Borko et al., 1979, p. 154). This decision-making paradigm (Figure 5, p. 42) has been applied to this
research study in the following way. Initially, teachers educational beliefs were established. Subsequently, the impact of those beliefs on preactive planning decisions were assessed in order to determine the degree of congruence between theory (beliefs) and practice (actual decisions). The need for research in this area is described by Borko et al. (1979) in their discussion of the influence of educational beliefs on teacher decisions and their statement that "we still believe that individual differences (educational beliefs) in teachers do affect their decisions, and we plan to continue to explore the role of individual differences in our future research" (p. 154).

**Teacher Planning Decisions**

In recent years both curriculum theorists and curriculum practitioners have focused attention on the phenomenon of teacher planning (Yinger, 1977). The boundaries identified for the field of teacher planning range from yearly planning at one extreme to daily planning at the other. More precisely, five basic levels of planning have been described as appropriate considerations in the study of teacher planning. They are: yearly planning, term planning, unit planning, weekly planning, and daily planning (Yinger, 1980). In addition, both institutional planning and planning for the upcoming year have been associated with the teacher preparation function. Although every good, experienced classroom teacher is aware of the necessity for planning at all levels, only recently have empirical studies been designed to investigate the teacher planning process (Clark & Yinger, 1979 b; Peterson et al., 1978; Morine, 1975, 1976, 1977; Yinger, 1980; Zahorik, 1970, 1975).
The study of teacher planning is a relatively new field of inquiry with the first empirical study dating back to Zahorik (1970). In fact, the number of published studies available today is quite scant. To date, the majority of works relevant to the topic of teacher planning have been of a prescriptive nature with the contributions of Ralph Tyler (1950) receiving foremost acclaim. The prescriptive planning model, also referred to as the rational or separate ends-means model, involves a logical sequence of intellectual and practical events. Proposed by Tyler, further modified by Taba (1962), Mager (1962), Baker and Popham (1970), and others, the separate ends-means model initially proposes the determination of ends or objectives, followed by a series of means appropriate for the attainment of specified objectives. More specifically, this model involves the following steps: (1) formulation of objectives, (2) determination of learning activities, (3) organization of learning activities, and (4) specification of evaluative procedures. Utilizing this sequence, planning becomes a task requiring orderly and logical thinking with this model providing a rational and scientific methodology for accomplishing the task (Taba, 1962).

Opposition to Tyler's rational decision-making approach to planning first surfaced with Macdonald in 1965 with his contention that the description of teacher planning as a series of rational decisions about objectives, learning activities, organization and evaluation was actually a myth. The basis for this assumption as stated by Macdonald is as follows:

It is possible that teaching can be viewed as a rational decision making process, but the action probability of validity is rather slim. The central premise of rationality cannot withstand careful
scrutiny. We have learned too much about human nature in the past 100 years to reject offhand the irrational and/or unconscious aspect of human behavior. (MacDonald, 1965, p. 613)

Eisner (1967) added another perspective to the phenomena of teacher planning when he suggested that curriculum theory does not provide the appropriate mechanism for accurate prediction of educational outcomes, nor do educational objectives necessarily precede the selection and organization of content. In this context, Eisner confirms the need for an integrated approach where participation via the means brings about the genesis of meaningful outcomes.

An alternate model of teacher planning has been described by Zahorik (1975) in his synthesis of MacDonald's (1965) and Eisner's (1967) suggestions. This second prescriptive model, the integrated ends-means model, proposes that teachers do not plan in the sequence described by Tyler and others, but actually consider the type of learning activity appropriate for the student. Proponents of this model argue that objectives arise within the context of the learning activities as students choose learning experiences which are in compliance with their own objectives. As a result, in this model, "ends for learning become integrated with means for learning and the specification of goals prior to an activity becomes meaningless" (Clark & Yinger, 1977).

Prior to the pioneering work of Zahorik (1970), the separate ends-means model and the integrated ends-means model provided the theoretical framework with regard to the teacher planning process. Zahorik's initial study centered upon the effect of a simple plan as opposed to no plan at all and concluded that the traditional planning models resulted in insensitivity to pupils on the part of the teacher. The study
did not investigate the validity of the sequence proposed in each model. It was not until 1975, based upon the findings of Taylor (1970) showing that curriculum planning usually begins with the content to be taught, that another empirical research study was designed by Zahorik (1975) to test the two accepted teacher planning models. "The purpose of this study was to determine what kind of plans teachers make prior to the time they enter the classroom and begin to teach a group of students" (Zahorik, 1975, p. 135). On the whole, decisions pertaining to activities were those most frequently made. However, the first decision made usually pertained to content. Clark and Yinger (1977) summarize the findings as follows:

Zahorik concluded from this study that teacher planning decisions do not always follow logically from a specification of objectives and that, in fact, objectives are not a particularly important planning decision in terms of quantity of use. He also argued, however, that the integrated ends-means model does not appear to be a functioning reality because of the relatively few teachers (only 3 percent) who began their planning by making decisions about activities. (p. 281)

These findings establish the contention that the thinking of teachers during the preactive phase of planning most frequently involves decisions concerning "the range and particulars of the subject matter of the lesson or unit to be taught" (Zahorik, 1975, p. 138). Along the same lines, the commentary of Goodlad and Klein (1974) indicates that teachers plan primarily for coverage of content as opposed to the fulfillment of specified learning objectives. In fact, an even earlier study by Joyce and Harootunian (1964) questioned the role of objectives as described in the rational ends-means model by demonstrating that few science teachers use behavioral analysis as they plan their lessons.
The traditional planning models do not appropriately represent the format followed by teachers in their planning process. The models infer that equal attention is given to decisions concerning objectives, content, activities, materials, and evaluation. In a recent study (Mintz, 1979), content, materials, and activities were shown to provide the primary basis for teacher planning decisions with relatively no consideration being given to objectives and evaluation. These findings reinforce the notion that teachers differ in their approach to planning (Morine, 1976) and establish anomalies in the prevailing theoretical teacher planning models.

Looking at the phenomenon of teacher planning within the framework of the decision-making model, however, researchers have been provided the opportunity to analyze the influence of a number of factors on preinstructional planning decisions. Accordingly, the definition of planning applied in this situation sees planning as a process of preparing a framework for guiding teacher action, a process involving teacher thinking and teacher decision making. Viewed from this perspective, the study of teacher planning provides information concerning the relationship between thought and action in teaching, an area which Clark and Yinger (1979 b) refer to as "a promising site for the study of teacher thinking" (p. 9).

In a recent study Clark and Yinger (1979 b) surveyed 300 elementary teachers in order to gather information describing their views of the teacher planning process. Based upon the results of their work, it appears that elementary teachers view planning in the following way.
--Learning objectives are seldom the starting point for planning. Instead, teachers plan around their students and around activities.

--Teachers tend to limit their search for ideas to resources that are immediately available, such as teacher editions of textbooks, magazine articles, film, and suggestions from other teachers.

--Teachers indicated that most of their planning is done for reading and language arts (averaging five hours per week), followed by math (2.25 hours/week), social studies (1.7 hours/week), and science (1.4 hours/week).

--Teacher planning is more explicit and involves a longer lead time in team-teaching situations than in self-contained classrooms.

--The most common form of written plans was an outline or list of topics to be covered, although many teachers reported that the majority of planning was done mentally and never committed to paper.

--Planning seems to operate not only as a means of organizing instruction, but as a source of psychological benefits for the teacher. Teachers reported that plans gave them direction, security, and confidence. (Clark & Yinger, 1976 b, p. 15)

In another endeavor Clark and Yinger (1979 b) studied the teacher planning process in an attempt to describe the longitudinal case history of a plan. Six experienced teachers participated in this study. Each participant was asked to plan a two week unit on writing that had not been previously taught. An interesting dichotomy arose through an analysis of the plans leading Clark and Yinger to distinguish between incremental planners and comprehensive planners. The former group "seems to prefer to move in a series of short planning steps, relying on day-to-day information from the classroom" (Clark & Yinger, 1979 b, p. 19). The comprehensive planners, on the other hand, "tended to be more concerned with the unit as a whole, and were very careful to specify their plans as completely as possible before beginning to teach" (Clark & Yinger, 1979 b, p. 19). These findings reinforced the notion that
individual differences in the teacher planning process do exist and that a more thorough understanding of the preactive planning process is beginning to emerge as a result of this work and similar studies (Peterson et al., 1978; Yinger, 1977).

In an ethnographic study dealing with the teacher planning process, Yinger (1977) has provided new data describing both preactive and interactive teacher planning. His study, designed to provide both a descriptive and theoretical model of planning processes, involved an intense study within the classroom of one first-second grade teacher.

After months of observing the teacher during preactive and interactive situations, as well as analyzing her participation in various specially designed simulations and tasks, two aspects of teacher planning emerged. These two findings indicate that teacher planning revolves around the use of instructional activities and the use of teacher routines. The instructional activities, characterized by a number of defined features which the teacher considered in her planning decisions, were the basic building blocks from which the plans evolve. Similarly, consideration was given to the proper utilization of teaching routines. A total of four routines were described, each serving as a method "to reduce the complexity and increase the predictability of classroom activities, thereby increasing flexibility and effectiveness" (Clark & Yinger, 1977, p. 284).

In addition, this study provided information significant for the development of two models of teacher planning, a structural model and a theoretical model. The structural model provides descriptive information regarding the teacher's behavior during all levels of planning:
daily, weekly, unit term, and yearly. The theoretical model (Yinger, 1977), a process model, emphasizes finding, developing and implementing planning decisions. In contrast to the theoretical models described earlier (Tyler, 1950; Zahorik, 1975), this model consists of three stages. The initial problem finding phase makes use of a discovery cycle which results in the clarification of a problem appropriate for continued consideration. The intermediate phase, the problem formulation and solution phase, utilizes the design cycle. In this cycle, the problem undergoes progressive elaboration, investigation, and adaptation so that in the teacher's perception the plan is appropriate for presentation. The final phase in this model is the implementation phase which involves the actualization of the plan including its evaluation and its routinization.

Although Yinger's structural or descriptive model of planning provides significant quantitative information regarding a single teacher's behavior during all phases of planning, a related study by Peterson et al. (1978) has focused on the daily lesson planning behavior of a group of twelve experienced elementary school teachers. While the theoretical models previously discussed (Taba, 1962; Tyler, 1950; Yinger, 1977; Zahorik, 1970) have attempted to find similarities in the teacher planning process, there are some arguments to show that teachers do differ in their planning as a result of differences in their thinking processes (Morine & Vallence, 1975). In a study designed to identify differences in planning procedures between teachers, Morine-Dershimer (1977) found that teacher planning varied in a number of areas, including specificity of format and types of information included
in the written plans. This line of inquiry was pursued in some detail by Peterson et al. (1978) in their attempt to show that individual differences in teacher planning are related to the teacher's personal cognitive style. On three separate occasions, the planning processes of twelve elementary school teachers were recorded as they prepared their lessons for implementation to a group of junior high school students. Careful analyses of each teacher's recorded planning sessions made it possible to place each planning statement into one of the following categories: objectives, subject matter, instructional process, materials, learners, and miscellaneous. For the most part, the amount of time each teacher devoted to each of the planning categories remained stable throughout the three planning sessions. In other words, if subject matter was a top priority in the teacher's statements during planning session one, it was also a top priority during sessions two and three. While priorities among teachers were found to vary, the more significant finding was the consistency of that priority in their planning. This, of course, provides some evidence that individual differences in teacher planning do exist.

As a possible explanation for these individual planning differences, Peterson et al. (1978) examined the cognitive processing styles and abilities of the twelve elementary school teachers. Through the administration of a number of tests designed to measure the teachers' conceptual level, verbal ability, reasoning ability, the flexibility of closure, it was possible to correlate differences in teacher planning with teacher aptitudes. More specifically, those teachers characterized by high verbal ability scores tended to be more productive in
terms of the total number of planning statements made. Additionally, those teachers made more planning statements dealing with higher order subject matter concepts. Correlations based upon conceptual level scores showed that teachers with a lower aptitude score tended to make more planning statements pertinent to lower order subject matter concepts, whereas teachers with high conceptual level aptitude scores made more planning statements concerning instructional processes and the learner. Teachers' scores measuring flexibility of closure and reasoning ability were most strongly related to the proportion of statements dealing with objectives. The total portrait painted as a result of this study indicates that "individual differences in teacher planning do seem to be related to differences in teachers' cognitive processing styles and abilities" (Peterson et al., 1978, p. 426).

Along these same lines, Clark and Yinger (1979 a) indicate that further research dealing with the preactive teacher planning process is essential in order to determine the impact of individual differences on teachers' planning styles. The assumption that all teachers follow a prescribed format for planning has been shown to be incorrect (Clark & Yinger, 1979 a, 1979 b; Mintz, 1979; Morine, 1976; Peterson et al., 1978; Taylor, 1970). The focus for continued research in the area of preinstructional teacher planning has now shifted to an analyses of the individual differences in teacher planning styles which result from differences in teacher thinking.
Purposes of the Study

This study sought to gather information pertinent to the concept of teacher thinking. More specifically, the processes of preactive teacher planning and preactive teacher decision making were analyzed to gather information concerning the intentions and purposes of the teacher as preactive planning proceeds. Although teacher planning can occur at a number of levels, this study concentrates on the teacher planning process at the daily lesson planning level focusing on the plans for a single lesson. Furthermore, this research directs attention to the preinstructional daily planning decisions which characterize the teacher preparation routine.

Specifically, this study sought to answer the following questions:

1. What is the degree of congruence between teachers' philosophical beliefs and the perceived expression of these beliefs in educational practice?
2. Do individual difference variables relate to style of teacher planning?
3. Are teachers' preactive planning decisions consistent with their philosophical and practical beliefs?

In order to address the first research question mentioned above, each teacher was initially categorized according to both philosophical and practical beliefs. Using instrumentation which will be described in Chapter III, teachers were first classified according to their philosophical beliefs. These beliefs fell into one of three categories: behaviorist, experimentalist, and humanist. Following this determination, each teacher's beliefs about practice were assessed. Again,
beliefs fell into the same three categories. After the teacher's philosophical beliefs and practice beliefs were determined, it was possible to describe the degree of congruence between the teacher's philosophical position and beliefs about practice.

The second research question similarly required the initial classification of teachers according to their philosophical and practical beliefs. This categorization within a philosophical framework represents the teacher's individual difference variables. The impact of these individual difference variables on the style of teacher planning was determined through an analysis of each teacher's planning decisions based upon the following decision categories. Decisions that teachers make while planning pertain to: (1) subject matter or content, (2) materials, (3) objectives, (4) activities or instructional processes, (5) learners, and (6) evaluation. After each teacher's decisions were categorized, it was possible to determine if the individual difference variables (philosophical classification) in any way influenced the teacher's planning style as determined by classifying the decisions made pertinent to each of the six planning categories.

The third research question again required the initial classification of teachers according to their philosophical beliefs, that is, as a behaviorist, an experimentalist, or a humanist. Also, as described earlier, each teacher's beliefs about practice were determined via instrumentation to be discussed in Chapter III. Furthermore, each teacher's actual planning style was determined by categorizing each of the teacher's planning decisions according to the six decision categories. Each decision in each of the six categories was then classified
as a behavioristic, experimentalistic or humanistic decision. In this way it was possible to see if actual planning decisions reflect the teacher's philosophical beliefs and the teacher's beliefs about practice.

In conclusion, then, the present research was directed by the following hypotheses:

H₀: There is no significant difference at the .05 level of significance between teachers' philosophical beliefs and the perceived expression of these beliefs in practice.

H₀: There is no significant difference at the .05 level of significance between individual difference variables and style of teacher planning.

H₀: There is no significant difference at the .05 level of significance between teachers' individual difference variables and the kinds of decisions (behavioristic decisions, experimentalistic decisions, humanistic decisions) that teachers make as preactive planning occurs.

Definition of Terms

For purposes of this study, the following definitions were used:

Alternatives: In the process of decision making, the decision maker must select one option from the set of possible choices being considered. In reference to the possible choices for the decision maker, the term alternatives is used. This term represents a possible decision that the decision maker may make and not the specific choice of the decision maker on a particular trial. Once the decision maker selects an alternative, it becomes a decision, choice or act (Lee, 1971, pp. 20-21).
Beginning teacher: A teacher with less than three complete years of teaching experience.

Categories of planning decisions: As teachers plan their daily lessons, the plans made will pertain to one of the following categories: subject matter or content, materials, objectives, activities or instructional process, learners, and evaluation. The analysis of teacher decisions based upon the six categories will provide the basis for establishing each teacher's planning style.

Experienced teacher: A teacher with three or more years of teaching experience.

Implicit theories: The study of teacher thinking is based in part on the assumption that teachers refer to a personal belief system concerning both teaching and learning. Teacher judgments and teacher decisions flow from a teacher's personal perspective as regards teaching and learning as well as all other innately held concepts. A teacher's implicit theories characterize the conceptual bases from which the individual operates in making judgments and decisions pertinent to teaching and learning (Clark & Yinger, 1979a).

Individual difference variables: Using the Educational Beliefs System Inventory (EBSI) and Educational Practice Belief Inventory (EPBI), each teacher will be philosophically and practically categorized within a philosophical framework. The scores that teachers receive on these inventories will represent their individual difference variables.

Interactive decisions: Choices and selections made by the teacher during the actual teaching process. These decisions are made as the teacher interacts with students in a face to face encounter.
Planning style: A teacher's planning style is determined by the pre-active planning decisions that the teacher makes. Since preactive planning decisions fall into one of the six categories of planning decisions, it is possible to analyze a teacher's preactive planning decisions and describe the teacher's planning style in terms of these decisions.

Preactive planning: The distinction has been made between preactive planning and interactive planning (Jackson, 1965). Preactive planning includes all the decisions and activities that occur as the teacher prepares for lesson implementation, whereas interactive planning occurs as the teacher is teaching.

Preinstructional decisions: Choices and selections made by the teacher prior to the actual implementation of a lesson.

Assumptions and Limitations

This study was based on the following underlying assumptions:

1. The manner in which one behaves and the choices one makes reflect one's basic attitudes, beliefs and values.
2. There is a direct relationship between personal beliefs held by the teacher and teacher practice.
3. Beginning teachers have not yet internalized a consistent style of planning.
4. Experienced teachers have had sufficient time and experience to develop a consistent style of planning.
5. Incongruence between one's behavior and philosophic beliefs results in frustration and often less effective teaching.
6. The planning statements and decisions verbalized by teachers reflect their thinking processes.

The following limitations apply to this study:

1. The sample population was chosen from two graduate schools of education and several school districts in the Chicago metropolitan area and not by random sampling.

2. Generalizations for all teachers concerning this study may not be made due to the size of the population sampled.

3. Other than scores obtained on the EBSI and EPBI inventories, no additional information concerning teachers' individual differences was available.

Summary

In this study the teacher is viewed as a decision maker. Therefore, this chapter has included a discussion of decision theory from both a classical (mathematical and economical) and psychological (behavioral) perspective in order to establish the concept of teacher decision making within a theoretical framework. Subsequently, a model for studying teacher decision making, the decision-making paradigm (Figure 5, p. 42) was described in reviewing a number of models appropriate for studying teacher thinking. An analysis of the decision-making paradigm revealed that preactive teacher planning decisions are influenced by a number of features including: (1) information or cues about students, (2) teacher beliefs, (3) nature of the instructional task, and (4) constraints of the situation. Since this study is specifically concerned with the relationship of teacher beliefs to teacher
practice, the literature dealing with the concept of beliefs-practice congruency was reviewed in conjunction with the decision-making paradigm.

Additionally, since this study characterizes the teacher as a decision maker, making decisions concerning the planning function, a review of the literature relevant to teacher planning was presented. This review included an examination of the theoretical planning models. Also, empirical and ethnographic studies were reported. The results of these most recent studies indicate that individual differences may play a more important role in the teacher planning process than was previously recognized. The impact and significance of individual difference variables on teacher planning decisions is the primary focus of this research study. This review was followed by a statement of purpose including both the research questions and the statistical hypotheses. The chapter concluded with the definition of terms as well as a consideration of assumptions and limitations.
CHAPTER III

DESIGN AND METHODOLOGY

Introduction

This study sought to determine whether or not teachers make pre-instructional planning decisions that are congruent with their perceived philosophical and practical beliefs. Since the significance of establishing harmony between teacher beliefs and teacher practice has been previously established (Borko et al., 1979; Dobson & Dobson, 1979, 1980; Goodlad, 1977; Jackson, 1971; Kessinger, 1979; Usher & Hanke, 1971), the present research attempts to examine teacher planning decisions as a tool for determining the degree of congruence between actual practices (the real instructional decisions teachers make) and perceptions of beliefs and practice. Included in this chapter are a description of the population that participated in the study, the procedures used for collecting the data, and a description of the pilot study. Also included are sections dealing with the training of raters, the experimental design, and the methods used for analyzing the data.

Description of Population

The participants in this study were recruited from two graduate schools of education as well as several school districts located within the Chicago Metropolitan area. The participating graduate schools were Concordia College, River Forest, Illinois and Lewis University,
Romeoville, Illinois. This researcher contacted professional colleagues in each institution seeking volunteers from among the students enrolled in the various graduate education courses. The graduate level students were from both public and private school systems but included only experienced teachers with a minimum of three years teaching experience.

Additionally, this researcher sent letters seeking teacher volunteers to several local school superintendents and principals. These requests netted volunteers from schools in the following communities: Oak Forest, Illinois; Orland Park, Illinois; Romeoville, Illinois; Tinley Park, Illinois; Shiller Park, Illinois; and Villa Park, Illinois. Again, these teachers represented both public and private school systems but were limited to experienced teachers.

Initially the sample population consisted of thirty-three (33) elementary school teachers. However, after the data collection procedures were completed, it was necessary to reduce the sample size by four and work with a N of 29. As participants in this research study, teachers were asked to do two things: (1) prepare a tape recording of their plans for a creative writing lesson, and (2) complete a survey instrument. The four cases of experimental mortality were related to the two procedures described above. Three of the lost cases resulted from the inappropriate preparation of the tapes, and one case was associated with inappropriate survey completion.

In the cases involving recording errors, two of the returned tapes were found to be blank. These blank tapes most likely resulted from an improperly functioning machine or the teacher's improper operation of the machine. A third tape, when fully transcribed, was not a
creating writing lesson as specified in the directions for lesson preparation and was, therefore, eliminated. In the fourth case of experimental mortality, the survey instrument had been improperly prepared. The subject was given a copy of an inventory that had been improperly collated and did not contain all of the survey items. Consequently, it was necessary to delete this case resulting in a selectively recruited group of twenty-nine (29) elementary school teachers.

Collection of Data

Each teacher was first asked to plan a lesson for a specific group of students. This planning proceeded by having the teachers think out loud into a tape recorder so that their preactive planning thoughts and decisions would be available for scrutiny. This technique has been utilized to study teacher planning decisions (Peterson et al., 1978) as well as the decision-making processes of bank trust officers (Clarkson, 1962), chess players (DeGroot, 1965), clinical psychologists (Kleinmuntz, 1968), and physicians (Elstein, Jason, Kagan, Loupe, & Shulman, 1972). Trained raters (training procedures are discussed later in this chapter) listened to the taped planning sessions and categorized each planning statement into one of the following categories: (1) content or subject matter, (2) materials, (3) objectives, (4) activities or instructional processes, (5) learners, and (6) evaluation (Peterson et al., 1978). Furthermore, each decision was philosophically classified as a behavioral (Design A), experimental (Design B), or humanistic (Design C) decision. The basis for decision categorization is presented in Appendix D, "Guidelines for Categorizing Teacher Decisions".
Prior to the initiation of the taping session, the teachers were given an introductory explanation describing both the broad purpose of this study as well as their role in this study. See Appendix B for a copy of the prepared statement. Then, each teacher was given a handout with specific directions concerning the lesson to be prepared using the "think aloud" technique. See Appendix B for a copy of this handout.

Secondly, each teacher was given a two part assessment device, the Educational Beliefs System Inventory (EBSI) and the Educational Practice Belief Inventory (EPBI). See Appendix A for copies of these inventories. The authors of these two inventories describe the two instruments as "a strategy for planning and decision making that identifies the beliefs that collectively constitute a personal philosophy of education and also the variables necessary to create or establish a phenomenon called schooling" (Dobson & Dobson, 1980, p. 8).

The Educational Beliefs System Inventory (EBSI) consists of 69 statements concerning various aspects of educational theory. Teachers judged each of the statements by circling the appropriate number according to the following scale: (1) complete agreement, (2) moderate agreement, (3) uncertain, (4) moderate disagreement, (5) complete disagreement. The EBSI is designed to provide a portrait of the individual's philosophic beliefs relevant to human nature as well as to how people grow and develop. This tool provides the mechanism enabling the teacher to be philosophically profiled as a Behaviorist (Design A), Experimentalist (Design B), and Humanist (Design C).

The Educational Practice Belief Inventory (EPBI) consists of 69 statements concerning various aspects of educational practice. Teachers
judged each of the statements by circling the appropriate number accord­
ing to the following scale: (1) complete agreement, (2) moderate agree­ment, (3) uncertain, (4) moderate disagreement, (5) complete disagree­ment. The EPBI is an instrument which examines teacher planning and de­cision making, and in conjunction with the EBSI, measures the degree of congruence between the teacher's professed beliefs and professed educa­tional practices. The EPBI is designed to assess an individual's plan­ning and decision-making strategies; and, through analysis, provide a profile of the practicing teacher as a Behaviorist (Design A), Experi­mentalism (Design B), and Humanist (Design C).

Each of the assessment inventories is composed of a number of sub-tests. The EBSI is composed of seven sub-tests while the EPBI con­sists of six sub-tests. Each of the sub-tests address either a specific philosophic concern or a specific practical concern with one-third of the questions on each sub-test pertaining to a behavioristic position, one-third pertaining to an experimentalistic position, and one-third pertaining to a humanistic position. As the inventory results are analyzed, three graphic profiles emerge for each teacher— one profile for each philosophic persuasion. An example of an individual teacher's profiles are provided in Figure 7.

In Figure 7, the first profile portrays the individual teacher's response to all questions assessing behaviorism, the second profile por­trays the teacher's response to all questions assessing experimentalism, and the third profile portrays the teacher's response to all questions assessing humanism. Along the x-axis, each sub-test is numbered. Sub­tests 1 through 7 represent specific sub-tests of the EBSI with sub-test
Figure 7
Teacher Profiles

(Dobson and Dobson, 1980)
8 representing a composite score for the entire EBSI inventory. Sub-tests 9 through 14 represent specific sub-tests of the EPBI with sub-test 15 representing a composite score for the entire EPBI inventory and sub-test 16 representing a combined composite score for both inventories.

The numbers along the y-axis, 1 through 5, represent the available response selections for the various inventory items. Number one, at one extreme, indicates complete agreement with the philosophic position or practical concern of the sub-test, and number five at the other extreme indicates complete disagreement with the philosophic position or practical concern of the sub-test. A key, interpreting each of the sub-tests according to the three designs, is entitled Perceptual Baseline System: A Humanized Approach to Staff Development and is provided in Appendix C.

In this study, the EPBI functioned as a tool to elicit information concerning each teacher's preinstructional planning decisions. With this information available, each teacher's preinstructional planning and decision-making profile was available for comparison with the philosophic profile established using the EBSI. An analysis of the inventory responses provided the basis for the following assessments: (1) degree of beliefs-practice congruence, (2) impact of individual difference variables on planning style, and (3) correlation of individual difference variables with types of decisions made (i.e. behavioristic decisions, experimentalistic decisions, and humanistic decisions).

Reliability and Validity of Inventories

The EBSI-EPBI inventories were designed by Dobson, Dobson, Grahlman, and Kessinger (1978). These instruments are "intended as a method
of identifying the degree to which persons are experiencing belief-practice congruency between their professed educational beliefs and their professed educational practice" (Kessinger, 1979, p. 32). The reliability and validity of these instruments have been previously established (Kessinger, 1979, pp. 32-33).

The method of validation for the two instruments was jury validation. Jury validation is similar to logical validation except that the items included on the instrument were submitted to qualified curriculum experts at three major midwestern universities who rated them as to their importance in contributing to the philosophies being measured. Reliability was achieved through the use of the Cronbach Alpha Internal Consistency Reliability scale. The Cronbach Alpha Model of Reliability is similar to the Guttman (Lambda) Split-Half Method of Reliability. Correlation coefficients correlating perceived educational beliefs with perceived educational practices were achieved through the use of the Pearson Product Moment Coefficient of Correlation. (Popham & Sirotnik, 1973)

Table I presents data concerning the reliability scores achieved during a six month testing period (Kessinger, 1979). In the column titled Design, the row entitled Behaviorist represents those questions on the inventories assessing an individual's behaviorist position, while the Experimentalist row represents the experimentalist position, and the Humanist row represents questions assessing one's humanistic position.

**Table I**

<table>
<thead>
<tr>
<th>Design</th>
<th>EBSI</th>
<th>EPBI</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behaviorist</td>
<td>.829</td>
<td>.790</td>
<td>.890</td>
</tr>
<tr>
<td>Experimentalist</td>
<td>.730</td>
<td>.800</td>
<td>.865</td>
</tr>
<tr>
<td>Humanist</td>
<td>.790</td>
<td>.825</td>
<td>.905</td>
</tr>
</tbody>
</table>

N = 427 (Kessinger, 1979, p. 33)
The Cronbach Alpha Model of Internal Consistency Reliability, utilized by Kessinger (1979), is a special case of the split-half approach for the assessment of test reliability. The split-half approach usually involves dividing the test into two parts and comparing the results obtained on the even numbered questions with the results obtained on the odd numbered questions. Since test reliability is a function of test length and the split-half procedure derives a correlation based on only one-half the test, it is necessary to determine the reliability of the entire test. For this purpose, the Spearman-Brown (1910) prophecy formula is commonly used. This formula establishes the reliability of the entire test based upon scores from each split-half. In the Kessinger (1979) study, however, the Guttman (1945) formula was mentioned. The Guttman prophecy formula differs from the Spearman-Brown formula in that the former computes a variance that does not assume that the variances of the two halves are equal. This difference represents a rationale for Kessinger's comparison of the Cronbach Alpha Model of Reliability to the Guttman Model (Kessinger, 1979, p. 32), since the alpha model, likewise, does not require equal variances on each of the split-halves (Cronbach, 1951). In fact, Cronbach (1951, p. 331) advocates using the Guttman formula for determining split-half coefficients of equivalence rather than the Spearman-Brown formula.

In Cronbach's Alpha Model of Internal Consistency Reliability (1951), alpha represents the mean of all split-half coefficients resulting from different splittings of a test. In other words, alpha measures essentially the same thing as a split-half coefficient since if all possible splits for a test were made, the mean of the coefficients obtained
would be alpha. Defined more precisely, alpha is "an estimate of the correlation between two random samples of items from a universe of items like those in the test" (Cronbach, 1951, p. 297); it is the value expected when two random samples of items from a pool of items like those in the given test are correlated (Cronbach, 1951, p. 331).

For use in the Kessinger (1979) study, alpha proves to be an essentially appropriate statistic, since alpha can be an index of sub-test consistency yielding useful information about the interpretability of the composite (Cronbach, 1951, p. 321). More specifically, since the EBSI/EPBI inventories are composed of numerous sub-tests, "alpha indicates what proportion of the variance of the composite is due to common factors among the sub-tests" (Cronbach, 1951, p. 321). The use of alpha as appropriate for the determination of internal-consistency reliability is further discussed by Cronbach and Azuma (1962) and Cronbach, Schonemann, and McKie (1965). In computing reliability coefficients for tests composed of items sorted into various strata, as is done on each of the EBSI/EPBI sub-tests, alpha provides an apropos tool for assessing reliability on a single test having heterogeneous content (Cronbach & Azuma, 1962, p. 649). For tests composed of homogeneous content, the Kudor-Richardson formula, KR20, (1937) provides an appropriate statistic. For tests that represent the stratified-parallel model, whether stratified on content or difficulty or both, an alpha coefficient represents the statistic of choice (Cronbach, Schonemann, & McKie, 1965). Since the EBSI/EPBI inventories represent this stratified-parallel design, Kessinger's selection of the Alpha Model of Internal Consistency Reliability is most appropriate.
The validity of the EBSI/EBPI inventories has been established using the technique of jury validation. Jury validation is similar to logical validation (Kessinger, 1979, p. 32) which is one of several techniques utilized to establish content validity. Content validity, along with empirical validity and construct validity, represent three different approaches for gathering evidence which will support the idea that a test measures certain characteristics (Helmstadter, 1964, p. 89). Logical validity, one variety of content validity, requires a definition of the trait or content area to be measured. Additionally, it requires a breakdown of the area to be measured into categories which represent all major aspects of the area, and finally, it requires a judgment as to whether there are a sufficient number of items in each of the categories which do in fact distinguish between those persons who have a particular characteristic and those who do not (Helmstadter, 1964, pp. 90-91). In validating the EBSI/EPBI inventories, "qualified curriculum experts at three major midwestern universities" (Kessinger, 1979, p. 32) provided the expertise for making the analysis and judgments required to establish the content validity of these instruments.

A second approach to inventory validation, although not explored by Kessinger, involves the notion of construct validity (Cronbach & Meehl, 1955). "Construct validity is the most recent addition to the conceptual ideas concerning kinds of evidence which are required before a test user can feel justified in interpreting test scores in certain ways" (Helmstadter, 1964, p. 134). Construct validity is ordinarily studied when a "trait or quality underlying the test is of central importance, rather than either the test behavior or the scores on the
criteria" (Technical Recommendations, 1954, p. 14). Since the EBSI/EBPI inventories are designed to elicit underlying information describing an individual's perceived philosophic position and perceived practical position, this concept of construct validity has relevance.

Construct validity involves establishing an instrument as an adequate measure of hypothetical construct (Helmstadter, 1964, p. 226). A hypothetical construct "is some postulated attribute of people, assumed to be reflective in test performance. In test validation the attribute about which we make statements in interpreting a test is a construct" (Cronbach & Meehl, 1955, p. 283). The hypothetical construct reflected in the EBSI/EBPI inventories represent the Design A, Design B, and Design C positions which are fully described in Appendix C.

As described by Cronbach and Meehl (1955), the logical process of construct validation involves the following procedures. Initially, a proposition must be set forth that this test measures a specific trait; second, the proposition must be inserted into present theory about this specific trait; third, the theory must be worked through to predict behavior characteristics which should be related to test scores if the test truly measures the specified trait as conceived; and finally, data must be secured to empirically or experimentally confirm or reject the hypothesis.

It appears, perhaps unknowingly, that the entire Kessinger (1979) study served to establish the construct validity of the EBSI/EBPI inventories. The proposition that these instruments measure specific traits was set forth by Dobson, et al. (1978) in the compilation of their inventories which appear in Appendix A. For evidence that steps
have been taken to insert the proposition into present theory, see Appendix C. Additionally, Kessinger's (1979) own content validity study enhances this procedure. Likewise, a number of other works (Dobson & Dobson, 1976, 1978, 1980; Kessinger, 1979) have attempted to incorporate this proposition into present theory. The notion that the theory predicts certain behavioral characteristics is addressed in the design of the inventories since the EPBI is concerned with teacher practice. Furthermore, Kessinger's (1979, p. 39) own study sought "to denote the implications and accompanying responsibilities an educational philosophy places upon the teacher". The final phase, securing data to empirically or experimentally confirm or reject the hypothesis, is evidenced from an individual standpoint using the Design A, Design B, and Design C profiles described previously in this chapter. From a broader perspective, the entire Kessinger (1979) experimental study provided data which confirms the initial proposition concerning the intentions of the inventories. Interestingly enough, this researcher's experimental study provides additional data relevant to the construct validity of the EBSI/EPBI inventories.

In more concrete terms, however, "it is ordinarily necessary to evaluate construct validity by integrating evidence from many different sources" (Technical Recommendations, 1954, p. 14). Two important types of evidence which support construct validity are group differences and internal consistency (Cronbach & Meehl, 1955). The first general type of evidence which might lend support to a claim of construct validity is Group Differences. Evidence of this type indicates that persons in different groups are conceived to possess different amounts of the
characteristic involved (Cronbach & Meehl, 1955, pp. 287-88). Relating this requirement to the Kessinger (1979) study, teachers in different philosophic camps evidenced differing responses concerning perceived practice leading to "a significant correlation between educational beliefs and educational practices" (Kessinger, 1979, p. 67). Accordingly, individuals advocating a particular philosophy similarly advocated a perception of practice which differed from individuals in another group.

A second type of evidence useful in determining the construct validity of a test is that which comes from studies of its internal consistency (Thurstone, 1952, p. 3). According to Cronbach and Meehl (1955, p. 288), both item-test correlations and reliability formulas are appropriate for describing internal consistency. Since Kessinger (1979) established the reliability of these inventories using the Cronbach Alpha Internal Consistency Reliability Model (1951), the values appearing in Table 1 (p. 77) not only establish the instruments' reliability but also provide empirical evidence of the instruments' construct validity.

Pilot Study

A pilot study was performed in order to establish appropriate procedures for the first phase of the data collection process. The purpose of the pilot study was to run through a taping session using the "think aloud" technique in order to compare the teachers' taped responses with this investigator's assumed responses based upon the directions given. A second purpose was to establish a routine for deciphering the tapes.
The pilot study participants consisted of five graduate students attending Loyola University of Chicago. Each participant was an experienced elementary school teacher with a minimum of three years teaching experience. With the five participants gathered together, an introductory explanation describing both the purpose of this study as well as the participants role in this study was given. See Appendix B for a copy of this explanation. Then, each teacher was given a handout with specific directions concerning the lesson to be prepared using the "think aloud" technique. Although some researchers (Peterson et al., 1978) have allowed teachers to listen to a model "think aloud" tape as an introduction to this procedure, this study relayed essential information using the handouts described here.

Handout for Teachers

Research shows that teacher planning decisions usually pertain to the following categories, although not limited to these categories. This handout serves only to enumerate some of the decisions most frequently made. Decisions usually pertain to: (1) subject matter or content, (2) objectives, (3) evaluation, (4) materials, (5) learners, and (6) activities or instructional processes.

Task

Assume you are working with the students currently enrolled in your class. Provide a brief description of your class including grade level and any other pertinent descriptive information.
After a field trip to the zoo, prepare a creative writing follow-up lesson for the next day. Your plans should be sufficiently detailed so that your tape portrays a verbal picture of your planned lesson. (The direction, focus, and methods are yours to decide. A favorite technique or method is welcome.)

The subject matter for the follow-up lesson, creative writing, was specifically selected so as to give the teachers an opportunity to make a large number of decisions while preparing the lesson for implementation. Since many elementary school subjects, such as reading and math, are largely preplanned in the teacher's edition of the textbook series, some researchers (Clark & Yinger, 1979a, 1979b; Peterson et al., 1978) have suggested that future work dealing with preactive teacher planning decisions should focus on areas such as creative writing where teachers must make their own planning decisions.

After reading the directions on the "Handout for Teachers", each teacher was issued a tape recorder and blank cassette. Teachers were individually assigned to small work rooms where the tapes were prepared. Upon completion, all materials were returned to this investigator.

The completed tapes were then ready for analysis. In order to categorize the taped teacher planning decisions, each tape was first transcribed. Then, each decision statement on the transcribed page was parenthetically enclosed so as to expedite the categorization process. For an example of a transcribed tape which parenthetically identifies each decision, see Appendix D. After all the decision statements had been identified, it was possible to first categorize each decision based upon the six decision categories: content or subject...
matter, objectives, materials, learner, activities or instructional process, and evaluation. Each decision was then philosophically classified as a Design A, Design B, or Design C decision using the "Guidelines for Categorizing Teacher Decisions" found in Appendix D. The results of the categorization of each teacher's transcribed tape were recorded on a "Decision Data Sheet". See Appendix D for an example of a scored "Decision Data Sheet".

The pilot tapes were also instrumental in effecting a change in the directions included in the "Handout for Teacher". Since the pilot tapes included such a wide variety of responses, ranging from one teacher's description of a variety of things she "might" do to another teacher's detailed explanation of what she would do throughout the entire day, it was necessary to define certain parameters concerning the lesson to be planned. These parameters include both a time frame for the lesson as well as some specific suggestions concerning the focus of the follow-up lesson. In addition, the introductory paragraph describing decision categories was deleted so as not to jeopardize the internal validity of the research design. See Appendix B for the revised "Handout for Teachers".

In conclusion, the pilot study served the dual purpose of clarifying the procedures to be utilized in gathering information using the "think aloud" technique, as well as establishing the format for decision categorization. The information and expertise obtained in this trial run proved most useful in providing appropriate training for the raters.
Training of Raters

Two teachers, one with ten years of experience and another with fifteen years of experience were selected as raters for this experimental study. The tapes produced in the pilot study were utilized in training the raters. As a means of introducing the raters to the categories of preinstructional teacher planning decisions, this investigator reviewed a pilot tape with both raters. In this way, each rater was introduced to the decision making categories as well as to the "think aloud" technique. Then, the raters examined a transcription of the same pilot tape where each decision statement had been parenthetically indicated. The raters reviewed the decision categorization process using both the "Guidelines for Categorizing Teacher Decisions" and the "Decision Data Sheet" both found in Appendix D. This procedure was repeated with four more tapes to assure that the categorization would be completed in a standard manner by both raters.

Reliability and Validity of Raters' Procedures

In order to establish the reliability and validity of the raters' categorizations, the following procedure was utilized. An experienced elementary school teacher taped a lesson according to the guidelines described in Appendix B. After the tape was transcribed, the raters jointly indicated each decision statement in parenthetical fashion. Then, each of the raters, as well as the elementary school teacher who prepared the tape, was asked to categorize the preinstructional planning decisions using the "Guidelines for Categorizing Teacher Decisions" and the "Decision Data Sheet" found in Appendix D. The validity of
their coding was established using the Pearson product-moment correlation coefficient and the results are shown in Table 2.

TABLE 2

INTER-RATER RELIABILITY USING THE PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENT

<table>
<thead>
<tr>
<th>N</th>
<th>Rater 1 with Rater 2</th>
<th>Rater 1 with Criterion</th>
<th>Rater 2 with Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation based on categorization of decisions into six categories</td>
<td>.896</td>
<td>.869</td>
<td>.974</td>
</tr>
<tr>
<td>Correlation based on categorization of decisions into eighteen categories</td>
<td>.816</td>
<td>.731</td>
<td>.875</td>
</tr>
</tbody>
</table>

The rating completed by the teacher who prepared the tape established the criterion against which each of the rater's categorizations were correlated. The table also reports the correlation established between rater 1 and rater 2. In the first row of Table 2, the coefficients represent the correlations established for the categorization of decisions based on six decision categories. The categories are: content or subject matter, objectives, materials, learner, activities or instructional processes, and evaluation. The values presented in row two of Table 2 represent the correlation established as each decision is categorized not only into one of the six decision categories, but also further classified as a behavioristic, experimentalistic, or humanistic decision. With the exception of the value specifying that
r = .974, which indicates a very high positive correlation between rater 2 and the criterion, all other correlation coefficients indicate a high positive correlation (Hinkle, Wiersma, Jurs, 1979, p. 55). In all cases the established value of r is significant at the \( \alpha = .01 \) level (Naiman, Rosenfeld, and Zirkel, 1977, p. 281) indicating a high positive linear relationship in all instances. These results establish the empirical validity of the categorization procedures utilized by the raters in classifying teacher decisions using the "Guidelines for Categorizing Teacher Decisions".

The reliability of the rater's procedures were established using the test-retest technique. Four weeks after the initial decision categorization was performed, both the raters and the teacher who established the criterion were asked to repeat the lesson codification process, again using the "Guidelines for Categorizing Teacher Decisions" and the "Decision Data Sheet." The results of the retest were correlated with the initial test using the Pearson product-moment correlation coefficient and the results are indicated in Table 3.

<table>
<thead>
<tr>
<th>TABLE 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELIABILITY OF RATERS' PROCEDURES USING THE PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENT</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Criterion</th>
<th>Rater 1</th>
<th>Rater 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test-Retest Correlation N=6</td>
<td>.929</td>
<td>.972</td>
<td>.970</td>
</tr>
<tr>
<td>Test-Retest Correlation N=18</td>
<td>.707</td>
<td>.963</td>
<td>.873</td>
</tr>
</tbody>
</table>
The results presented in Table 3 represent the correlations established for decision categorization based on six categories and eighteen categories. Although the r values for n=6 indicate a very high positive correlation, more importantly, the r values for n=18 represent a high positive correlation (Hinkle, et al., 1979, p. 55). In all cases the established value of r is significant at the $\alpha = .01$ level (Naiman, et al., 1977, p. 81) indicating a high positive linear relationship. Interpretation of these values establishes the reliability of the raters' procedures in categorizing teacher decisions where n=6 and n=18.

**Experimental Design**

The design of this study is identified as ex post facto research by Kerlinger (1979):

Ex post facto is any research in which it is not possible to manipulate variables or to assign subjects or conditions at random. Inferences are made and conclusions are drawn in non-experimental research as in experimental research, and the basic logic of inquiry is fundamentally the same.... In ex post facto research...independent variables come to the researcher, as it were, ready made. They have already exercised their effects.... (pp. 116-117)

The present study seeks to initially classify teachers according to their philosophical and practical beliefs concerning education. This classification is based upon the results obtained from the EBSI/EPBI inventories. The resulting classification establishes each teacher's individual difference variables within a philosophical framework. With this basis established, the following determinations can be made: (1) the degree of beliefs-practice congruence, (2) the relationship of individual difference variables to style of teacher planning, and (3) the
relationship of individual difference variables to types of decisions made (i.e., behavioristic decisions, experimentalistic decisions, and humanistic decisions).

In this section, each research question and its related statistical hypothesis is described in terms of its experimental design. In each case, the relationship of the variables involved are discussed in terms of one or more statistical procedure. The procedures for data analysis will be discussed in the next section.

In order to answer research question one which asks, "What is the degree of congruence between teachers' philosophical beliefs and the perceived expression of these beliefs in educational practice?", the following statistical hypothesis was formulated:

\[ H_0: \text{There is no significant difference at the .05 level of significance between teachers' philosophical beliefs and the perceived expression of these beliefs in practice.} \]

The correlation matrix seen in Figure 8 provides a framework for considering the above question. Based upon results from the EBSI/EPBI inventories, teachers were classified as behaviorists, experimentalists or humanists according to both their philosophical and practical beliefs. Each teacher's classification within this philosophical framework provides the basis for establishing the degree of association with the various individual difference variables. In this way it is possible to correlate the teacher's philosophical beliefs with the teacher's practical beliefs in order to establish the degree of congruence.
For research questions two and three the individual difference variable of practical beliefs classification represents the independent variable. This variable is composed of three levels: (A) behaviorism, (B) experimentalism, and (C) humanism. For purposes of this study, the independent variable is defined as belonging to the ordered metric level of measurement (Combs, 1953). This level of measurement falls between the ordinal and interval levels and is characterized by ordered categories where the relative order of intercategory distances is known but the absolute magnitude cannot be measured. In the case of this study, the three categories are: (A) behaviorism, (B) experimentalism, and (C) humanism. Although there is no way to ascertain distance between A, B, and C, it can be argued that B is closer to C than C is to A.
Abelson and Tukey (1970) argue that the proper assignment of numeric values to categories of an ordered metric scale allow it to be treated at the interval level of measurement. Similarly, Labovitz (1970) argues that interval statistics can be applied to any ordinal-level variable. In the present study the three levels of the independent variable were assigned proper numeric values ranging from one to three. Consequently, selection of statistical procedures appropriate for interval level data was suitable for the design of this research.

Research question two asks, "Do individual difference variables relate to the style of teacher planning?" The related statistical hypothesis states:

\[ H_0: \text{There is no significant difference at the .05 level of significance between individual difference variables and style of teacher planning.} \]

The correlation matrix seen in Figure 9 (p. 94) provides a framework for considering the above question. As each teacher is aligned with a particular level of the individual difference variable (i.e., practical beliefs classification), the degree of association between the individual difference variable and the decisions made pertinent to each of the six decision categories was determined. In other words, the decision profiles of the teachers labeled as behaviorists, experimentalists, and humanists were correlated with the six decision categories. In this way it was possible to establish whether the individual difference variable (practical beliefs classification) was related to style of teacher planning (the numbers of decisions made in each of the six categories).
The results obtained from the bivariate correlation analysis were further scrutinized using a one-way analysis of variance procedure. In each case the individual difference variable (practical beliefs classification) served as the independent variable while the six decision categories were the dependent variables.

<table>
<thead>
<tr>
<th>Individual Difference Variable</th>
<th>Practical Beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Content/Subject Matter)</td>
<td></td>
</tr>
<tr>
<td>(Materials)</td>
<td></td>
</tr>
<tr>
<td>(Objectives)</td>
<td></td>
</tr>
<tr>
<td>(Activities/Instructional Process)</td>
<td></td>
</tr>
<tr>
<td>(Learners)</td>
<td></td>
</tr>
<tr>
<td>(Evaluation)</td>
<td></td>
</tr>
</tbody>
</table>

Figure 9
Correlation Matrix
Planning Styles

In order to answer research question three which asks, "Are teachers' preactive planning decisions consistent with their philosophical and practical beliefs?", the following statistical hypothesis was formulated:
There is no significant difference at the .05 level of significance between teachers' individual difference variables and the types of decisions made (i.e., behavioristic decisions, experimentalistic decisions, or humanistic decisions).

The correlation matrix seen in Figure 10 provides a framework for considering the null hypothesis. As each teacher's actual planning decisions were analyzed by the raters, the decisions fell into one of three categories: behavioristic decisions, experimentalistic decisions, or humanistic decisions. Furthermore, since each teacher was aligned with a specific level of the individual difference variable, it was possible to establish the degree of congruence between the individual difference variable and the types of decisions made.

The results obtained from the bivariate correlation analysis were further scrutinized using a one-way analysis of variance procedure.
In each case the individual difference variable (practical beliefs classification) served as the independent variable while the three decision types (i.e., behavioristic decisions, experimentalistic decisions, humanistic decisions) were the dependent variables.

In conclusion, then, the individual difference variable that characterizes each teacher's beliefs position represents the independent variable that has not been randomly assigned to subjects, but rather determined through the assessment inventories. Since these variables have come to this researcher "ready made", the design for this study falls within the confines of ex post facto research (Kerlinger, 1979). The conclusions drawn are based upon statistical procedures which analyze the relationship of these independent variables to teacher planning decisions.

Analysis of Data

The procedure for analyzing the data in each of the matrices is based on the ability of the EBSI/EPBI inventories to discriminate individual differences relevant to philosophical and practical beliefs. Although Kessinger has previously established the reliability and validity of the test instruments, this researcher sought to reestablish the reliability and validity of the instrumentation for the present study.

Procedures involved performing a factor analysis on the 138-item test in order to identify items that may be inappropriate. Factor analytic procedures were followed by the determination of a reliability coefficient, alpha, as described earlier in this chapter. Then, in reexamining the validity, the item-total correlation coefficient was
determined for each item in order to identify additional inappropriate items. With these necessary considerations attended to, a final value for alpha was established. The groundwork was now in place to look at each research question.

The correlation matrix shown in Figure 8 (p. 92) identifies the variables which were correlated in looking at the first research question. The scores received on the EBSI inventory establish each teacher's position with regard to the individual difference variables associated with philosophic beliefs. Similarly, the EPBI scores establish the teacher's position with regard to practical beliefs. The scores on the EBSI were correlated with the scores on the EPBI in order to establish a Pearson product-moment correlation coefficient and level of significance. In this way beliefs-practice congruency was established.

The correlation matrix seen in Figure 9 (p. 94) identifies the variables associated with planning style. In this case each teacher's actual planning decisions were identified and categorized by raters as belonging to one of the six decision categories. Similarly, each teacher has been identified as being associated with a specific level of the individual difference variable (i.e., behaviorism, experimentalism, or humanism). In effect, then, there are three subgroups of teachers within the sample: one group aligned with behaviorism, one group aligned with experimentalism, and one group aligned with humanism. With this information available, a Pearson product-moment correlation coefficient for each group with their respective decisions was calculated. In this way it was possible to determine if the planning
styles of the three groups were significantly different from one another.

Results of this bivariate analysis were further analyzed using a one-way analysis of variance procedure. This procedure allows the researcher to simultaneously test the equality of means while maintaining a type 1 error (the error of rejecting a true hypothesis) rate at the established $\alpha$ level for the entire set of comparisons (Hinkle, et al., 1979). Results obtained using analysis of variance in conjunction with the test statistic, F ratio, provided additional information thereby establishing the basis for acceptance or rejection of the null hypothesis.

The correlation matrix seen in Figure 10 (p. 95) identifies the variables essential for assessing the degree of congruence between decision types (i.e., behavioristic decisions, experimentalistic decisions, and humanistic decisions) and levels of the individual difference variable (practical beliefs classification). In this case, each teacher's actual planning decisions were characterized as being behavioristic, experimentalistic, or humanistic. This classification was prepared by raters whose procedures were previously established as being reliable and valid. Additionally, each teacher's position with regard to the individual difference variable was established. It was then possible to determine the Pearson product-moment correlation coefficient and level of significance representing the degree of congruence between the individual difference variable and decision types. Results of this analysis were further scrutinized using an analysis of variance procedure as described above. These results provided additional information thereby establishing the basis for acceptance or rejection of the null hypothesis.
CHAPTER IV

RESULTS AND DISCUSSION

Introduction

This study sought to determine the degree of congruence between teacher beliefs and teacher practice. Teachers' preactive planning decisions were analyzed as a means of assessing beliefs-practice congruency. The statistical tests run on the data have been grouped according to the hypothesis to which they relate. The data for each of the three hypotheses were subjected to one or more statistical analyses. This chapter includes a presentation of the results related to each of the hypotheses. A discussion of the results follows as a separate section.

The EBSI/EPBI inventories were subjected to factor analytic procedures. Each instrument's reliability and validity was established through the determination of the coefficient, alpha. The results pertaining to the factor analysis are presented prior to the results related to each of the null hypotheses.

A Pearson product-moment correlation coefficient and level of significance were established for each of the individual difference variables on the EBSI and EPBI inventories (i.e., behaviorism, experimentalism, and humanism). Similarly, correlation coefficients and levels of significance were established as a measure of the relationship between responses assessing similar positions on each of the
inventories. Additionally, the relationship of teacher beliefs to planning style and decision types was determined using bivariate correlation analysis as well as an analysis of variance procedure.

Results of Tests Run on the EBSI/EPBI Inventories

Although the reliability and validity of the EBSI/EPBI inventories have been previously determined (Kessinger, 1979), this researcher sought to reestablish the instruments' reliability and validity for this situation. Initially, a factor analysis was run on the independent individual difference variables which the inventories claim to delineate.

Both the EBSI and EPBI inventories consists of sixty-nine (69) questions. On each inventory, the questions are equally divided into three groups of twenty-three (23) questions with each group assessing the respondee's position pertinent to one of the individual difference variables (i.e., behaviorism, experimentalism, humanism). In order to establish the fact that each set of twenty-three (23) questions was associated with only one factor, a matrix of factor loadings expressing the degree to which each of the questions in a particular set loaded on the factor in question was prepared. Results indicated that within each of the six sets of questions (three sets per inventory), there were a number of items that did not measure the factor in question. Consequently, it was necessary to delete several items from each set of twenty-three (23) questions in order to be assured that the inventory items were measuring the same thing. The coefficients in Tables 4 through 9 represent the factor loadings for those items that were selected from each set of twenty-three (23)
questions using a rotated factor matrix procedure. The results included in these tables are discussed below.

TABLE 4

FACTOR LOADING COEFFICIENTS AND ITEM-TOTAL CORRELATION COEFFICIENTS FOR ITEMS SELECTED TO ASSESS BEHAVIORISM ON THE EBSI

<table>
<thead>
<tr>
<th>EBSI Item</th>
<th>Factor 1 Coefficients</th>
<th>Item-Total Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>EB13</td>
<td>0.649</td>
<td>0.523</td>
</tr>
<tr>
<td>EB17</td>
<td>0.282</td>
<td>0.252</td>
</tr>
<tr>
<td>EB24</td>
<td>0.586</td>
<td>0.599</td>
</tr>
<tr>
<td>EB34</td>
<td>0.484</td>
<td>0.320</td>
</tr>
<tr>
<td>EB41</td>
<td>0.638</td>
<td>0.659</td>
</tr>
<tr>
<td>EB44</td>
<td>0.346</td>
<td>0.222</td>
</tr>
<tr>
<td>EB49</td>
<td>0.574</td>
<td>0.532</td>
</tr>
<tr>
<td>EB51</td>
<td>0.708</td>
<td>0.488</td>
</tr>
<tr>
<td>EB52</td>
<td>0.811</td>
<td>0.689</td>
</tr>
<tr>
<td>EB65</td>
<td>0.682</td>
<td>0.560</td>
</tr>
</tbody>
</table>

* Coefficients derived from rotated factor matrix
### TABLE 5
FACTOR LOADING COEFFICIENTS AND ITEM-TOTAL CORRELATION COEFFICIENTS FOR ITEMS SELECTED TO ASSESS EXPERIMENTALISM ON THE EBSI

<table>
<thead>
<tr>
<th>EBSI Item</th>
<th>Factor 1 Coefficients</th>
<th>Item-Total Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>EB02</td>
<td>0.279</td>
<td>0.217</td>
</tr>
<tr>
<td>EB06</td>
<td>0.836</td>
<td>0.700</td>
</tr>
<tr>
<td>EB12</td>
<td>0.634</td>
<td>0.467</td>
</tr>
<tr>
<td>EB18</td>
<td>0.722</td>
<td>0.646</td>
</tr>
<tr>
<td>EB22</td>
<td>0.712</td>
<td>0.648</td>
</tr>
<tr>
<td>EB35</td>
<td>0.550</td>
<td>0.385</td>
</tr>
<tr>
<td>EB40</td>
<td>0.677</td>
<td>0.476</td>
</tr>
<tr>
<td>EB46</td>
<td>0.651</td>
<td>0.638</td>
</tr>
</tbody>
</table>

* Coefficients derived from rotated factor matrix

### TABLE 6
FACTOR LOADING COEFFICIENTS AND ITEM-TOTAL CORRELATION COEFFICIENTS FOR ITEMS SELECTED TO ASSESS HUMANISM ON THE EBSI

<table>
<thead>
<tr>
<th>EBSI Item</th>
<th>Factor 1 Coefficients</th>
<th>Item-Total Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>EB03</td>
<td>0.732</td>
<td>0.513</td>
</tr>
<tr>
<td>EB15</td>
<td>0.616</td>
<td>0.468</td>
</tr>
<tr>
<td>EB19</td>
<td>0.802</td>
<td>0.752</td>
</tr>
<tr>
<td>EB25</td>
<td>0.765</td>
<td>0.690</td>
</tr>
<tr>
<td>EB26</td>
<td>0.610</td>
<td>0.470</td>
</tr>
<tr>
<td>EB37</td>
<td>0.718</td>
<td>0.644</td>
</tr>
<tr>
<td>EB48</td>
<td>0.619</td>
<td>0.347</td>
</tr>
<tr>
<td>EB69</td>
<td>0.453</td>
<td>0.336</td>
</tr>
</tbody>
</table>

* Coefficients derived from rotated factor matrix
### TABLE 7

FACTOR LOADING COEFFICIENTS AND ITEM-TOTAL CORRELATION COEFFICIENTS FOR ITEMS SELECTED TO ASSESS BEHAVIORISM ON THE EPBI

<table>
<thead>
<tr>
<th>EPBI Item</th>
<th>Factor 1 Coefficients*</th>
<th>Item-Total Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP76</td>
<td>0.727</td>
<td>0.629</td>
</tr>
<tr>
<td>EP79</td>
<td>0.573</td>
<td>0.451</td>
</tr>
<tr>
<td>EP85</td>
<td>0.597</td>
<td>0.632</td>
</tr>
<tr>
<td>EB90</td>
<td>0.604</td>
<td>0.621</td>
</tr>
<tr>
<td>EP100</td>
<td>0.667</td>
<td>0.699</td>
</tr>
<tr>
<td>EP107</td>
<td>0.647</td>
<td>0.660</td>
</tr>
<tr>
<td>EP108</td>
<td>0.761</td>
<td>0.674</td>
</tr>
<tr>
<td>EP123</td>
<td>0.518</td>
<td>0.376</td>
</tr>
<tr>
<td>EP126</td>
<td>0.584</td>
<td>0.563</td>
</tr>
<tr>
<td>EP130</td>
<td>0.731</td>
<td>0.679</td>
</tr>
</tbody>
</table>

* Coefficients derived from rotated factor matrix

### TABLE 8

FACTOR LOADING COEFFICIENTS AND ITEM-TOTAL CORRELATION COEFFICIENTS FOR ITEMS SELECTED TO ASSESS EXPERIMENTALISM ON THE EPBI

<table>
<thead>
<tr>
<th>EPBI Item</th>
<th>Factor 1 Coefficients*</th>
<th>Item-Total Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP89</td>
<td>0.517</td>
<td>0.481</td>
</tr>
<tr>
<td>EP91</td>
<td>0.556</td>
<td>0.441</td>
</tr>
<tr>
<td>EP97</td>
<td>0.580</td>
<td>0.451</td>
</tr>
<tr>
<td>EP103</td>
<td>0.665</td>
<td>0.611</td>
</tr>
<tr>
<td>EP104</td>
<td>0.758</td>
<td>0.686</td>
</tr>
<tr>
<td>EP105</td>
<td>0.814</td>
<td>0.694</td>
</tr>
<tr>
<td>EP106</td>
<td>0.831</td>
<td>0.840</td>
</tr>
<tr>
<td>EP111</td>
<td>0.532</td>
<td>0.439</td>
</tr>
</tbody>
</table>

* Coefficients derived from rotated factor matrix
Table 9

Factor Loading Coefficients and Item-Total Correlation Coefficients for Items Selected to Assess Humanism on the EPBI

<table>
<thead>
<tr>
<th>EPBI Item</th>
<th>Factor 1 Coefficients*</th>
<th>Item-Total Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP73</td>
<td>0.584</td>
<td>0.518</td>
</tr>
<tr>
<td>EP81</td>
<td>0.647</td>
<td>0.611</td>
</tr>
<tr>
<td>EP82</td>
<td>0.633</td>
<td>0.575</td>
</tr>
<tr>
<td>EP92</td>
<td>0.790</td>
<td>0.697</td>
</tr>
<tr>
<td>EP95</td>
<td>0.532</td>
<td>0.404</td>
</tr>
<tr>
<td>EP98</td>
<td>0.599</td>
<td>0.428</td>
</tr>
<tr>
<td>EP102</td>
<td>0.500</td>
<td>0.440</td>
</tr>
<tr>
<td>EP113</td>
<td>0.491</td>
<td>0.227</td>
</tr>
<tr>
<td>EP124</td>
<td>0.784</td>
<td>0.691</td>
</tr>
</tbody>
</table>

* Coefficients derived from rotated factor matrix.

As indicated in Table 4, only ten of the original twenty-three (23) items were utilized for the assessment of a behavioristic position with regard to educational beliefs. The deleted items did not measure association with this position; and, therefore, were not included in further analyses. The factor loading coefficients displayed in this table vary in value from 0.282 to 0.811. All factor loading coefficients were derived using a rotated factor matrix procedure. The coefficients represent orthogonal contrasts for each variable with the factor in question. All items not loading on factor 1 or items with a factor 1 load coefficient \(< 0.250\) were deleted. The 0.250 cutoff was selected in order to maintain a sufficient number of items in each set of
questions. In most cases, however, the factor loading coefficient for items selected was far above this value.

Table 5 also pertains to the EBSI inventory. The items included in this table assess the experimentalistic position pertinent to educational beliefs. Results show that eight items were included ranging in value from 0.279 to 0.836. Again, only those items meeting the criteria discussed above were included.

Results included in Table 6 pertain to the assessment of a humanistic position with regard to educational beliefs. The factor loading coefficients range in value from 0.453 to 0.802 and include a total of eight items. The remaining items were deleted since they did not load on factor 1 or the factor 1 coefficient was <0.250.

Tables 7, 8, and 9 provide the results for the behavioristic, experimentalistic, and humanistic questions on the EPBI inventory. These questions pertain to beliefs concerning educational practice. The results included in Table 7 indicate that ten items were selected for the assessment of a behavioristic position concerning educational practice. The factor loading coefficients range in value from 0.518 to 0.761. In Table 8 items are included ranging in value from 0.517 to 0.831. These items assess association with the experimentalistic position as regards educational practice. And finally, Table 9 includes nine items ranging in value from 0.491 through 0.790. These items provide information concerning one's humanistic position as related to educational practice. In each case only those items meeting the delineated criteria were retained for assessment purposes.
With all inappropriate items deleted, a test of the instruments' reliability was run. For each of the six sets of questions a reliability coefficient, alpha, was determined. Table 10 includes the results obtained from the reliability testing.

**TABLE 10**

RELIABILITY OF EBSI/EPBI INVENTORIES AFTER ITEM DELETIONS DUE TO FACTOR ANALYTIC PROCEDURES

<table>
<thead>
<tr>
<th></th>
<th>EBSI</th>
<th>EPBI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behaviorism</td>
<td>.811 (N=10)</td>
<td>.873 (N=10)</td>
</tr>
<tr>
<td>Experimentalism</td>
<td>.776 (N=8)</td>
<td>.841 (N=8)</td>
</tr>
<tr>
<td>Humanism</td>
<td>.796 (N=8)</td>
<td>.809 (N=9)</td>
</tr>
</tbody>
</table>

N = Number of items included for assessment

These results compare favorably with Kessinger's (1979, p. 32) results shown in Table 1 (p. 77). The coefficients seen in Table 10 provide support for the reliability of the EBSI/EPBI instruments modified as a result of the factor analytic procedures previously explained. The alpha coefficients determined for the EPBI assessment device are slightly higher than those determined for the EBSI inventory. On the beliefs test (EBSI), the coefficients range from an $\alpha = .776$ on the experimentalistic portion of the test to $\alpha = .796$ on the humanistic portion of the test through $\alpha = .811$ on the behavioristic portion. The higher alpha values on the practical test (EPBI) provide a range from $\alpha = .809$ on the humanistic portion of the test to $\alpha = .873$ on the behavioristic portion with $\alpha = .841$ for the experimentalistic test questions.
As a further check of test reliability, alpha coefficients were determined for both inventories prior to the deletion of any items. The results of this reliability run are included in Table 11.

**TABLE 11**

RELIABILITY OF EBSI/EPBI INVENTORIES PRIOR TO THE DELETION OF ITEMS

<table>
<thead>
<tr>
<th></th>
<th>EBSI</th>
<th>EPBI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behaviorism</td>
<td>.703</td>
<td>.887</td>
</tr>
<tr>
<td>Experimentalism</td>
<td>.789</td>
<td>.678</td>
</tr>
<tr>
<td>Humanism</td>
<td>.699</td>
<td>.802</td>
</tr>
</tbody>
</table>

N = 23

Although the values in Table 11 compare favorably with the alpha coefficients recorded in Table 10 and in Table 1 (p. 77), there is another reason for utilizing only those items included in the post factor-analytic reliability test. As discussed in Chapter III, the determination of alpha as an indication of reliability provides additional information concerning an instrument's validity. In the reliability run where N = 23, there were numerous items with an item-total correlation coefficient below the 0.210 cutoff. In other words, these items were not highly correlated with the total test; and therefore, the validity of these items was questionable. The items included in Table 10, however, have high item-total correlation coefficients. These results indicate that the factor analytic procedures resulted in the deletion of items with questionable validity leaving only those items
associated with the test that have good reliability and validity estimates.

Findings Pertaining to Null Hypothesis One

\[ H_0: \] There is no significant difference at the .05 level of significance between teachers' philosophical beliefs and the perceived expression of these beliefs in practice.

Beliefs test (EBSI). In Table 12 are shown the results when the individual difference variables on the philosophical beliefs test are correlated with one another. The results are discussed for each of the variable combinations: behaviorism with experimentalism, behaviorism with humanism, and experimentalism with humanism.

**Behaviorism with Experimentalism.** Teacher response on inventory items assessing behaviorism are significantly correlated at the \( p = 0.01 \) level to their responses concerning experimentalism. These results indicate that teachers who associate with a behavioristic position similarly associate with an experimentalistic position. Therefore, teachers apparently do not discriminate between behavioristic and experimentalistic philosophies of education.

**Behaviorism with Humanism.** Teacher response on inventory items assessing behaviorism are significantly correlated at the \( p = 0.01 \) level to their responses concerning humanism. These results indicate that teachers who associate with a behavioristic position similarly associate with a humanistic position. Therefore, teachers apparently do not discriminate between behavioristic and humanistic philosophies of education.
Experimentalism with Humanism. Teacher response on inventory items assessing experimentalism are significantly correlated at the $p = 0.001$ level to their responses concerning humanism. These results indicate that teachers who associate with an experimentalistic position similarly associate with a humanistic position. Therefore, teachers apparently do not discriminate between experimentalistic and humanistic philosophies of education.

### TABLE 12

PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENTS AND LEVELS OF SIGNIFICANCE FOR INTERCORRELATIONS OF EBSI INDIVIDUAL DIFFERENCE VARIABLES

<table>
<thead>
<tr>
<th>Educational Beliefs</th>
<th>Educational Beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Behaviorism</td>
</tr>
<tr>
<td>Behaviorism</td>
<td>1.000</td>
</tr>
<tr>
<td>Experimentalism</td>
<td>0.426*</td>
</tr>
<tr>
<td>Humanism</td>
<td>0.402*</td>
</tr>
</tbody>
</table>

* Significant at the .01 level  
** Significant at the .001 level

Practice test (EPBI). In Table 13 are shown the results when the individual difference variables on the practice test are correlated with one another. The results are discussed for each of the variable combinations: behaviorism with experimentalism, behaviorism with humanism, and experimentalism with humanism.
Behaviorism with Experimentalism. Teachers' beliefs about behavioristic teaching practice are not significantly related to their practical beliefs about experimentalism. The results presented in Table 13 indicate that teachers who identify with behavioristic practical beliefs differ from those who identify with experimentalistic practical beliefs. Therefore, teachers apparently do discriminate between behavioristic and experimentalistic practical beliefs.

Behaviorism with Humanism. Teachers' beliefs about behavioristic teaching practice are not significantly related to their practical beliefs about humanism. The results presented in Table 13 indicate that teachers who identify with behavioristic practical beliefs differ from those who identify with humanistic practical beliefs. Therefore, teachers apparently do discriminate between behavioristic and humanistic practical beliefs.

Experimentalism with Humanism. Teacher response on inventory items assessing experimentalism are significantly correlated at the p = 0.001 level to their responses concerning humanism. These results indicate that teachers who associate with an experimentalistic position similarly associate with a humanistic position. Therefore, teachers apparently do not discriminate between experimentalistic and humanistic beliefs about practice.
TABLE 13
PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENTS AND LEVELS OF SIGNIFICANCE FOR INTERCORRELATIONS OF EPBI INDIVIDUAL DIFFERENCE VARIABLES

<table>
<thead>
<tr>
<th>Practical Beliefs</th>
<th>Behaviorism</th>
<th>Experimentalism</th>
<th>Humanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behaviorism</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimentalism</td>
<td>0.176</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Humanism</td>
<td>-0.049</td>
<td>0.540*</td>
<td>1.000</td>
</tr>
</tbody>
</table>

* Significant at the 0.001 level

Beliefs-Practice Congruence. In Table 14 (p. 115) are shown the results when the individual difference variables on the philosophical beliefs test are correlated with the individual difference variables on the practice test. The results are described for each of the variable combinations: behaviorist beliefs versus behaviorist practice; experimentalist beliefs versus experimentalist practice; humanist beliefs versus humanist practice.

Behaviorist Beliefs versus Behaviorist Practice. Teacher beliefs concerning an educational philosophy and beliefs about practice are significantly correlated at the p = 0.001 level for the variable, behaviorism (Table 14, p. 115). These results would seem to indicate a significant degree of congruence between a behavioristic philosophy of education and behavioristic beliefs concerning practice. However, the
relationships presented in Table 14 (p. 115) similarly indicate a significant level of correlation between a behavioristic philosophy of education and experimentalistic beliefs about practice as well as a behavioristic philosophy of education and humanistic beliefs about practice. These results represent the impact of teachers inability to discriminate among educational philosophies on the basis of the individual difference variables as represented in Table 12 (p. 109). Consequently, the significant correlation of a behavioristic philosophy of education and behavioristic practical beliefs does not represent an exclusive relationship. In other words, a teacher's philosophical position with regard to behaviorism does not imply a correspondingly unique behavioristic position with regard to educational practice. But rather, since teachers seem to haphazardly identify with philosophical beliefs about education, their philosophical position can not be interpreted as a predictor of a specific set of practical beliefs. Therefore, the results included in Table 14 (p. 115) can not be interpreted to mean that there is a uniquely significant degree of congruence between a behavioristic philosophy of education and behavioristic beliefs about practice. This is due to the fact that teachers do not discriminate a specific set of behavioristic philosophical beliefs from the other categories of philosophical beliefs (experimentalistic, humanistic).

Experimentalist Beliefs versus Experimentalist Practice. Teacher beliefs concerning an educational philosophy and beliefs about practice are significantly correlated at the \( p = 0.05 \) level for the variable, experimentalism. Additionally, as seen in Table 14 (p. 115), experimentalistic philosophical beliefs are not significantly correlated with
behaviorist practice or humanist practice. On the other hand, experimen-
talistic beliefs concerning educational practice are significantly corre-
lated not only with an experimentalistic philosophy of education as de-
scribed earlier but also with a behavioristic philosophy of education
(p = 0.03). On the basis of these results, congruence of philosophical
beliefs and practical beliefs can not be confirmed as a uniquely signifi-
cant relationship. Furthermore, since teachers do not significantly dis-
 criminate among educational philosophies on the basis of the individual
difference variables as seen in Table 12 (p. 109), the significant corre-
lation of an experimentalistic philosophy of education and experimental-
istic practical beliefs does not represent an exclusive relationship. In
other words, a teacher's philosophical position with regard to experi-
mentalism does not imply a correspondingly unique experimentalistic posi-
tion with regard to educational practice. But rather, since teachers
seem to haphazardly identify with philosophical beliefs about education,
their philosophical position can not be interpreted as a predictor of a
specific set of practical beliefs. Therefore, the results included in
Table 14 (p. 115) can not be interpreted to mean that there is a uniquely
significant degree of congruence between an experimentalistic philosophy
of education and experimentalistic practice. This is due to the fact
that teachers do not discriminate a specific set of experimentalistic
philosophical beliefs from the other categories of philosophical beliefs
(behavioristic, humanistic).

Humanist Beliefs versus Humanist Practice. Teacher's philosoph-
ical beliefs pertinent to humanism are not significantly correlated to
their practical beliefs about humanism. The results presented in
Table 14 indicate that beliefs of teachers espousing a humanistic philosophy of education do not significantly correlate with any of the beliefs about practice. The humanistic practical beliefs, on the other hand, correlate significantly at the $p = 0.03$ level with a behavioristic educational philosophy. Again, since teachers do not align themselves with one particular set of philosophical beliefs, as seen in Table 12, this beliefs-practice congruency (behaviorism beliefs/humanism practice) as well as other beliefs-practice congruencies previously explained (behaviorism beliefs/behaviorism practice, experimentalism beliefs/experimentalism practice, and behaviorism beliefs/experimentalism practice) result from the inability of teachers to discriminate their beliefs on a philosophical basis.

Since the analysis of the philosophical beliefs test (EBSI) showed that teachers did not align themselves with one particular set of philosophical beliefs, the results of the beliefs-practice congruency analysis (Table 14) support hypothesis one. Therefore, hypothesis one, which stated that there was no significant difference between teachers' philosophical beliefs and the perceived expression of these beliefs in practice, was not rejected. Because the results of the practice test (EPBI) indicated that teachers do significantly differentiate behavioristic and experimentalistic beliefs concerning practice as well as behavioristic and humanistic beliefs concerning practice, the individual difference variables measured on this test served as the independent variables for all subsequent analyses.
TABLE 14
PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENTS AND LEVELS OF SIGNIFICANCE FOR CONGRUENCE OF EDUCATIONAL BELIEFS-PRACTICAL BELIEFS

| Practical Beliefs | Educational Beliefs | | |
|------------------|---------------------|---|---|---|
|                  | Behaviorism | Experimentalism | Humanism |
| Behaviorism      | 0.663*** | 0.025 | 0.214 |
| Experimentalism  | 0.349**  | 0.304* | 0.088 |
| Humanism         | 0.350**  | 0.153 | 0.022 |

* Significant at the .05 level
** Significant at the <.05 level
*** Significant at the .001 level

Findings Pertaining to Null Hypothesis Two

H₀: There is no significant difference at the .05 level of significance between individual difference variables and style of teacher planning.

Since behaviorists differ from experimentalists and humanists with regard to practical beliefs about education (Table 13, p. 111), this analysis sought to further differentiate these groups on the basis of planning style. Planning style is a function of the number and kinds of decisions made. The statistical procedures were designed to discriminate differences in planning styles among the three groups of teachers (i.e., behaviorists, experimentalists, humanists).

In this study, teachers' preactive planning decisions were categorized into six decision categories. These categories were: content/
subject matter, objectives, materials, learner, activities/instructional process, and evaluation. The results presented in Table 15 show that the twenty-nine (29) participants made a total of 506 decisions. The most frequently made decisions (53%) concern activities/instructional process. Decisions in this area far outnumber decisions in any of the other categories. Grouped somewhat closely together are the percent of decisions made pertinent to content, materials, and objectives (10%, 13%, 14%, respectively). The results further indicate that even fewer decisions were made concerning the learner (5%) and evaluation (2%).

TABLE 15

DISTRIBUTION OF TEACHERS' PREACTIVE PLANNING DECISIONS WITHIN THE SIX DECISION CATEGORIES

<table>
<thead>
<tr>
<th>Decision Categories</th>
<th>Number of Decisions Per Category</th>
<th>Percent of Decisions Per Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content/Subject Matter</td>
<td>51</td>
<td>10%</td>
</tr>
<tr>
<td>Objectives</td>
<td>73</td>
<td>14%</td>
</tr>
<tr>
<td>Materials</td>
<td>68</td>
<td>13%</td>
</tr>
<tr>
<td>Learner</td>
<td>26</td>
<td>5%</td>
</tr>
<tr>
<td>Activities/Instructional Process</td>
<td>278</td>
<td>53%</td>
</tr>
<tr>
<td>Evaluation</td>
<td>10</td>
<td>2%</td>
</tr>
</tbody>
</table>

N = 506

On the basis of their EPBI scores, teachers were classified according to their practical beliefs and characterized as belonging to one of the three groups previously mentioned. Subsequently, Pearson
product-moment correlation coefficients and levels of significance were established as a measure of the relationship between the independent variable, practical beliefs classification, and the six decision categories (dependent variables). The results of the analysis are presented in Table 16. These results would seem to indicate that regardless of a teacher's classification on the basis of practical beliefs, teachers in one group do not make preactive planning decisions that are significantly different from the decisions made by teachers in other groups. Consequently, even though behaviorists may differ from experimentalists and humanists with regard to practical beliefs concerning education (Table 13, p. 111), the behaviorists do not appear to make preactive planning decisions that are significantly different from the decisions made by experimentalists and humanists.

### TABLE 16

**Pearson Product-Moment Correlation Coefficients Representing the Relationship Between Practical Beliefs and Decision Categories**

<table>
<thead>
<tr>
<th>Decision Categories</th>
<th>Practical Beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>0.108</td>
</tr>
<tr>
<td>Objectives</td>
<td>-0.244</td>
</tr>
<tr>
<td>Materials</td>
<td>0.148</td>
</tr>
<tr>
<td>Learner</td>
<td>0.128</td>
</tr>
<tr>
<td>Activities</td>
<td>-0.256</td>
</tr>
<tr>
<td>Evaluation</td>
<td>0.283</td>
</tr>
</tbody>
</table>

On the other hand, the results presented in Table 13 indicate that experimentalistic and humanistic beliefs about practice are
significantly correlated at the .001 level \( (r = .54) \). The coefficients reported in Table 16 (p. 117) would seem to similarly imply that experimentalists and humanists made analogous preactive planning decisions since no significant relationships indicating distinctions are evident.

In order to look further for differences in planning style among the three groups, a one-way analysis of variance procedure was performed. In this procedure the individual difference variable (beliefs classification) served as the independent variable while the percent of decisions per category was the dependent variable. Using the SPSS one-way analysis of variance program, the independent variable was subdivided into three levels (behaviorism, experimentalism, humanism). Then, the independent variable was analyzed for its effect on the dependent variable. The results included in Table 17 indicate that the independent variable showed no significant effect by the analysis of variance procedure. In other words, no one group of teachers was significantly differentiated on the basis of the numbers and types of preactive planning decisions made with regard to the six decision categories. The ANOVA results included in Table 17 confirm the findings presented in Table 16. Apparently, teachers who associate with a specific set of beliefs concerning practice do not exhibit a planning style that is significantly different from teachers who affirm a different set of beliefs concerning practice.

From these results it appears that teachers do not have planning styles that vary concomitantly with their beliefs concerning practice. The results in Table 16 and 17 support hypothesis two. Therefore,
TABLE 17

ONE-WAY ANALYSIS OF VARIANCE OF INDEPENDENT INDIVIDUAL DIFFERENCE VARIABLES (PRACTICAL BELIEFS) AND DEPENDENT VARIABLES (DECISION CATEGORIES)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.0035</td>
<td>0.0018</td>
<td>0.179</td>
<td>0.8373</td>
</tr>
<tr>
<td>Within Groups</td>
<td>26</td>
<td>0.2564</td>
<td>0.0099</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>0.2599</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.0193</td>
<td>0.0096</td>
<td>1.427</td>
<td>0.2583</td>
</tr>
<tr>
<td>Within Groups</td>
<td>26</td>
<td>0.1757</td>
<td>0.0068</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>0.1950</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Materials</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.0096</td>
<td>0.0048</td>
<td>0.373</td>
<td>0.6922</td>
</tr>
<tr>
<td>Within Groups</td>
<td>26</td>
<td>0.3361</td>
<td>0.0129</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>0.3458</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Learner</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.0058</td>
<td>0.0029</td>
<td>0.737</td>
<td>0.4882</td>
</tr>
<tr>
<td>Within Groups</td>
<td>26</td>
<td>0.1030</td>
<td>0.0040</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>0.1089</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Activities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.0401</td>
<td>0.0201</td>
<td>1.487</td>
<td>0.2446</td>
</tr>
<tr>
<td>Within Groups</td>
<td>26</td>
<td>0.3507</td>
<td>0.0135</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>0.3908</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Evaluation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.0071</td>
<td>0.0036</td>
<td>1.572</td>
<td>0.2268</td>
</tr>
<tr>
<td>Within Groups</td>
<td>26</td>
<td>0.0588</td>
<td>0.0023</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>0.0659</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
hypothesis two which stated, there is no significant difference between individual difference variables and style of teacher planning, was not rejected.

Findings Pertaining to Null Hypothesis Three

\[ H_0: \text{There is no significant difference at the .05 level of significance between teachers' individual difference variables and the kinds of decisions (behavioristic decisions, experimentalistic decisions, humanistic decisions) that teachers make as preactive planning occurs.} \]

Since behaviorists and experimentalists as well as behaviorists and humanists have been shown to differ with regard to beliefs concerning practice (Table 13, p. 111), this analysis sought to further differentiate these groups on the basis of the decisions that they actually made. Decision types are categorized as being behavioristic, experimentalistic or humanistic.

Using the materials described in Appendices C and D, raters classified each of the teacher decisions according to type. The reliability and validity of their procedures has been discussed previously in Chapter I I I. The figures reported in Table 18 show the results obtained from the classification of decisions according to type. A total of 506 decisions were classified.
As reported in Table 18, the largest number of teacher decisions were classified as experimentalistic (445 or 88%). The second most frequently made decision type was behavioristic (51 or 10%) and humanistic decisions were least frequently made (10 or 2%).

The results included in Table 19 indicate that behaviorists, experimentalists, and humanists do not differ significantly on the basis of the types of decisions made. It would appear that regardless of one's classification with regard to the individual difference variables, teachers make decisions that do not significantly relate to their practical beliefs.
TABLE 19
PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENTS REPRESENTING THE RELATIONSHIP BETWEEN PRACTICAL BELIEFS AND DECISION TYPES

<table>
<thead>
<tr>
<th>Decision Types</th>
<th>Practical Beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioristic Decisions</td>
<td>0.239</td>
</tr>
<tr>
<td>Experimentalistic Decisions</td>
<td>-0.270</td>
</tr>
<tr>
<td>Humanistic Decisions</td>
<td>0.099</td>
</tr>
</tbody>
</table>

Correspondingly, the results included in Table 13 (p. 111) indicate that the practical beliefs of experimentalists are significantly correlated with the practical beliefs of the humanists. This finding is confirmed by the Pearson product-moment correlation coefficients found in Table 19. There are no decision types that significantly differentiate one group from another. A close look at Table 13 reveals that the practical beliefs of experimentalists and humanists are significantly correlated ($r = 0.54, p = 0.001$). Therefore, the inability of teachers to align themselves with either practical beliefs concerning experimentalism or practical beliefs concerning humanism manifests itself in the correlations seen in Table 19.

In order to look further for differences in decision types among the three groups, a one-way analysis of variance procedure was performed. In this procedure, the individual difference variable (practical beliefs classification) served as the independent variable while the three decision types were the dependent variables. Using the SPSS one-way analysis of variance program, the independent variable was
subdivided into three levels (behaviorism, experimentalism, humanism). Then, the independent variable was analyzed for its effect on the dependent variables. The results included in Table 20 indicate that the independent variable showed no significant effect by the analysis of variance procedure. In other words, no one group of teachers was significantly differentiated on the basis of their decision types. The ANOVA results included in Table 20 confirm the findings presented in Table 19. Apparently, teachers who associate with a specific set of beliefs concerning educational practice do not employ types of decisions that are significantly different from teachers who affirm a different set of beliefs concerning practice.

From these results it appears that teachers do not make preactive planning decisions that vary concomitantly with their beliefs concerning practice. The results in Tables 19 and 20 support hypothesis three. Therefore, hypothesis three which stated, there is no significant difference between teachers' individual difference variables and the kinds of decisions that teachers make during preactive planning situations, was not rejected.
### TABLE 20
ONE-WAY ANALYSIS OF VARIANCE OF INDEPENDENT INDIVIDUAL DIFFERENCE VARIABLES (PRACTICAL BELIEFS) AND DEPENDENT VARIABLES (DECISION TYPES)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Behaviorist Decisions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.0194</td>
<td>0.0097</td>
<td>0.894</td>
<td>0.4213</td>
</tr>
<tr>
<td>Within Groups</td>
<td>26</td>
<td>0.2822</td>
<td>0.0108</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>0.3016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Experimentalist Decisions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.0296</td>
<td>0.0148</td>
<td>1.282</td>
<td>0.2945</td>
</tr>
<tr>
<td>Within Groups</td>
<td>26</td>
<td>0.3001</td>
<td>0.0115</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>0.3297</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Humanist Decisions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.0014</td>
<td>0.0007</td>
<td>0.321</td>
<td>0.7281</td>
</tr>
<tr>
<td>Within Groups</td>
<td>26</td>
<td>0.0552</td>
<td>0.0021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>0.0566</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Results**

In addition to the previously described results pertinent to the three null hypotheses, findings unrelated to these hypotheses are reported for descriptive purposes and for their relevance to previous studies of a similar nature. Table 21 presents the distribution of the first and second decisions made by the teachers as they initiated
their planning process. These results indicate that the first preactive planning decision made by teachers usually pertains to content (66%) and the next, most frequently made, first decision concerns activities/instructional processes (27%). None of the teachers made a decision concerning objectives as their first decision, nor did any teacher make an evaluation decision as the first decision. Only one teacher made a first decision concerning materials and, likewise, only one teacher made a first decision concerning a learner. These results seem to indicate that although decisions pertinent to activities/instructional processes are most frequently made (Table 15, p. 116), a teacher's first decision usually pertains to content with activity decisions a distant second. Additionally, Table 21 results seem to indicate that teachers do not make first decisions about objectives or evaluation. Similarly, first decisions about materials and the learner occur very infrequently.

Table 21 also shows that a teacher's second decision usually pertains to activities (41%) with materials (20%) representing the second, most frequently made, second decision. Decisions in the area of content/subject matter (16.5%) dropped sharply when compared with their frequency as a first decision. As with the first decision made, none of the teachers made a second decision pertinent to evaluation. However, decisions concerning objectives (16.5%) were made as the second decision while only two teachers made second decisions concerning the learner (6%).
TABLE 21
DISTRIBUTION OF TEACHERS' FIRST AND SECOND PREACTIVE PLANNING DECISIONS

<table>
<thead>
<tr>
<th>Decision Categories</th>
<th>Percent of Decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st Decision</td>
</tr>
<tr>
<td>Content/Subject Matter</td>
<td>66%</td>
</tr>
<tr>
<td>Objectives</td>
<td>-0-</td>
</tr>
<tr>
<td>Materials</td>
<td>3.5%</td>
</tr>
<tr>
<td>Learner</td>
<td>3.5%</td>
</tr>
<tr>
<td>Activities/Instructional Process</td>
<td>27%</td>
</tr>
<tr>
<td>Evaluation</td>
<td>-0-</td>
</tr>
</tbody>
</table>

Discussion

The results presented in this chapter indicate that teachers do not discriminate their philosophical beliefs concerning education on the basis of the three philosophies described in this study: behaviorism, experimentalism, and humanism. On the basis of beliefs concerning practice, however, teachers do make distinctions that permit them to be perceptually classified as either a practicing behaviorist, a practicing experimentalist or a practicing humanist. The degree to which teachers establish a beliefs-practice congruency profile was not reported since it was not possible to describe teachers in terms of their philosophical beliefs.

The inability of teachers to delineate their own educational philosophy supports the findings of Kessinger (1979). The results
reported in Table 12 (p. 109) show that teacher beliefs concerning the three philosophies of education described in this study are highly correlated. Consequently, it appears that teachers do not discriminate among philosophies of education. Kessinger (1979) found that teachers were uncommitted in their choice of philosophies and did not exhibit a prevailing philosophy.

On the basis of the practice test (EPBI), teachers were able to delineate their beliefs concerning practice. The findings presented in Table 13 (p. 111) indicate that the behaviorists advocate beliefs that differ from the beliefs of both the experimentalists and the humanists. In this study seven percent (2 teachers) were classified as behaviorists, fifty-nine percent (17 teachers) were classified as experimentalists, and thirty-four percent (10 teachers) were classified as humanists. The beliefs concerning practice of the behaviorists (7%) differ from the experimentalists (59%) and from the humanists (34%).

The distinction between the experimentalists and the humanists, however, is not as apparent. The results reported in Table 13 imply the beliefs concerning practice within these two groups are correlated at a statistically significant level. Although the teachers indicate an affiliation with either experimentalism (59%) or humanism (34%), there appears to be a great deal of overlapping between the practical beliefs of experimentalists and humanists. Even though the experimentalists differ from behaviorists, they do not exhibit the same degree of distinction when compared to the humanists. Likewise, the humanists differ from the behaviorists, but do not exhibit the same degree of distinction when compared to the experimentalists. Since ninety-three
percent of the participants (27 teachers) in this study fell into either the experimentalistic or humanistic category and espouse a highly congruent set of practical beliefs (see Table 13, p. 111), it appears that these twenty-seven (27) teachers align themselves with beliefs concerning both of the positions. Consequently, those teachers classified as experimentalists (59%) share a significant number of beliefs with the teachers classified as humanists (34%) and vice versa.

Conversely, however, these two groups of teachers also have their differences. Since the Pearson product-moment correlation coefficient representing a measure of the relationship between the two groups is $r = .54$, the degree to which these two groups covary ($r^2$) is equal to .29. Obviously, then, there are many differences between these two groups. It is on the basis of these differences as well as the differences already established for the behaviorists with reference to the experimentalists and humanists that all subsequent analyses were made.

The results reported in this study indicate that regardless of a teacher's classification on the practical beliefs continuum, teachers make similar kinds of preactive planning decisions. More specifically, teachers classified as behaviorists do not differ significantly from experimentalists or humanists with regard to the kinds and types of preactive planning decisions made. Likewise, the planning decisions of experimentalists and humanists are not significantly different.

Although this study had anticipated teacher decisions to vary concomitantly with teacher beliefs, this relationship was not verified. In fact, these results support the findings of Borko et al. (1979)
indicating that teachers' educational beliefs did not predict teacher decisions. Although these same researchers claim to believe that the individual difference variable, educational beliefs, does impact on teachers decisions (Borko et al., 1979, p. 154), the results from this study do not confirm the statistical significance of this relationship.

Initially, these results may seem surprising. However, when examined within the framework of decision theory, the results appear to be consistent with the theoretical dimensions associated with decision-making. Therefore, the following discussion examines these results within the framework of decision theory and in conjunction with findings concerning the teacher planning function.

Classical decision theory maintains that decisions are formulated after consideration of all possible alternatives. In other words, teachers decide to select a particular course of action from all possible courses of action only after all alternatives have been investigated. Classical decision theory supposes that the decision maker (teacher) calculates a value for all possible alternatives and selects the alternative having the highest value. The question, then, arises: How does the teacher arrive at a value for all possible alternatives? The answer has been provided by Edwards (1954) suggesting that decision makers utilize the "subjectively expected utility maximization model," commonly referred to as the SEU model of decision making. Following the rules associated with this model, teachers are able to determine the best possible course of action from among the alternatives.
From the results obtained in this study, it appears that the factors (utility and subjective probability) associated with the SEU model impact more significantly on the phenomenon of teacher decision-making than do the teachers' educational beliefs. This does not mean that for each of the 506 decisions analyzed in this study, teachers consciously applied the rules associated with the SEU model, but rather their decisions do exhibit congruence with the theoretical dimensions of the SEU model. In order to account for the finding that educational beliefs do not impact significantly on teachers' preactive planning decisions, the teachers' decisions will be interpreted within the confines of the SEU model.

Two important factors influence a teacher's decision to select one course of action over all others. These two factors are utility and subjective probability. The interaction of these two factors, utility and subjective probability, seem to explain the apparent lack of influence of teachers' beliefs on the preactive planning and decision-making processes. The concept of utility (subjective value) is related to decision theory as one of the two permutations associated with the notion of value. Value refers to the desirability of an outcome. Subjective value, commonly known as utility, refers to the desirability of an outcome while considering the decision maker's perspective. Utility (subjective value) differs from objective value in that objective value looks at the desirability of an outcome apart from any individual's perception concerning the desirability of that outcome. Utility, on the other hand, indicates the value placed on each alternative contained within the set of all possible alternatives.
In this case, teachers, faced with the task of selecting one from among several alternatives, select the alternative perceived to provide the most utility. In other words, it would seem that teachers make decisions from their perspective (influenced by previous experiences) which lead to the most desirable outcome.

The utility assigned to each of the possible choices is only one of the dimensions impacting the decision-making process. The SEU model considers both utility and subjective probability. Subjective probability takes into account the decision maker's perceptions concerning the likelihood of the occurrence of a desired outcome. Now, if the decision maker (teacher) knows in advance which value will occur, a riskless decision can be made. A riskless decision implies certainty of outcome. If, on the other hand, the decision maker can not be certain about the outcome, a subjective estimate of the likelihood of occurrence must be made. This subjective estimate of probability is influenced by what decision theorists have termed "states of nature." Since teachers do not know in advance or with certainty that specific outcomes will occur, teachers do not make "riskless" preactive planning decisions. Consequently, the concept of "states of nature" has relevance. States of nature describe different possible conditions that can influence the course of action. These states of nature are not directly under teacher control but merit consideration due to their impact on the selection of the best course of action. For example, teachers have no control over the learning styles of their students. Some students may be visual learners, some auditory learners, and others kinesthetic learners. These learning
styles represent "states of nature" which are not directly under teacher control but certainly merit consideration when assessing the likelihood that a desired outcome will occur. If teacher planning decisions were riskless decisions, then teachers would need to be fully cognizant of all possible implication associated with the numerous states of nature influencing the planning decision. Then, teachers could be certain of the outcome prior to the decision-making process and be assured of maximum utility. Since, however, this is not the case, the relationship of utility and subjective probability to teachers' preactive planning decisions must be examined more closely.

The SEU model of decision making deals with both "risky" and "uncertain" decisions. Teachers' preactive planning decisions, in some cases, exemplify risky decisions and, in some cases, exemplify uncertain decisions. In order for the teacher to make decisions leading to the most desirable outcome, a SEU (subjectively expected utility) is calculated for each of the possible alternatives. The SEU is a mathematical expression representing the interaction of the utility and subjective probability for each of the alternatives. The SEU represents the desirability of the alternative. The SEU is determined by multiplying the utility estimate (example: value assigned on a scale from 1-10) by the subjective probability (values range from 0 to 1). The resultant number is an index of the desirability of that particular outcome. Since the best possible alternative has the highest SEU, the relationship of utility and subjective probability is evident. This discussion is not meant to imply that teachers calculate SEU's for each possible outcome but, to firmly establish the concepts of
utility and subjective probability. From the results obtained in this study, it seems apparent that these two factors, utility and subjective probability, play an important role in the teacher decision-making process associated with preactive planning.

Since in real life situations the distinction between risky and uncertain decisions proves to be purely academic (Horan, 1979), these decisions will be grouped together. Teachers' preactive planning decisions fall into this "risky-uncertain" category. Risky decisions characterize those decisions in which the value realized by the selection of an alternative is not known for certain. In other words, the probability that this decision will lead to a definite outcome is not known with certainty. In formulating preactive planning decisions teachers, in most cases, do not know unequivocally that their decisions will lead to an outcome that is certain. In order to more fully differentiate riskless and risky decisions, the following examples are presented. If it is raining at recess and the teacher decides to let the children play outdoors, the teacher can be certain that the children will get wet. This is a "riskless" decision since the outcome is known for certain, the children will get wet. Therefore, the probability estimate for the occurrence of the outcome is maximal. On the other hand, in the case of a risky decision, the teacher may decide that before the students actually begin to write about a previous day field trip to the zoo, a discussion focusing on the characteristics of the students' favorite animals will lead to the most desirable outcome. The teacher has selected this alternative from all possible courses of action.
This, however, is a risky decision since the teacher can not know for certain that the most desirable outcome will occur.

Since teachers' preactive planning decisions fall into this risky category and lead to outcomes that are not known with certainty, decisions should be made in order to maximize the expected utility. The expected utility is the value placed on the alternatives by teachers based upon their perceptions concerning the desirability of the various outcomes. Going back to the previous examples, in the case of riskless decisions, the teacher may decide that allowing the children to play in the rain at recess will lead to discomfort among the students upon their return to the classroom. They will be fidgety and uncomfortable making them unable to concentrate. Consequently, the utility (subjective value) for this decision is quite low. Since the decision maker's rule is to maximize expected utility (product of utility X subjective probability) the teacher may select another alternative for students during recess. If, on the other hand, it is raining at recess and the school building is on fire during recess, the teacher may decide that the utility associated with the decision to allow the children to go outdoors is quite high. Consequently, since the decision maker's rule is to maximize expected utility, the alternative leading to the most desirable outcome is selected. In either case, these decisions are riskless since the teacher is certain that the children will get wet if they go out. Therefore, in these examples, it is the utility that impacts most significantly on the selection among alternatives.

As mentioned previously, teachers' preactive planning decisions are predominantly risky decisions. Their decisions are made in order
to maximize the expected utility. Since the outcomes from the various alternative courses of action are not known for certain, the question arises: How do teachers maximize the expected utility?

According to Eastman (1972) two strategies (suboptimization and bounded rationality) are available to decision makers in order to maximize expected utility. From the results obtained in this study, it appears that teachers utilize these strategies in making their decisions rather than considering their philosophical and practical beliefs concerning education. Horan (1979) talks about the use of optimizing strategies in the decision-making process. These strategies are important in cases where outcomes are dependent upon one another and the optimization of one outcome results in a correspondingly lower degree of attainment for other outcomes. For example, a teacher may decide to initiate a creative writing lesson with a discussion concerning a previous day field trip to the zoo realizing that a few students may gain more from a pantomine activity. However, since most students realize success via the discussion approach, the decision to begin the lesson with a pantomine activity is suboptimized in terms of the discussion approach.

Realistically speaking, however, teachers do not suboptimize all possible alternatives. In cases where optimizing strategies would require the processing of large amounts of information that could easily overload the individual's psychological capacity, Simon's (1960) concept of "bounded rationality" has relevance. Since Miller (1956) has shown that human capacity for processing information is $7 \pm 2$ categories, it is oftentimes impossible to identify and evaluate all
possible outcomes. Consequently, the decision makers selectively ignores some possibilities in the decision-making process. Consequently, an option is selected from within a limited set. The option selected is perceived to lead to the most desirable outcome.

In this study it appears that teachers utilize various instructional activities (Table 15, p. 116) that yield satisfaction (subjective probability estimate) and that their decisions are based upon their previous successes with these activities. The work of Yinger (1977) would seem to support the notion that teachers examine a limited set of alternatives (bounded rationality) during the planning process. He found that teacher planning revolves around the use of instructional activities as well as a limited set of established teacher routines. These routines serve to increase the predictability (subjective probability estimate) of classroom activities thereby reducing the complexity (optimizing strategies) of the situation. Furthermore, Clark and Yinger (1979 b) indicate that teachers limit their search for ideas to resources immediately available. In the present study, teachers were specifically asked to prepare a creative writing lesson in order to prevent the use of teacher manuals and workbooks. In this way teachers would have to make their own planning decisions rather than rely upon the directives or suggestions within a guidebook. The results, however, confirm the findings of Clark and Yinger (1979 b) indicating a limited search for alternatives. In this case the resources immediately available were the limited set of established teacher routines. Teachers do not seem to consider all possible alternatives, alternatives that may be congruent with their educational beliefs, but instead select from a limited
set of alternatives that have previously been successful (subjective probability estimate). It appears, then, that teachers' risky decisions are made based upon a SEU for each of the alternatives within the limited set. The expected utility for each alternative outcome is consistent with teachers' previous experiences rather than with their educational beliefs.

As mentioned earlier, the distinction between risky and uncertain decisions is primarily academic. The distinction, however, will be elaborated since the theoretical implications provide a more thorough basis for understanding the results obtained in this study. The distinction between risky and uncertain decisions is based upon the accuracy of the subjective probability estimate. From a theoretical point of view, risky decisions imply that the decision maker is aware of the subjective probability associated with each of the alternative outcomes. In uncertain decisions, the subjective probability for each outcome is not known. For example, if a teacher has not previously utilized a particular strategy, the subjective probability associated with the desirability of the outcome is not known. In the present study, the fact that teachers did not make decisions on the basis of their educational beliefs, implies that their limited set of alternatives (bounded rationality) does not include alternatives consistent with their beliefs. Therefore, if teachers were to make decisions congruent with their beliefs, they would be selecting alternatives that exist outside of their limited set of routines. As a result, they would have no point of reference for estimating the subjective probability associated
with the outcome. This would lead to the formulation of an uncertain decision.

The distinction between risky and uncertain decisions, however, is primarily theoretical since in real life situations, teachers are not one-hundred percent sure of the subjective probability associated with each alternative. Teachers' preactive planning decisions do not infer certainty of outcome nor do they infer certainty about the probabilities of receiving utility from all alternatives available. Therefore, it appears that when making preactive planning decisions, teachers utilize the SEU model. After culling pertinent experiences (suboptimization and bounded rationality) and affixing probability estimates according to their best "guesstimate" (whether risky or uncertain), teachers make decisions that maximize the expected utility.

In addition to the results obtained relevant to the three null hypotheses, additional findings were reported for descriptive purposes and for their relevance to previous studies of a similar nature. The results included in Table 21 (p. 126) confirm the findings of Taylor (1970) indicating that planning begins with a consideration of the content to be taught. Although content decisions, on the whole, were not the most frequent decisions made (Table 15, p. 116), they were the most frequently made first decisions (66%). It would appear that in the initial stages of lesson preparation, teachers are primarily concerned with making decisions about the subject matter of the lesson.

Similarly, Zahorik (1975) found that teachers make content decisions first. Additionally, however, he found that teachers most frequently make decisions concerning activities/instructional processes.
Likewise, Clark and Yinger (1979 b) reported that teachers consistently plan around the use of activities. The results reported in Table 15 (p. 116) confirm this finding. The most prevalent decisions categorized in this study pertained to activities/instructional processes (53%). The importance of decisions concerning instructional processes has also been reported by Yinger (1977). He maintains that teacher planning revolves around the use of instructional activities and the use of teacher routines. The impact of teacher routines on teacher planning has been previously discussed within the context of decision theory. The results reported in Table 15 appear to confirm Yinger's (1977) assertions concerning the importance of decisions relevant to activities/instructional processes.

The work of Mintz (1979) and Clark and Yinger (1979 b) establish that learning objectives are seldom the starting point for planning. The results reported in Table 21 (p. 126) confirm this finding. None of the teachers in this study made a first decision concerning learning objectives. Additionally, Mintz (1979) found that teachers made no decisions concerning evaluation. The results reported in Tables 15 and 21 would support the claim that teachers make very few planning decision concerning evaluation. Table 21 indicates that no first decision or second decision was concerned with evaluation. Additionally, only two percent of all decisions categorized in this study pertained to evaluation. From these results it would appear that during the preactive phase of teacher planning, decisions in the area of evaluation are infrequently made.
Mintz (1979) also reported that teacher planning decisions are primarily concerned with activities, content, and materials. The relative frequency of these decisions as reported in Table 15 confirms these findings (53%, 10%, and 13%, respectively).

In conclusion, then, it would appear that teachers begin their planning with a consideration of the subject matter to be covered. Following this decision, teachers select activities and instructional processes that will permit them to cover the content in a fashion that, according to their perceptions, will lead to the most desirable outcome. Teachers also make decisions about the kinds of materials that will be used throughout the lesson. Decisions about materials are made early in the preactive planning process as indicated by their relatively high frequency (20%) as reported in Table 21 (p. 126). Decisions concerning objectives are not a priority in the teacher preparation routine. Although the figures reported in Table 15 (p. 116) indicate that fourteen percent of all decisions concerned objectives, none of the teachers made a first decision in the category. Additionally, evaluation did not prove to be an area of significant concern for teachers during their preactive planning process. From the results reported in this study, as well as similar findings in previous studies, it appears that the preactive planning processes for experienced teachers differ substantially from the format prescribed in the literature concerning planning.
Summary of the Study

This study sought to gather information pertinent to the concept of teacher planning. Teachers' preactive planning decisions were analyzed in order to provide information concerning the relationship between teacher beliefs and teacher practice. Additionally, the influence of teachers' beliefs on the determination of planning style as well as types of decisions made was investigated.

The subjects were twenty-nine (29) experienced elementary school teachers working in the Chicago Metropolitan area. Teachers were recruited from two Graduate Schools of Education (Lewis University, Romeoville, Illinois and Concordia College, River Forest, Illinois) as well as several suburban school districts. Although the initial sample included thirty-three (33) participants, four (4) cases were deleted due to experimental mortality.

All twenty-nine (29) participants prepared an audio-taped recording of their preactive plans for a creative writing lesson based upon a previous day field trip to the zoo. Furthermore, all participants were administered the Educational Beliefs System Inventory and the Educational Practice Beliefs Inventory developed by Dobson, Dobson, Grahlman and Kessinger (see Appendix A).
The EBSI/EPBI inventories established each teacher's individual position within a philosophical framework. Teachers were classified on the basis of their philosophical beliefs concerning education and their beliefs concerning practice. Each teacher's individual classification on this basis represented alignment with one of the individual difference variables (i.e., behaviorism, experimentalism, humanism). Audio-taped recordings of the teachers' creative writing lesson plans were analyzed and preactive planning decisions were categorized on the basis of the six decision categories (content/subject matter, objectives, materials, learner, activities/instructional processes, and evaluation). Furthermore, each decision was classified according to type (behavioristic decision, experimentalistic decision, humanistic decision).

A bivariate correlation analysis was used to determine the degree of congruence between teacher beliefs concerning education and teacher beliefs concerning practice as measured on the EBSI/EPBI inventories. Bivariate analyses were also used to assess the relationship of teacher classification on the basis of the individual difference variables with planning style and decision types. These relationships were further analyzed using a one-way analysis of variance procedure. Each null hypothesis used an alpha decision level of .05.

Findings

The results of the statistical analyses of data are as follows:
1) $H_0$: There is no significant difference at the .05 level of significance between teachers' philosophical beliefs and the perceived expression of these beliefs in practice.

This study found that teachers do not discriminate among philosophical beliefs concerning education. Results obtained through bivariate correlation analysis indicated that the relationship between philosophical beliefs aligned with behaviorism and experimentalism as well as with behaviorism and humanism were significant at the .01 level. Additionally, the relationship between philosophical beliefs aligned with experimentalism and humanism were significant at the .001 level. Evidently, teachers do not specifically ally themselves with any one of the three prevailing philosophies of education described in this study.

It appears, however, that teachers do discriminate among practical beliefs concerning education. Results obtained through bivariate correlation analysis indicate that behaviorists differ from both experimentalists and humanists with respect to their practical beliefs. The distinction between the practical beliefs of experimentalists and humanists similarly exists, but to a lesser degree. From these results, it appears that teachers do make distinctions in their beliefs about practice differentiated on the basis of the three prevailing philosophies described in this study.

The results obtained through bivariate correlation analysis would seem to indicate a statistically significant degree
of congruence between teachers' philosophical beliefs and the perceived expression of these beliefs in practice, for both behaviorists and experimentalists. This finding, however, must be juxtaposed to the results indicating that teachers do not discriminate among philosophical beliefs concerning education. Consequently, the statistically significant results cannot be interpreted to affirm beliefs-practice congruency since the philosophical basis for teachers was not firmly established. Therefore, null hypothesis one was not rejected.

2) $H_0$: There is no significant difference at the .05 level of significance between individual difference variables and style of teacher planning.

Teachers' preactive planning decisions were initially classified according to the six decision categories utilized to describe teacher planning style. These categories are: content/subject matter, objectives, materials, learner, activities/instructional processes, and evaluation. The results obtained from the EPBI were utilized to classify teachers as behaviorists, experimentalists, or humanists (independent individual difference variables). A Pearson product-moment correlation coefficient was calculated as a measure of the relationship between teacher planning style and the individual difference variables. A significant level of correlation was not established. Further analyses were performed using a one-way ANOVA. Results
indicate that the independent variable showed no significant effect by the analysis of variance procedure. Consequently, it appears that teacher planning styles are not significantly influenced by teacher beliefs about practice. Therefore, null hypothesis two was not rejected.

3) $H_0$: There is no significant difference at the .05 level of significance between teachers' individual difference variables and the kinds of decisions (behavioristic decisions, experimentalistic decisions, humanistic decisions) that teachers make as preactive planning occurs.

Teachers' preactive planning decisions were initially classified according to type. The three types of decisions are: behavioristic decisions, experimentalistic decisions, and humanistic decisions. The results obtained from the EPBI were utilized to classify teachers as behaviorists, experimentalists, or humanists (independent individual difference variables). A Pearson product-moment correlation coefficient was calculated as a measure of the relationship between teacher decision types and the individual difference variables. A significant level of correlation was not established. Further analyses were performed using a one-way ANOVA. Results indicate that the independent variable showed no significant effect by the analysis of variance procedure. Consequently, it appears that the types of decisions teachers make are not significantly influenced by teacher beliefs concerning practice. Therefore, null hypothesis three was not rejected.
Besides the findings pertinent to the three null hypotheses, additional findings of a descriptive nature were reported. These findings confirm the work of previous researchers (Clark & Yinger, 1979 b; Mintz, 1979; Taylor, 1970; Yinger, 1977; Zahorik, 1975) who have made contributions in the area of teacher planning. A frequency distribution reporting teachers' preactive planning decisions was prepared. The results indicate that teachers most frequently made decisions concerning activities/instructional processes (53%). Teachers also make a large number of decisions in the following areas: content (10%), materials (13%), and objectives (14%). Teachers make fewer decisions concerning the learner (5%) and evaluation (2%). Additionally, the results indicate that the first decision that teachers make pertains to content/subject matter (66%). The next most frequently made, first decision, concerns activities/instructional processes (27%). As a second decision, teachers most frequently make activities/instructional processes decisions (41%). The next most frequently made, second decision, pertains to materials (20%). No decisions about objectives were made as first decisions. No decisions about evaluation were made as first decisions or as second decisions.

Conclusions

This study was designed to gather information concerning the phenomenon of teacher thinking (i.e., teacher planning and teacher decision making). Teachers' preactive planning decisions were analyzed as a means of providing information concerning the relationship of teacher thought to teacher action. The basic premise underlying this
research assumed that teachers' implicit theories (thought) influence teachers' planning decisions (action).

The following conclusions were reached from the findings of this investigation and apply only to the participants in this study:

1) Teachers do not discriminate among their philosophical beliefs concerning education as differentiated on the basis of the three prevailing philosophies of education delineated in this study: behaviorism, experimentalism, humanism. It appears that teachers identify with several philosophies in general, but with no one philosophy in particular.

2) Teachers make distinctions in their beliefs concerning practice. It appears that when the theoretical dimensions of an educational philosophy are interpreted in terms of educational practice, teachers are more likely to identify with one prevailing philosophy rather than with several philosophies in general.

3) Teachers do not exhibit a beliefs-practice congruency as established on the basis of the three philosophical positions represented in this study. Since teachers identify with several educational philosophies in general, rather than with one prevailing philosophy, a beliefs-practice congruency estimate based upon the beliefs measured in this study could not be determined.

4) Teacher planning styles do not appear to be directly influenced by teacher beliefs. Regardless of teacher alignment with one
of the three philosophical positions described in this study, teachers make similar kinds of preactive planning decisions.

5) The types of decisions (behavioristic decisions, experimentalistic decisions, humanistic decisions) that teachers make do not appear to be directly influenced by teacher beliefs. Regardless of teacher alignment with one of the three philosophical positions described in this study, teachers make similar types of preactive planning decisions.

6) Teachers' preactive planning decisions appear to be influenced by the teacher's determination of a subjectively expected utility value for each course of action from within a limited set of alternatives. Consequently, teachers select the alternative that in their perception leads to the most desirable outcome. Teacher beliefs do not appear to be a factor impacting on the determination of the subjectively expected utility value for the various alternatives under consideration.

7) Teachers' preactive planning revolves around the formulation of various instructional activities. Although teachers usually begin their planning with a consideration of content/subject matter, subsequent decisions are primarily concerned with the formulation of appropriate activities meant to bring about the most desirable outcomes. The results of the present study indicate teachers do not appear to consider objectives as a starting point for lesson preparation nor do they consider evaluation decisions to be a priority during the teacher preparation routine.
Recommendations

Because preactive planning represents such an important aspect of a teacher's professional responsibilities, and as a result of the findings of this study, the following recommendations are made:

1) Teacher education programs and in-service programs need to place more emphasis on educational beliefs and values as well as the relationship of these qualities to the teaching-learning process. In this way, teacher beliefs may prove to be a factor impacting on preactive planning decisions.

2) Teacher education programs need to provide students with increased clinical exposure in settings where desirable outcomes are demonstrated using a variety of alternative approaches. Similarly, in-service programs that expose teachers to a variety of alternatives leading to desirable outcomes need to be designed. Since it appears that teachers make decisions based upon the subjectively expected utility value associated with various alternatives, exposure to a wide variety of desirable alternatives may modify the set from which teachers select alternatives.

3) Since preactive planning requires decision-making based upon incomplete information, teachers face problems of uncertainty and unpredictability. Therefore, teacher education programs as well as in-service programs must address the wide range of
mental activities included in the teacher planning process. Attention should be given, but not limited to the following mental activities associated with teacher thinking: predicting, guessing, weighing, restructuring, and visualizing.

4) Teacher education programs should acknowledge and support the notion that teachers plan in a variety of ways. Since experienced teachers do not follow the procedures delineated in the traditional prescriptive models (Eisner, 1967; Tyler, 1950), exposure to alternative approaches should be provided.

**Suggestions for Further Research**

1) The two instruments (EBSI/EPBI) need to be restructured with a focus on the verification of the reliability and validity estimates.

2) Since only seven percent of the sample population were classified as behaviorists, this study should be replicated using a larger sample.

3) The preactive planning decisions of first and second year teachers as well as student teachers should be analyzed to see whether their planning styles and decision types vary concomitantly with their beliefs. Since these teachers and student teachers have not had as many years to develop a set of teacher routines, their beliefs may impact significantly on their planning decisions.
4) A study designed to assess the impact of teacher beliefs on the other components of the decision-making model proposed by Borko et al. (1979) might serve to describe more fully the significance of this variable for the decision-making process.

5) Due to the fact that teachers appear to make decisions in a fashion that is consistent with the theoretical dimensions of classical decision theory, a study designed to analyze teacher perceptions concerning the utility and subjective probability of various alternative outcomes for a specific lesson should be designed. This would provide information concerning the subjectively expected utility value that teachers associate with various alternative outcomes. Perhaps teachers do consider alternatives that are consistent with their beliefs, but because the expected utility for these alternatives is uncertain, teachers select a course of action that has previously brought about a desirable outcome.

6) Since teachers plan primarily around the use of instructional routines, a study designed to assess the impact of teacher beliefs on teacher routines would provide more information concerning the significance of teacher beliefs in the teacher planning process.
A Final Word

The process of preactive planning is a complex task recently described as a hidden aspect of teaching that often times occurs in empty classrooms or at home on weekends (Clark & Yinger, 1980). Only recently have researchers begun to analyze teacher thoughts and teacher decisions as an avenue for gathering information concerning the teacher planning process.

Numerous factors influence the decisions that teachers make as preactive planning proceeds. These influences include teacher characteristics, student characteristics, curriculum characteristics, and environmental factors (Clark & Yinger, 1980). This study sought to gather information pertaining to only one category of variables that impact on teachers' preactive planning decisions, teacher characteristics. Teacher beliefs represent one of several teacher characteristics that interact collectively to influence the teacher planning process. Although teacher beliefs do not appear to directly influence teacher planning decisions, their significance as part of the total package of teacher characteristics must be considered. Since teacher planning represents such an important aspect of the teacher's professional life, continued research in this area is essential.
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APPENDIX A
EDUCATIONAL BELIEFS SYSTEM INVENTORY

PART I

Russell Dobson
Judith Dobson
W. Frank Grahlman
John Kessinger

Oklahoma State University
The reader is due an explanation about sexism problems related to this instrument. Most sensitive persons are aware of the problems of sexism in our society, terms which take the place of the generic use of "man", "mankind", and the pronoun "he" are awkward to use in a work of this nature. Terms are used in order not to unduly distort ideas. We hope the reader will understand the dilemma of the writers.
EDUCATIONAL BELIEF SYSTEM INVENTORY

Part I

Following is a list of 69 statements concerning various aspects of educational theory. Please judge each of the statements according to the scale to the right. In making your judgments, DO NOT consider each statement from the viewpoint, "This is how it is now." Rather, DO CONSIDER "This is what I really believe."

What do you believe about man?

1. Man can be characterized clearly in terms of his behavior.  
   1 2 3 4 5

2. Man's behavior is based on cognition, the act of knowing or thinking about a situation and not on the situation itself.  
   1 2 3 4 5

3. Man is greater than the sum of his parts.  
   1 2 3 4 5

4. Man is a malleable and passive reactor to his environment.  
   1 2 3 4 5

5. Man is best described in relative terms according to time, circumstance, and place.  
   1 2 3 4 5

6. Man is a social being and seeks identity through interaction with others.  
   1 2 3 4 5

7. Man has an inherent tendency toward self-actualization and productivity.  
   1 2 3 4 5
8. Man's behavior is predictable.  
9. Man's characteristics can be studied independently of one another.  
10. Man can only be studied as a whole.  
11. Individual perceptions are the only reality known to man.  
12. Man is an active organism that develops goal-seeking potential.  
13. Man's significance is determined by the work he performs which is motivated by the promise of reward.  
14. Freedom for an individual means growth and the willingness to change when modifications are needed.  
15. Man defines his own human potential through choices.  

What do you believe about motivation?

16. Reinforcement (reward) must follow immediately after the desired behavior and be clearly connected with that behavior in the mind of the learner for learning to occur.  
17. Behaviors which are reinforced (rewarded) are likely to recur.
18. Cognitive processes are set into motion (thinking) when the learner encounters an obstacle, difficulty, puzzle or challenge in a course of action which interests him.

19. Children are naturally curious and will explore their surroundings without adult interference and encouragement.

20. Children will create tasks that are of educational significance and structure methods of accomplishing these tasks when given the freedom to so so.

21. Productive learning experiences require active involvement.

22. Learning occurs best when the purposes and needs are realistic, meaningful and useful to the learner.

23. Appropriate external stimulation of the learner is necessary for optimal achievement.

24. Frequency of repetition is necessary in acquiring skills and in bringing about overlearning to guarantee retention.

25. True learning occurs when the experience is internalized.

26. The desire to learn comes from within the individual.
27. Productive learning takes place when the tasks
are adjusted to the maturity and experiential
background of the learners. 1 2 3 4 5

What do you believe about the conditions of learning?

28. The mind consists of separate, but related
faculties which can be trained. There is
automatic transfer of training. 1 2 3 4 5

29. If a child is absorbed with and enjoying
an activity, learning is occurring. 1 2 3 4 5

30. Confidence in self influences learning. The
stage of development of the child affects the
degree of participation or involvement in
learning tasks as well as mastery of skills. 1 2 3 4 5

31. The educative process begins with providing
the learner with a smorgasboard of activities
that fit his/her stage of development and which
reflects his/her concerns and interests. 1 2 3 4 5

32. Children are perceptually closer to the learning
situation than are teachers: Subsequently, they
see and feel what is needed and are capable of
self-direction. 1 2 3 4 5

33. Learning is largely a reactive experience. 1 2 3 4 5

34. Learning occurs best when competition for
rewards among learners is induced. 1 2 3 4 5
35. Learning processes proceed best when the learner sees results, has knowledge of his status and progress, achieves insight, and gains understanding.

36. Man's mind is an information receptacle which can produce factual content mastery.

37. Learning emerges in the flow and continuity of man's total experiencing and growing.

38. Expectations made of the learner should be based upon knowledge of his abilities which are determined by physiological and social development.

39. Children are best taught exploratory behavior when threat is not present.

40. Children receive many satisfactions from work and stimulation from reasonable new challenges.

41. The purpose of school is to prepare children for adulthood so they can assume a contributing role in society.

42. When man chooses, he chooses for all men.

43. When groups of individuals act for a common goal there is better cooperation and more friendliness than when individuals in the groups are engaged in competition with one another.
44. Behavior is a social product.

45. Satisfaction in learning is affected by the group atmosphere as well as the products.

46. Man has the capacity to adopt, adapt, and reconstitute present and past ideas and beliefs. He also has the capacity to invent.

47. Man creates his own environment.

48. Man creates groups which agree with his own reality.

49. Children should be motivated to learn what is significant and contributory to their lives.

50. Man is a social being who seeks active involvement with others.

51. Self-concept is observable through one's behavior or performance.

What do you believe about intellectual development?

52. People possess different levels and amounts of intelligence. These can be ascertained and reported by a score derived from testing.

53. The normal curve expresses the social and academic expectation of where people are supposed to fit for the goodness of all.

54. Readiness for learning is a complex interplay of social, physiological, emotional and intellectual development.
55. The less planned adult intervention, the greater intellectual gains of the child.  

56. Increase in intelligence test scores are positively related to aggressiveness, competiveness, initiative, and strength of felt need to achieve.  

57. Learning involves creating relationships. Intellectual development proceeds from "wholes" to "parts" or from a simplified whole to more complex wholes.  

58. Knowledge is a model created by the individual that makes sense out of encounters with the external conditions in the environment.  

59. Truth exists prior to the learning of it.  

60. Knowledge is temporary and conditional.  

61. Information becomes knowledge when it is perceived as relevant to the solutions of a particular problem.  

62. Little or no knowledge exists which is necessary for all humans to possess.  

63. Truth can be known for itself and not merely for some instrumental purposes.  

What do you believe about knowledge?

A B C

Score 

A B C

Score 

A B C
What do you believe about society?

64. Society is a process in which individuals participate.  
   1  2  3  4  5

65. The school preserves social order and builds new social orders when the public decides they are needed.  
   1  2  3  4  5

66. Mankind is made man by cultural birth.  
   1  2  3  4  5

67. Society is self renewing.  
   1  2  3  4  5

68. The way to improve civilization is by improving institutions.  
   1  2  3  4  5

69. Society has existence in man's mind.  
   1  2  3  4  5

A   B   C

Score  _____  _____  _____

TOTAL SCORE (PART I)  A   B   C
The reader is due an explanation about sexism problems related to this instrument. Most sensitive persons are aware of the problems of sexism in our society, terms which take the place of the generic use of "man", "mankind", and the pronoun "he" are awkward to use in a work of this nature. Terms are used in this instrument which some may see as sexist ones, but they were used in order not to unduly distort ideas. 

We hope the reader will understand the dilemma of the writers.
EDUCATIONAL PRACTICE BELIEF INVENTORY

PART II

Following is a list of 69 statements concerning various aspects of educational practice. Please judge each of the statements according to the scale to the right. In making your judgements, DO NOT consider each statement from the viewpoint, "This is how it is now." Rather DO CONSIDER "This is what I really believe."

What do you believe about instruction?

70. Ongoing assessment, immediate feedback and various reinforcement devices should be used to insure that students remain task oriented. 1 2 3 4 5

71. The study period should be organized through mutual agreement between teacher and pupils with each child knowing what is expected of him. 1 2 3 4 5

72. Children naturally set goals and enjoy striving toward them. 1 2 3 4 5

73. Children receive many satisfactions from work, have pride in achievement, enjoy the process, and gain a sense of worthiness from contribution. 1 2 3 4 5
74. The teacher functions as a resource person to individuals and groups rather than as a task-master.
75. Transmission of verifiable facts which constitute universal skills is necessary.
76. The ends of instructional activities should be exemplified in explicit behavioral terms.
77. Children who understand and who are involved in what they are doing will create satisfactory methods for achieving educational tasks.
78. Learning activities should be provided on the basis of individual needs.
79. Diagnostic and prescriptive teaching are absolute necessities.
80. Heterogenous subgrouping for instructional purposes is recommended in certain skill development areas such as math and reading.
81. Children are capable of assuming responsibility for their behavior and academic growth.
82. Children desire to be released, encouraged and assisted.
83. The teacher should decide when it is time to pull loose ends of learning activities together before moving on to another aspect of that which is to be learned.
84. Management of children is necessary to insure proper growth.
What do you believe about curriculum?

85. The curriculum is a predetermined body of content with highly defined and restricted delimitations.  

86. Day-by-day lesson plan objectives must be well defined and specific.  

87. The curriculum should emerge from each student.  

88. In order to maintain balance in the curriculum, subject matter priorities should be determined on the basis of societal and personal needs.  

89. There should be some system of articulation between units within a school, between schools, with school systems, and between states.  

90. Curriculum content must be sequenced since there is a logical structural sequence to knowledge.  

91. Due to individual educational needs, the scope of the curriculum should be planned to include a wide variety of unifying and pupil-speciality learning activities.  

92. The curriculum should reflect as its source, the children of that school.
93. The curriculum sequence and scope is best divided into segmented, isolated, and compartmentalized packages of knowledge specified by grade levels.

94. Elements of the curriculum should be derived from the substance of knowledge itself.

95. The curriculum is dynamic because of its constant emergence.

96. Curriculum structure exists largely in teachers' and students' heads, not on paper.

97. Though the curriculum has some degree of systematic structure, it should be flexible enough to capitalize on emergent learning situations.

98. Since the curriculum must be considered dynamic and forever emerging, each curriculum area should be subjected to continuous revision and evaluation.

99. The curriculum sequence in certain subject matter areas should be based on a spiral structure which permits the learner to conceptualize by moving from limited perceptivity.

Score _____ _____ _____
What do you believe about organization?

100. The teaching function should be one of diagnosing, prescribing, treating, analyzing results and writing the next prescription.

101. Individual differences should be viewed as existing between and among learners as opposed to differences existing within individual students.

102. The school should be organized in such a way that it provides opportunity for each student to have a warm, personal relationship with competent teachers.

103. The contributions of specialized personnel should be used as students progress through the school, but their work should be coordinated with and related to the total program.

104. Internal coordination and planning should result in the utilization of special talents and skills which a particular teacher or group of teachers may possess.

105. The organizational system should permit coordination and planning by groups of teachers responsible for clusters of children in both large and small groups.

106. The horizontal organization of the school should permit flexibility in assigning small and large numbers of pupils to instructional groups.
107. Individual differences should be acknowledged by the individual pacing of students through prescribed study sequences.  

108. The horizontal organization of the school should permit students to be assigned to instructional groups on ability within subject matter areas.  

109. The organization of the school should reflect a system whereby each child must measure up to a specific level of performance.  

110. The organizational structure should not result in "labeling" children at an early age.  

111. The vertical organization of the school should provide for continuous unbroken, upward progression of all learners, with due recognition of the wide variability among learners in every aspect of their development.  

112. The organizational design of the school should be an expression of the needs and desires of its clientele.  

113. The organization should provide for the interdisciplinary nature of education.  

114. Children should not be grouped according to ability.

A B C

Score ________ ________ ________
What do you believe about content?

115. The content of any education program must reflect predetermined survival skills necessary for life. 1 2 3 4 5

116. Content should contribute to the achievement of educational objectives or to the mission of the school. 1 2 3 4 5

117. There is little information that all should be required to know. 1 2 3 4 5

118. Sequence in content should reflect a logical structural sequence to knowledge and to development. 1 2 3 4 5

119. One creates knowledge through personal integration of experience. Therefore, one's knowledge does not categorize into separate disciplines. 1 2 3 4 5

120. There should be a balance between the content-centered curriculum and the process curriculum. 1 2 3 4 5

What do you believe about materials and resources?

121. Centralized resource centers should include materials commensurate to the stages of development reflected by the students being served. 1 2 3 4 5

122. Emphasis should be placed on trade and reference works and on visual aids as opposed to a strict textbook approach. 1 2 3 4 5
123. Materials that can be easily prescribed (programmed materials, teaching machines, subject matter programs, learning packets, and kits) are desirable.

124. Wide use should be made of raw materials.

125. Resources should be limited only by teachers' and students' imaginations.

126. There should be an emphasis on appropriate diagnostic aids.

Score

What do you believe about evaluation?

127. A uniform standards approach to evaluation fails to consider individual differences of children.

128. Evaluation programs should have three dimensions: a) quantitative measurements, b) teachers' judgement, and c) the child's perceptions.

129. Learning can be assessed intuitively by observing a child working or playing.

130. A pupil should be placed in a given learning environment based on a diagnosis that it is best suited for his/her maturity, abilities attainment, and over-all general nature.
131. Evaluation must be quantitative and qualitative to be of real value.

132. Objective means of measuring performance may produce negative consequences upon learning.

133. In evaluating, the teacher's description of what the child is doing should include all aspects of growth.

134. Pupils should be ranked in terms of other children.

135. Errors are an indispensable aspect of the learning process. Errors are expected and desired, for they contain feedback essential for continued learning.

136. Qualities of one's learning that can be meticulously assessed are not inevitably the most important.

137. Predetermined standards should apply to all students in a grade or school.

138. Academic standards should serve the purpose of excluding or including persons in the formal school program.

A  B  C

Score   _____ _____ _____

TOTAL SCORE (PART II) A____ B____ C____
APPENDIX B
INTRODUCTORY EXPLANATION

As an experienced teacher, you are needed to participate in research on teacher planning for a doctoral dissertation. You will be asked to plan a lesson into a tape recorder. This method was chosen in an attempt to capture some of the spontaneity and thought processes that normally precede your instructional decisions.

It is important to emphasize that the tapes will be anonymous and no judgments will be made concerning the quality of these lessons. It is an information-gathering study. Please feel very comfortable, then, attempt to present a picture of yourself as you usually do your thinking and planning.

Take some time to gather your thoughts. As you begin speaking into the recorder, do not worry about a smooth, perfectly organized presentation. If something important comes to mind, be sure to include it, even if it's not in exactly the right place.

HANDOUT FOR TEACHERS

Task

Assume you are working with the students currently enrolled in your class. Provide a brief description of your class including grade level and any other pertinent descriptive information.

After a field trip to the zoo, prepare a creative writing follow-up lesson for the next day. Design this lesson to last for no longer than one hour. This does not mean that you must talk into the
tape recorder for one hour, but rather than the lesson, when implemented, may last up to one hour. Your plans should be sufficiently detailed so that your tape portrays a verbal picture of your planned lesson. Be as specific as possible describing every aspect of your lesson. (The direction, focus, and methods are yours to decide. A favorite technique or method is welcome.)
The following material pertaining to A Model for Curriculum Dialogue: The Language of Schooling was referenced by the trained raters as they classified the various decision statements contained in the teacher's lesson plans. The information which follows concerning this model is from Kessinger (1979, pp. 118-122).
A MODEL FOR CURRICULUM DIALOGUE:
THE LANGUAGE OF SCHOOLING

As persons seek to identify their philosophic roots, it is helpful to have a classification tool for categorizing various opinions about schooling. The model entitled, The Language of Schooling, is presented as such a device. The content of the model is presented for contemplation and discussion purposes only and is not intended to be final in nature.

The model is an attempt to identify and contrast philosophical and psychological profiles that tend to separate into three camps: 1) Design A, 2) Design B, and 3) Design C. This separation is quite possibly a direct reflection of whether persons are primarily concerned with doing to, for, or with young people. The three camps can be dispersed on a continuum ranging from training to education.*

An educational program committed to the training end of the continuum is based in the notion that human beings are the sum total of their experiences--passive victims of their environments. Conversely, the opposite end of the continuum is committed to the notion that human beings are active, goal-seeking organisms eager to profit from encounters with the environment.

*For a more extensive discussion relative to this point, the reader is referred to Chapter VI in Dobson and Dobson, Humaneness in the Schools: A Neglected Force. Dubuque, Iowa: Kendall-Hunt Publishers, 1976.
<table>
<thead>
<tr>
<th>BASIC ELEMENTS</th>
<th>DESIGN A</th>
<th>DESIGN B</th>
<th>DESIGN C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Movement toward External Control</td>
<td>Movement toward Internal Control</td>
<td></td>
</tr>
<tr>
<td>Human Nature</td>
<td>Humans are potentially evil.</td>
<td>Humans are potentially both good and bad or blank slates.</td>
<td>Humans are potentially good.</td>
</tr>
<tr>
<td>Nature of Learning</td>
<td>Truth exists separate from the individual.</td>
<td>Truth is relative and subject to the condition of the learner and the environment. Learning occurs by action.</td>
<td>Truth is an individual matter. Learning occurs when the information encountered takes on personal meaning for the learner. Learning occurs by transaction and interaction.</td>
</tr>
<tr>
<td>BASIC ELEMENTS</td>
<td>DESIGN A</td>
<td>DESIGN B</td>
<td>DESIGN C</td>
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<tr>
<td>Purpose of Education</td>
<td>To understand and apply knowledge. To control the environment. To learn absolute truth.</td>
<td>To learn prerequisite skills for survival. To learn conditional truths.</td>
<td>To live a full life. To experience the environment. To continue learning personal truth.</td>
</tr>
<tr>
<td>Human Growth and Development</td>
<td>Growth is environmentally determined.</td>
<td>Growth is the realization of one's potential.</td>
<td>Growth is the experiencing of one's potential.</td>
</tr>
<tr>
<td>Concept of Self</td>
<td>Determined by what others think. Focuses on personality deficiencies.</td>
<td>Determined by how the individual perceives the social environment (becoming-future orientation).</td>
<td>Determined and created by each individual (being-now orientation).</td>
</tr>
<tr>
<td>BASIC ELEMENTS</td>
<td>DESIGN A</td>
<td>DESIGN B</td>
<td>DESIGN C</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Instructional Behavior</strong></td>
<td>Transmission of facts and content. Purposeful.</td>
<td>Grouping for instructional convenience. Inquiring. Discovering. Open</td>
<td>Learner directed. Learner invitation. Teacher functions as source of</td>
</tr>
<tr>
<td></td>
<td>Management. Teacher directed.</td>
<td>questions with multiple answers. Teacher invitation.</td>
<td>safety and support.</td>
</tr>
<tr>
<td></td>
<td>Product oriented.</td>
<td>Focuses on what is learned</td>
<td>damaging comparison.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Focuses on how one feels about what is learned as well as what is learned.</td>
</tr>
</tbody>
</table>

**DEFINITION**

- A structured series of intended learning outcomes.

  - M. Johnson (1967)

- A sequence of potential experiences set up in school for the purposes of disciplining children and youth in group ways of thinking and acting.

  - Smith, Stanley, Shores (1957)

- An attempted definition of man translated into educational specifications.

  - R. Dobson (1976)
Basic Elements

Representative Language

Design A
- Structure
- Management
- Reinforcement
- Shaping
- Labeling
- Performance
- Accountability
- Order
- Objectives
- Behavior
- Matching
- Environment
- Cause-effect
- Function
- Measurement
- Control
- Observation
- Reality
- Transmission of roles
- Intelligence
- Grades
- Standards
- Tests
- Cover
- Direct

Design B
- Sequence
- Stages
- Becoming
- Growth
- Development
- Correlated
- Interest
- Programs
- Diagnostic
- Readiness
- Technique
- Skills
- Activity
- Individual differences
- Rational
- Well-adjusted
- Progress
- Motivation
- Expectations
- Understanding
- Guide
- Knowledge
- Evaluation
- Enable
- Support
- Help
- Facilitate
- Discipline
- Interests
- Meaningful

Design C
- Being
- Desires
- Process
- Democratic
- Freedom
- Feedback
- Fulfillment
- Experience
- Diversity
- Perception
- Potential
- Harmony
- Personal order
- Self-direction
- Accepting
- Unique
- Awareness
- Consequences
- Sharing
- Trusting
- Allow
- Issues
- Experiment
- Involve
- Options
- Natural
- Spontaneous
- Personal meaning

Training (To)

(Essentialism/
Behaviorism)

(Experimentalism/
Cognitive)

(Establishedism/
Humanism)
The material which follows was sent to this investigator as a result of personal communication with the authors. The handout entitled, *Perceptual Baseline System: A Humanized Approach to Staff Development*, was prepared by the authors in response to the inquiries received concerning their model and includes an interpretation of the sub-tests included in the EBSI and EPBI.
PERCEPTUAL BASELINE SYSTEM:
A HUMANIZED APPROACH TO
STAFF DEVELOPMENT

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(405) 624-7122
PROGRAM DESCRIPTION

The main theses of this proposal is that schools are complex social organizations and that simplistic approaches to improving the quality of schools are ineffective. To improve the quality of schools, emphasis must be placed upon the person of individuals (school personnel and students) who interact daily. West states that schools have sanctioned an organizational farce by assuming teachers are "... a carbon copy of his/her colleagues." Further, because schools tend to view teachers as if they were cast from the same mold, many teachers experience a loss of identity and alienation from self. This loss of person results in the schools benefiting neither the students nor the teachers.

Individuals possess a philosophy of life whether they are conscious of it or not. One's philosophy, personal values and beliefs, form the foundation from which one makes choices or decisions during his/her lifetime. Basic to a teacher's personal philosophy is his/her belief about human nature or the belief about people and how they grow and develop. Purkey and Avila emphasize that the teachers' beliefs concerning the worth and dignity of individuals are paramount and that in order to identify good and poor teachers, it is necessary to explore how teachers see themselves and the world around them.

According to Beniskos, "Teaching is not just a matter of possessing skills, nor of being possessed by skills either." Usher and Hanke agree when they state, "The primary 'tool' with which teachers work is themselves." There is a definite need for teachers to recognize their own philosophic beliefs and how these beliefs are expressed in their teaching behavior.

Traditionally, inservice education has concentrated on imparting specific skills—that is, training. Training is designed to help the trainee face situations exactly like those for whom the training has been designed. Therefore, the aim is to prepare the trainee to perform in a predetermined way. Institutions as well as individuals are viewed from a systems perspective couched in a deficit orientation. That is, a person to be educated or a school system to be improved is seen as a problem to be corrected in order to be brought up to a standard.

The perceptual base line system, the model we created, is a process approach that focuses on the facilitation of awareness of an individual's degree of congruency between his/her beliefs and day to day operations in the school setting. Additionally, the system provides group data that allows an individual to compare his/her personal beliefs with the collective beliefs of colleagues.

Since the perceptual base line system is a process planning technique (outcomes are not predetermined) the assignment of an operational definition is difficult, if not impossible. The system will vary according to time, circumstances, place, and persons involved. However, the
recommended instrumentation has served as an adhesive to give the approach similar procedural structure in several school districts where it has been implemented.

Usually educational decision and planning are based on base line data. In this approach information is obtained through some kind of need assessment procedure (usually a questionnaire) designed to accommodate the needs of the institution being assessed as opposed to being sensitive to the persons within the institution. The participants (teachers and students) are viewed as role players in an ongoing drama instead of persons in the process. Base line data is role and institutional oriented; perceptual base line data is person oriented, consequently having philosophical-values, psychological, and emotional dimensions. As have been substantiated, decisions about schooling are value statements; therefore, any effort at school improvement must begin with the values and beliefs of those involved. This neglected area of school improvement must be brought to the forefront if inservice education is to have any lasting effect.

The need assessment or base line data approach focuses on the role of teacher; and the perceptual base line focuses on the person of the teacher. The following is an attempt to contrast the two approaches.

<table>
<thead>
<tr>
<th>Need Assessment Approach</th>
<th>Perceptual Base Line System</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Obtains information about teachers' needs that will serve to enhance the role as determined by institutional goals.</td>
<td>1. Obtains information about personal beliefs and practices and provides teacher with this information.</td>
</tr>
<tr>
<td>2. Recommendations for school improvement are made to bring teaching skills up to standard as set by institution.</td>
<td>2. Individual is presented with personal data relative to educational beliefs and practices.</td>
</tr>
<tr>
<td>3. School objectives are established by institution.</td>
<td>3. Individual is encouraged to determine personal beliefs.</td>
</tr>
<tr>
<td>4. Content for implementation of inservice programs is selected and organized by representatives of the institution.</td>
<td>4. Individual plans personal program of self and professional growth.</td>
</tr>
<tr>
<td>5. Learning experiences are selected and organized by institutional representatives, usually supervisory personnel.</td>
<td>5. Individual and/or groups of individuals initiate, design, develop and implement active inservice learning experiences.</td>
</tr>
<tr>
<td>6. An evaluation design is specified by institution.</td>
<td>6. Individual and/or groups of individuals revise and refine current activities.</td>
</tr>
</tbody>
</table>
Activities engaged in by persons according to the two approaches generally do not vary greatly. The emphasis is on priority of the persons' beliefs over role needs.

We have designed a strategy for planning and decision making that identifies the beliefs that collectively constitute a personal philosophy of education and also the variables necessary to create or establish a phenomenon calling schooling. Our efforts with this strategy indicated the need to create a two part instrument entitled Part I: Educational Beliefs System Inventory, and Part II: Educational Practice Belief Inventory. The instruments identify the degree to which persons are experiencing beliefs-praxis congruency between their professed beliefs and educational practices. The instrumentation is intended as a tool for dialogue and self assessment rather than a technique for evaluation.

Copies of the two instruments, a subtest key for interpretation, plus a sample profile are attached.
Subtest Key

Each sub-test (1 through 16) yields an A, B and C score with A representing Behaviorism, B representing Cognitivism, and C representing Humanism. The scale is from complete agreement (a score of 1) to complete disagreement (a score of 5) pertaining to these philosophical beliefs. A score of 1 on sub-test A1 would indicate complete philosophical agreement with Behaviorism in what you believe about Man while a score of 5, on the same sub-test, would indicate the opposite (complete disagreement with Behaviorism regarding what you believe about Man).

Sub-test 8 gives an overall A, B and C score on the EBSI (Educational Belief System Inventory). Sub-test 15 gives an overall A, B and C score on the EPBI (Educational Practice Belief Inventory). Sub-test 16 gives an overall A, B and C score on all items (1 through 138), combining the two instruments for a composite score.

The completed inventories yield a 48 dimension philosophical profile of the individual with regard to Educational Belief and Educational Practice.

The following interpretations are based on scores of 1 which indicate complete agreement. The degree of agreement can be ascertained by the score reported on each of the separate sub-tests.
### PART I - EDUCATIONAL BELIEF SYSTEM INVENTORY

<table>
<thead>
<tr>
<th>Sub-test</th>
<th>Items</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1, B1, C1</td>
<td>1-15</td>
<td>What do you believe about Man?</td>
</tr>
<tr>
<td>A2, B2, C2</td>
<td>16-27</td>
<td>What do you believe about Motivation?</td>
</tr>
<tr>
<td>A3, B3, C3</td>
<td>28-39</td>
<td>What do you believe about the Conditions of Learning?</td>
</tr>
<tr>
<td>A4, B4, C4</td>
<td>40-51</td>
<td>What are your beliefs concerning Social Learning?</td>
</tr>
<tr>
<td>A5, B5, C5</td>
<td>52-57</td>
<td>What do you believe about Intellectual Development?</td>
</tr>
<tr>
<td>A6, B6, C6</td>
<td>58-63</td>
<td>What do you believe about Knowledge?</td>
</tr>
<tr>
<td>A7, B7, C7</td>
<td>64-69</td>
<td>What do you believe about Society?</td>
</tr>
<tr>
<td>A8, B8, C8</td>
<td>1-69</td>
<td>(This is a composite A, B and C score for the above 69 items.)</td>
</tr>
</tbody>
</table>

### PART II - EDUCATIONAL PRACTICE BELIEF INVENTORY

<table>
<thead>
<tr>
<th>Sub-test</th>
<th>Items</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>A9, B9, C9</td>
<td>70-84</td>
<td>What do you believe about Instruction?</td>
</tr>
<tr>
<td>A10, B10, C10</td>
<td>85-99</td>
<td>What do you believe about Curriculum?</td>
</tr>
<tr>
<td>A11, B11, C11</td>
<td>100-114</td>
<td>What do you believe about Organization?</td>
</tr>
<tr>
<td>A12, B12, C12</td>
<td>115-120</td>
<td>What do you believe about Content?</td>
</tr>
<tr>
<td>A13, B13, C13</td>
<td>121-126</td>
<td>What do you believe about Materials and Resources?</td>
</tr>
<tr>
<td>A14, B14, C14</td>
<td>127-138</td>
<td>What do you believe about Evaluation?</td>
</tr>
<tr>
<td>A15, B15, C15</td>
<td>70-138</td>
<td>(This is a composite A, B and C score for these 69 items.)</td>
</tr>
<tr>
<td>A16, B16, C16</td>
<td>1-138</td>
<td>(This is a composite A, B and C score for all 138 items.)</td>
</tr>
</tbody>
</table>
The following interpretations are based on scores of 1, which indicate complete agreement. The degree of agreement for each individual can be ascertained by the score reported on each of the separate sub-tests.

PART I

Sub-test

A-1 Man's potential tends toward evil. Therefore, for the good of society and themselves, children must be directed and controlled. These persons attempt to shape learners according to their values and to teach them what they should know.

B-1 A neutral belief of man is expressed. These persons begin with children where they are perceived to be functioning and manipulate the environment so that the children have the best possible experience based on the adult's judgement of what is best. Human potential is seen as a goal to be realized. The total person is one who is in harmony with the external environment.

C-1 Man is inherently inclined toward goodness. Man is cooperative and constantly seeking experiences that enhance his/her unique self. Individual perceptions are the only reality known to man.

A-2 Motivation is interpreted as the process of initiating, sustaining and directing the activities of the organism. Appropriate external stimulation, usually in the form of rewards is necessary for optimal achievement.

B-2 Focuses on a blend of the teacher as manipulator and the intellectual structures that characterize what is to be taught.

C-2 Focuses on the person as the initiator of their own learning tasks. The most desirable rewards are internal in nature and are a reflection of self satisfaction.

A-3 Focuses on training the separate faculties of the mind. Learning is largely a reactive experience, therefore, learning situations should be created to induce competition for rewards among learners.
Sub-test

B-3 Focuses on a combination of self confidence, physiological, social, and intellectual development in determining learner expectations. Also concerned with whether or not learning tasks are lifelike or functional. Concerned with the learner working up to his/her ability.

C-3 Recognizes that the learner is perceptually closer to the learning situation than are teachers: subsequently, they see and feel what is needed and are capable of self-direction. Experiencing, being, and learning are seen as a totality that can be dichotomized only after the fact. Learning emerges in the flow and continuity of man's total experiencing and growing. There cannot be stated outcomes of learning.

A-4 Social learning is seen as the gradual acquisition of attitudes and behavior that enable the individual to function as a member of society. Emphasis is on the development of behavior patterns which are acceptable to society.

B-4 Focuses on how the individual functions relative to group norms. Satisfaction in learning is affected by the group atmosphere as well as the products.

C-4 Accepts that man can create his/her own environment. Sees the person as central to their own idiosyncratic universe.

A-5 Intelligence, is for the most part, a function of environmental conditions. Persons possess different levels and amounts of intelligence.

B-5 Focuses as much on learning style as on learning rate. Readiness for learning is a complex interplay of social, physiological, emotional, and intellectual development.

C-5 Emphasizes that intellectual development proceeds from "wholes" to "parts" or from a simplified whole to more complex wholes. See intellectual potential as already existing within the individual as opposed to a phenomenon to be developed or realized.

A-6 Submits the existence of a central body of knowledge that must be transmitted to all. The truth is pre-existent to the learning of it. The test of truth is its correspondence to reality.
Sub-test

B-6  Emphasizes that knowledge is rooted in experience. Knowledge is therefore tentative. As individuals and situations change, then what is true will also change. Workability is the test of truth.

C-6  Submits that the only thing persons can be certain of is that they experience a stream of thoughts and feelings. Truth is an individual matter.

A-7  Sees the function of schooling as preserving social order and building new social orders when the public has decided they are needed (preservation of the culture). The task of the school is to develop a standardized student-citizen as the product. Tendency is toward a meritocratic society.

B-7  Society is a process in which individuals participate. The major role of the school is to teach the adults of tomorrow to deal with the planning necessarily involved in the process called society. Education must serve as a source of new ideas.

C-7  Specifies that the way to improve society is through improving the quality of individuals, not through improving institutions. The schools primary task is individual; that is, the school should concentrate upon the development of absolute freedom in the child. The tendency is toward an egalitarian society.

A-8  Composite score - Essentialism/Behaviorism

B-8  Composite score - Experimentalism/Cognitivism

C-8  Composite score - Existentialism/Humanism
PART II

Sub-test

A-9  Focus is on indoctrination. The transmission of verifiable facts is paramount. Instructional activities are preplanned with specific performance objectives clearly stated.

B-9  The role of the teacher is seen as learning manager and consultant whose primary task is to orchestrate the learning environment.

C-9  Instructional behavior of the teacher is determined by the learner and occurs only by invitation from the learner. Freedom of the learner is central to the instructional act.

A-10 Curriculum is highly structured and content centered; it is predetermined and logical. It consists of a common core of subject matters, intellectual skills, and accepted values that are essential and are to be transmitted to all students.

B-10 Future utility and universalism are considered in the selection of content. The sequencing of content is based on identified stages of development. Learning experiences are generally problem centered.

C-10 The curriculum is viewed as dynamic and emergent on a consequence of the students' needs, wants and desires. Each student is seen as an unlimited reservoir of curriculum.

A-11 The organizational arrangement is rigid and orderly in nature; emphasis is on management and efficiency. Time-space are segmental.

B-11 Flexible scheduling is related to instructional needs of the staff. Individualized instruction occurs by pacing the individual through study sequences.

C-11 Individual pupils plan their own use of time within limits of personal and social order. The organization provides for the interdisciplinary nature of education; no area of knowledge can exist independent of all other areas of knowledge.

A-12 The content is decided by the state. Suggests the desirability of a shared corpus of content. The planners' task is the identification of common content.
Emphasis is on a balance between the content-centered curriculum and the process-centered curriculum.

Concerned with process skills that enable the person to know, to think, to value, to feel and to act. The quality of being is more important than quality of knowing; knowledge is a means of education, not its end.

Emphasis is on materials that correlate with a diagnostic approach and that can be easily prescribed such as programmed materials, teaching machines, subject matter programs, learning packets and tests.

Emphasis is on a wide range of materials and resources.

Resources are limited only by teachers' and students' imaginations.

Evaluation reveals itself in the form of measurement and is based on comparisons and is product oriented. Evaluation standards and procedures are determined by authority and imposed upon students.

Focuses on what is learned and attempts to utilize this information in prescribing future learning tasks. Attempts to evaluate critical thinking, problem solving, and higher order cognitive skills.

Focuses on self evaluation. External feedback is available upon student requests and is a shared experience.

Composite score for A, Part II

Composite score for B, Part II

Composite score for A, Part II

Total composite score for A, Parts I and II

Total composite score for B, Parts I and II

Total composite score for C, Parts I and II
REFERENCES


GUIDELINES FOR CATEGORIZING TEACHER DECISIONS

TRANSCRIBED TAPE
DEcision DATA SHEET

Introduction

The preinstructional teacher planning decisions that were recorded in this study using the "think aloud" technique were categorized by the raters using the following guidelines. These guidelines were prepared as a synthesis of the information included in the model entitled The Language of Schooling and in the handout entitled Perceptual Baseline: A Humanized Approach to Staff Development, both of which appear in Appendix C.

Directions

Using the guidelines for categorizing teacher decisions, raters classified teacher decisions on two dimensions. Initially each decision was assigned to one of the six decision-making categories. These categories are content or subject matter, objectives, materials, learner, activities or instructional process, and evaluation. Then, each decision was further classified as a Design A, B, or C decision. A Design A decision implies a behavioristic approach, a Design B decision implies an experimentalist approach, and a Design C decision advocates a humanistic approach.
Guidelines

Using the information included in the following chart, each decision was assigned to one of the six decision categories.

Categories of Planning Decisions

<table>
<thead>
<tr>
<th>Decision Categories</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content/Subject Matter</td>
<td>What subject, topic, idea is the teacher going to present, deal with, etc.?</td>
</tr>
<tr>
<td>Objectives</td>
<td>Why is the teacher doing it? (Because she/he wants the student to __________.)</td>
</tr>
<tr>
<td>Materials</td>
<td>What items mentioned by the teacher will be utilized as the lesson is designed and implemented?</td>
</tr>
<tr>
<td>Learners</td>
<td>What decisions does the teacher make which relate to an individual student or specific group of students?</td>
</tr>
<tr>
<td>Activities/Instructional Process</td>
<td>How is the teacher (student) going to do it? (In other words, how will the teacher (student) behave?)</td>
</tr>
<tr>
<td>Evaluation</td>
<td>How will the teacher measure or assess learning?</td>
</tr>
</tbody>
</table>

After each decision was assigned to one of the six decision categories, each decision was further classified within a philosophic framework. A Design A classification implies a behavioristic approach, a Design B decision implies an experimentalistic approach, and a Design C decision advocates a humanistic approach. The chart below, used in conjunction with the materials included in Appendix C, provides direction for philosophic distinctions.
### Philosophic Distinctions within the Six Decision Categories

<table>
<thead>
<tr>
<th>Decision Categories</th>
<th>Design A</th>
<th>Design B</th>
<th>Design C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content/Subject Matter</strong></td>
<td>Highly Structured.</td>
<td>Structured but with individual or group differences.</td>
<td>Self-awareness exercises, self-revelation experiences.</td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td>Teacher sets goals with class as whole in mind.</td>
<td>Teacher sets goals with individuals in mind.</td>
<td>Learner helps determine goals.</td>
</tr>
<tr>
<td><strong>Learners</strong></td>
<td>Skills and subjects are to be transmitted to all students. Focus on homogeneous grouping. Learner is a blank slate.</td>
<td>Learning occurs by action and, therefore, learner must be actively involved. Focus on skill grouping.</td>
<td>Students plan and organize their own time. Focus on heterogeneous grouping.</td>
</tr>
<tr>
<td><strong>Activities/Instructional Process</strong></td>
<td>Rote drills, memorization, direct copying, following explicit directions, lectures, timetables, progress charts, set program of activities, homogeneous grouping, repetitive tasks.</td>
<td>Paraphrase (opposed to memorizing), organized directions but child has some leeway on how and what, options to choose from, group discussions, inquiry method questioning, skill grouping.</td>
<td>Wide range of options: experiments, loose timetable, heterogeneous grouping, peer help, experience charts, inquiry method.</td>
</tr>
<tr>
<td><strong>Evaluation</strong></td>
<td>Standardized test comparative reward system, look at end result or product, measure facts or content.</td>
<td>Criterion referenced test (as opposed to standardized test). Look at learner and end product. Reward for effort and achievement.</td>
<td>No formal tests: self-evaluation, peer feedback, look at learner, self-checking, individual goals, informal criterion-referenced test.</td>
</tr>
</tbody>
</table>
My last class, from a small suburban Catholic school, was composed of 25 third graders from middle-class families.

On the day following our field trip to the zoo, (I will have a creative writing and art lesson.) To start the lesson, (we will have a class discussion concerning the events of our trip) (in order to refresh their memories, generate ideas, and emphasize that creative writing is the written expression of our spoken language).

(The next step in our preparation will be a brief review of beginning, middle, and end paragraph structure.) (To help them in this, I will give several different examples of introductory and concluding sentences.) (Also, I will put key words on the board for their use, such as "first", "later", "then", "also", "finally", etc.)

After reviewing paragraph structure, (I will ask them to try beginning each sentence differently.) As an example, (I would ask them not to write eight sentences that state: I saw a zebra, I saw a giraffe, I saw an elephant, etc.) From past experiences, I have found it very effective to give exaggerated examples of what isn't a good paragraph. They pay closer attention to specific examples. (To further stress sentence variety, I will suggest their relating what they enjoyed most, least; what they thought was pretty, ugly, funny, sad, etc. They may write about particular experience or tell a little about everything.)
Lastly, we will put the relevant vocabulary on the board: animal names, zoo name, souvenirs, etc.

Now they will begin writing, putting a title on their paper first. (At this point I will tell them not to be overly concerned about handwriting, spelling, grammar, and punctuation.) (Getting their ideas down on paper is the primary concern.) (They may ask for help while writing. I will help individually those children who are having trouble getting started by asking them questions about their experiences.)

As they finish this rough draft, they will bring their paper up to me one at a time. If the sentences lack variety or the paragraph lacks coherence, I will suggest revisions and/or additions. I will correct with them the spelling, punctuation, and grammar mistakes with a colored pen.

(The next day they will rewrite their rough draft) on (theme paper making the indicated changes.) On this revision I will stress good handwriting, spelling, grammar, and punctuation.

(When they finish rewriting, they will do an art project to accompany their paragraph.) (I will put out art paper and geometric pattern shapes. They have previously been shown how to form almost any animal from basic shapes. They may draw freehand if they wish. The animals will be cut and pasted onto construction paper. The art work can be completed in any way they choose. Their paragraph will then be attached to the art work.) (All papers will receive a decorative sticker and comment as a reward for their efforts, and all papers will be displayed in the room.)
(In conclusion, creative writing can be difficult for young children if they don't have personal experiences to draw ideas from. Therefore, the trip to the zoo provided a good opportunity to have them express themselves on paper while the excitement of the day was still fresh in their minds.)

(The art project was added as a reward for their work, writing and rewriting the paragraphs.) (Shape design, cutting, and pasting were chosen for improving perception, spatial relations, and motor skills.)
<table>
<thead>
<tr>
<th>Content or Subject Matter</th>
<th>Objectives</th>
<th>Materials</th>
<th>Learner</th>
<th>Activities or Instructional Process</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A B C</td>
<td>A B C</td>
<td>A B C</td>
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</table>
The dissertation submitted by Kathleen Cieplak Owens has been read and approved by the following committee:

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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

4-13-81
Date

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Director's Signature