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PRESCHOOL STUDENT TEACHER BEHAVIORS IN LABORATORY SCHOOL SETTINGS AS CORRELATED WITH CONCEPTUAL SYSTEMS

DISSERTATION

Presented in Partial Fulfillment of the Requirement for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By
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* * * * *

The Ohio State University
1982

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>ii</td>
</tr>
<tr>
<td>VITA</td>
<td>iv</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>vii</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>xi</td>
</tr>
<tr>
<td><strong>Chapter</strong></td>
<td></td>
</tr>
<tr>
<td>I. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>- Background of the Problem</td>
<td>1</td>
</tr>
<tr>
<td>- Conceptual Framework</td>
<td>4</td>
</tr>
<tr>
<td>- Theoretical Base</td>
<td>5</td>
</tr>
<tr>
<td>- Presage Variables</td>
<td>5</td>
</tr>
<tr>
<td>- Process Variables</td>
<td>7</td>
</tr>
<tr>
<td>- Purpose in the Study</td>
<td>7</td>
</tr>
<tr>
<td>- Hypotheses</td>
<td>8</td>
</tr>
<tr>
<td>- Research Questions</td>
<td>9</td>
</tr>
<tr>
<td>- Assumptions</td>
<td>10</td>
</tr>
<tr>
<td>- Definition of Terms</td>
<td>11</td>
</tr>
<tr>
<td>- Limitation of Study</td>
<td>14</td>
</tr>
<tr>
<td>- Summary of Study</td>
<td>14</td>
</tr>
<tr>
<td>II. REVIEW OF LITERATURE</td>
<td>16</td>
</tr>
<tr>
<td>- Overview of Research on Teaching</td>
<td>16</td>
</tr>
<tr>
<td>- Model of Classroom Teaching</td>
<td>20</td>
</tr>
<tr>
<td>- Teaching Behaviors</td>
<td>26</td>
</tr>
<tr>
<td>- State of the Art: Process-Product Research</td>
<td>26</td>
</tr>
<tr>
<td>- Teaching Variables</td>
<td>30</td>
</tr>
<tr>
<td>- Warmth</td>
<td>30</td>
</tr>
<tr>
<td>- Enthusiasm</td>
<td>34</td>
</tr>
<tr>
<td>- Clarity</td>
<td>35</td>
</tr>
<tr>
<td>- Variety</td>
<td>36</td>
</tr>
<tr>
<td>- Individualization</td>
<td>37</td>
</tr>
<tr>
<td>- Feedback</td>
<td>39</td>
</tr>
<tr>
<td>- Cognitive Demand</td>
<td>41</td>
</tr>
<tr>
<td>- Freedom</td>
<td>43</td>
</tr>
<tr>
<td>- On-Task Activity</td>
<td>45</td>
</tr>
</tbody>
</table>
Chapter

II. REVIEW OF LITERATURE (Continued)

Summary .................................. 46
Conceptual Systems ........................ 47
Summary ................................... 63
Family Background ...................... 63
Summary ................................... 69
Summary of Chapter ...................... 69

III. METHODOLOGY .......................... 71

Preschool Teacher Competency
  Project .................................. 71
Sample .................................... 72
Research Sites ............................ 72
Design .................................... 74
Instrumentation ........................... 77
  Background Information
    Questionnaire .......................... 77
    Conceptual Systems Test ............... 78
    The Observer Rating Scales .......... 81
Procedures ................................ 85
Analysis of Data .......................... 87

IV. RESULTS OF THE INVESTIGATION ........ 90

Description of Subjects .................. 92
  Demographic Data ........................ 92
  Study Variables .......................... 96
Discussion ................................ 101
Tests of Research Hypotheses ............. 104
  Hypothesis One .......................... 105
  Hypothesis Two .......................... 107
  Hypothesis Three ........................ 109
Discussion ................................ 111
Exploration of Research Questions ...... 113
  Question One ............................. 114
  Question Two ............................. 116
  Question Three ........................... 117
  Question Four ............................ 119
Discussion ................................ 127
  Question Five ............................ 134
  Question Six ............................. 137
  Question Seven ........................... 140
Discussion ................................ 144
Summary of Chapter ....................... 146
Chapter

V. SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS ........................................ 149

Summary ........................................ 149
Subjects ....................................... 150
Design ..................................... 151
Procedures ................................. 151
Data Analysis ............................... 152
Findings .................................... 154
   Description of Subjects on Study Variables ......................... 154
Hypotheses ................................... 155
Research Questions .......................... 155
Implications .................................. 157
Recommendations for Further Research ............................... 160

LIST OF REFERENCES .................................................. 163

APPENDICES .........................................................

A. Instruments ......................................... 172
   Background Information Questionnaire ...................... 173
   Conceptual Systems Test ................................. 188
   Observer Rating Scales ................................. 193

B. Human Subjects Review Form ....................... 210

C. Samples of Essays Written by Student Teachers ......... 212
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Demographic Data by Location and Combined</td>
<td>93</td>
</tr>
<tr>
<td>2.</td>
<td>Chi-Square of Student Status by Location</td>
<td>94</td>
</tr>
<tr>
<td>3.</td>
<td>Chi-Square of Major by Location</td>
<td>95</td>
</tr>
<tr>
<td>4.</td>
<td>Means and Standard Deviations of CST Factors by Location and Combined</td>
<td>97</td>
</tr>
<tr>
<td>5.</td>
<td>Frequencies of Concrete and Abstract Systems Assignment by Location and</td>
<td>98</td>
</tr>
<tr>
<td></td>
<td>Combined</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Means and Standard Deviations of Teaching Behaviors by Location and</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>Combined</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>t-tests of the Means of Need to Help People and Interpersonal Aggression by</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Location</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>t-tests of the Means of Clarity and Cognitive Demand by Location</td>
<td>101</td>
</tr>
<tr>
<td>9.</td>
<td>Means and Standard Deviations of Individualization Ratings by Two Levels</td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>of Conceptual System</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Means and Standard Deviations of Individualization Ratings by Three Levels</td>
<td>107</td>
</tr>
<tr>
<td></td>
<td>of Conceptual System</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Means and Standard Deviations of Variety Ratings by Two Levels of</td>
<td>108</td>
</tr>
<tr>
<td></td>
<td>Conceptual System</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Means and Standard Deviations of Variety Ratings by Three Levels of</td>
<td>109</td>
</tr>
<tr>
<td></td>
<td>Conceptual System</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Means and Standard Deviations of Freedom Ratings by Two Levels of</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>Conceptual System</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Means and Standard Deviations of Freedom Ratings by Three Levels of</td>
<td>111</td>
</tr>
<tr>
<td></td>
<td>Conceptual System</td>
<td></td>
</tr>
<tr>
<td>Table</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>15. Correlation Matrix for the Six CST Factor Scores</td>
<td>116</td>
<td></td>
</tr>
<tr>
<td>16. Correlation Matrix for the Nine ORS Teaching Dimensions</td>
<td>118</td>
<td></td>
</tr>
<tr>
<td>17. Correlation Matrix: CST Factor Scores and ORS Teaching Dimensions</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>18. Eigenvalues and Percent of Variance Explained From Initial Factor Solution</td>
<td>122</td>
<td></td>
</tr>
<tr>
<td>19. Factor Structure (Loadings) Matrix for Initial Factor Solution</td>
<td>123</td>
<td></td>
</tr>
<tr>
<td>20. Factor Structure (Loadings) Matrix for Varimax Rotated Factor Solution</td>
<td>124</td>
<td></td>
</tr>
<tr>
<td>22. Analysis of Variance of Cognitive Demand Ratings by Level of Conceptual System</td>
<td>127</td>
<td></td>
</tr>
<tr>
<td>Figure</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>1.</td>
<td>Dunkin and Biddle's Model for Studying Classroom Teaching</td>
<td>21</td>
</tr>
<tr>
<td>2.</td>
<td>Matrix of Teaching Factors</td>
<td>131</td>
</tr>
<tr>
<td>3.</td>
<td>Relationships Between Presage and Process Variables</td>
<td>133</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

Background of the Problem

The influence of primary caregivers, whether parents, other relatives, or non-relatives, on young children is well documented (Katz, 1977; Travers, Goodson, Singer, Connell & Weiss, 1976; Spodek, 1972; and Weikart, 1972). With increasing numbers of dual-career families and single-parent families, more children under the age of six are and will be cared for and educated in group settings. For many of these children, the teachers in these settings will become their primary caregivers and educators during the time away from home and parents.

The proportion of children enrolled in group care doubled between 1965 and 1977 and is expected to continue to increase in the next decade. Hofferth (1979) estimated that by 1990, 10.4 million children will have mothers who work outside the home. Consequently, a pressing issue in the decade of the 80's is the training and selection of individuals who can provide a quality environment conducive to maximizing the developmental potential of young children.

Numerous studies have been conducted to identify the necessary traits and behaviors of effective teachers. The majority of these studies have been focused on teachers of
children in elementary and secondary classrooms. In 1971, Rosenshine and Furst generated a list of teaching variables that seemed to be correlated with student achievement. They are clarity, variability, enthusiasm, task-oriented and/or businesslike, lack of criticism, teacher indirectness, student opportunity to learn criterion material, use of structuring comments, and multiple levels of questions or cognitive discourse. Evans (1975) suggested that effective teachers at all educational levels are those who are high in enthusiasm, skillful in communicating, skillful in adapting objectives and methods to the children's needs, motivating, flexible, empathic, nurturant, and have a secure self-image.

Research focused on preschool teachers has been minimal (Gordon & Jester, 1973) and, for the most part, has been designed to study curriculum differences rather than teacher differences (Good, Biddle, & Brophy, 1975). Researchers have consistently reported difficulty with efforts to differentiate the effects of particular curriculum models from the effects of the teaching behaviors within the models (Miller, 1972; Soar & Soar, 1972; Stallings, 1976).

Results of classic studies can be cited which indicate that teacher characteristics and behaviors are influential upon child behavior and performance. Thompson's (1944) findings indicated that children in classrooms in which the teacher was warm, helpful, and an active participant were more constructive, more ascendant, less destructive, and had
higher levels of participation than those in classrooms in which the teacher gave little guidance. Bandura and Huston (1961) found that nursery school children who experienced a warm and interacting adult model did more imitating of that model than did children who experienced a cold relationship with a model.

The search for the effective teacher of young children must be continued. Although the question of preschool teacher effectiveness is one to which many have intuitive answers, the need is to establish more empirical and scientifically-based answers. Program administrators are concerned about effectiveness not only for reasons of hiring, firing, tenuring, promoting, and training their teachers but also for the gains shown by the children in their schools. Parents seek answers about good teaching because they are concerned about the intellectual achievement and the social-emotional development of their children. Teacher educators must screen and train pre-service teachers and, therefore, must have functional information in order to develop curricula and practicum experiences that will develop effective teachers. Teachers themselves are concerned with their own effectiveness and self-improvement. Most importantly, the children who are the students in question are affected by the quality of their teachers in the amount of challenge, satisfaction, and learning that they gain from their educational experience.
Conceptual Framework

The present study was designed to continue the investigation of characteristics of effective preschool teachers. The conceptual framework for this study comes from Dunkin and Biddle's (1974) model of what occurs in classroom teaching. In this framework groups of variables are presumed to work together toward the outcomes or products of teaching, or in other words, what the children actually learn. Four classes of variables are described. The presage variables are those that the individual teacher brings to the classroom and include family background, teacher training experiences, and personality factors. The context variables are those that make up the environment of teaching and include physical characteristics of the classroom, school, and community, school philosophy, and characteristics of the children in the classroom. The third class of variables, the process variables, are the actual behaviors that occur in the classroom setting—those of the teacher and of the children. The product variables are the changes, whether short-term or long-term, that occur in the children as a result of being in a particular classroom. The focus in this study is the examination of the presage-process segment of the model through determining teacher conceptual systems and their relationship to teaching behaviors in the classroom.
Theoretical Base

Presage Variables

The presage variables of interest in the study are the conceptual systems of the teachers. The theoretical perspective relevant to conceptual systems is the personality theory of Harvey, Hunt, and Schroder (1961). They have theorized that individuals' conceptual systems determine the means by which they interact with the world. Implied in the theory is the existence of internal cognitive structures which mediate the person's encounters with the environment (Bieri, 1966). Characterized generically by a dimension of abstractness-concreteness, conceptual systems vary from individual to individual. Four systems, ordered in complexity from most concrete to most abstract, have been described (Harvey, 1966). System I individuals, the most concrete, are those who show "high absolutism and closedness of beliefs" (p. 44). The persons are highly evaluative, dependent upon authority figures, conventional, and generally authoritative when in a power position. System II persons lack trust in authority, show inconsistent behavior, and are rebellious, highly autonomous, and lacking in religious beliefs. System III, the next to the highest in abstractness, includes individuals who are manipulative and dependent upon others but at the same time exhibit more autonomy in internal standards than System I persons and more social astuteness than System II individuals. System IV, the most abstract, is composed of individuals who are more
flexible, adaptive, creative, highly differentiated and integrated, and have higher perceptions of self-worth than persons in the other three systems.

The theory further hypothesizes that conceptual systems are the result of a developmental process that begins at an undifferentiated state and reaches optimally to a highly differentiated and integrated organization (Harvey, 1966). The development of the systems are related at least in part to the early training experiences of the individual. Harvey et al. (1961) proposed theoretical parenting styles that contribute to the level of conceptual functioning of adults. Persons who have been judged to be functioning in System I are those whose parents were authoritarian and restrictive in choices given to their children. Those in System II are products of inconsistent, laissezfaire child-rearing. System III adults are those who were over-protected and indulged by their parents, and System IV adults were reared by parents who valued diversity, individual decision-making processes, and the formation of inner standards.

The conceptual system of an individual influences the behavior of the person. A person with a more concrete conceptual style behaves in less flexible, less diversified ways, while a person at a more abstract level shows more adaptability, creativity, and flexibility (Harvey, 1966).

It may be, then, that teachers of young children who are judged to be effective are those adults who are more abstract in their conceptual style and are products of a particular
type of child-rearing. Hypothetically, a more abstract level of functioning would enable the teacher to relate to a variety of student needs and characteristics. Teachers who function at a more concrete level would be less flexible in responding to individual differences and needs in their students.

**Process Variables**

The selection of the process variables, the teaching behaviors, for this investigation was based upon earlier research on teacher effectiveness (McDaniel, 1974). Behaviors indicating warmth, enthusiasm, variety, individualization, on-task activity, cognitive demand, clarity, feedback, and freedom have been found in numerous studies to correlate with student achievement (Rosenshine & Furst, 1971; Rosenshine, 1975). Teachers who have these behaviors in their teaching styles are considered to be more effective in their teaching than those who do not.

Since this investigation did not examine the process-product segment of Dunkin and Biddle's (1974) model, the decision was made to focus on behavior variables that already have been found to be important to child learning.

**Purpose in the Study**

The purpose in this investigation was to search for explanations of the teaching behaviors of student teachers with preschool children. More explicitly, the purpose was two-fold: 1) to determine the relationships between the conceptual systems of the student teachers and their teaching
behaviors with children enrolled in laboratory preschools and 2) to describe the family background of the student teachers in order to generate a theory of their early family experiences and to develop new research questions about those who choose to become teachers.

To fulfill the first purpose, levels of conceptual systems and factor scores obtained from a measure of conceptual systems served as the predictor variables, and ratings on nine dimensions of teaching behavior were the criterion variables. To fulfill the second purpose, essays were written by the student teachers about their family life. The study was based in personality theory within a conceptual framework of teaching. Behaviors of the teachers selected for observation were those reported in earlier research to be related to effective teaching, and observations were made in naturalistic settings.

**Hypotheses**

From a review of the literature on conceptual systems theory, the following hypotheses were formulated:

1. Student teachers with abstract conceptual systems will have significantly higher ratings on the behavior dimension of *individualization* than student teachers with concrete conceptual systems.

2. Student teachers with abstract conceptual systems will have significantly higher ratings on the
behavior dimension of variety than student teachers with concrete conceptual systems.

3. Student teachers with abstract conceptual systems will have significantly higher ratings on the behavior dimension of freedom than student teachers with concrete conceptual systems.

Research Questions

The questions under investigation in this study were:

1. Is the study sample normally distributed:
   A) on each of the factor scores from the Conceptual System Test?
   B) into the two system categories, abstract and concrete, as assigned from their responses on the Conceptual Systems Test? and
   C) on each of the nine dimensions of teaching behavior as rated on the Observer Rating Scales?

2. Are there relationships among the six factor scores obtained by individuals on the Conceptual Systems Test? What is the nature of these relationships?

3. Are there relationships among the nine dimensions of teaching behavior as rated on the Observer Rating Scales? What is the nature of these relationships?

4. Are there relationships between factor scores on the Conceptual Systems Test and the behaviors observed in teachers as rated on the Observer Rating Scales? What is the nature of these relationships?
5. Are there any recurring themes or classifications that can be found in essays written by this sample of student teachers about their families in their childhood years?

6. Can the essays be classified according to parenting styles and discipline, in the childhood homes of student teachers that are similar to those family types outlined by Harvey (1966)?

7. What theory can be articulated regarding the early family life of this sample of student teachers?

**Assumptions**

The following statements are assumptions to be considered and understood in the context of this study:

1. The conceptual system of an individual is directly related to and affects the way in which that person behaves. Therefore, the conceptual systems of student teachers will relate to and influence their teaching behaviors in the classroom.

2. Though conceptual systems are constructs representing internal mechanisms that cannot be directly observed, they can be measured by means of the individual's responses on a paper-and-pencil instrument.

3. The typical behavior of a student teacher can be assessed by observing a sample of the behavior in a
classroom setting that is familiar to the student teacher by a trained, inobtrusive observer.

4. The behaviors observed in student teachers for this study are ones that are definitive of effective teaching at the preschool level and are effective in influencing children's development in a preschool setting.

5. Subjects, when asked to write essays about their early family life memories and experiences with the assurance of anonymity, will respond freely, openly, and honestly.

Definition of Terms

Student teachers are university or college students who are working in classrooms of preschool children under the direct supervision of head teachers in laboratory school settings.

Head teacher refers to the teacher who is responsible for planning and implementing the program for the children and supervising the student teachers and children in the classroom. The head teachers serve as model teachers for the student teachers and are responsible for the evaluation of the student teachers.

Preschool children refers to children between the ages of three to five years.

A laboratory school is one housed in a college or university setting for the purpose of preparing pre-service teachers from various disciplines to working with preschool children. The laboratory settings utilized for this study had classrooms for children in mixed age groupings ranging from three to five years of age.
A conceptual system is defined by Harvey et al. (1961) as being "a schema that provides the basis by which the individual relates to the environmental events he experiences" (pp. 244-245). Six factors have been identified by Harvey and Hoffmeister (Testing Analysis and Development Corporation, 1977) to measure conceptual systems and are defined as:

**Divine Fate Control (DFC).** The conviction that a divine being has, and ought to have, control of a person's life.

**Need for Structure-Order (NSO).** The desire for the various aspects and situations of a person's life to be highly organized and arranged.

**Need to Help People (NHP).** The feeling of satisfaction derived from and the importance attached to doing things for others.

**Need for People (NFP).** The feeling that contact with people is very important and constitutes a primary source of one's own satisfaction.

**Interpersonal Aggression (IA).** The feeling that a person will, or is likely to, express hostility toward others when they do something the person doesn't like.

**General Pessimism (GP).** The feeling of general distrust of people, especially those in power, such as politicians.

Teaching behaviors refers to selected overt actions of the teachers together with inferred meanings of the actions by the observer. Teaching behaviors of interest in this study are warmth, enthusiasm, clarity, variety, individualization, feedback, cognitive demand, freedom, and on-task activity.
These behaviors are defined by McDaniel (1974) with modifications by Dickerscheid, Briggs and Gnezda (1982) as:

Warmth. The extent to which the teacher is relaxed and comfortable; the degree to which the teacher maintains positive interpersonal relationships with children.

Enthusiasm. The enthusiasm or interest level expressed by the teacher and students during nursery school activities.

Clarity. The clarity of communication, instructions, and expectations conveyed to the children.

Variety. The extent to which the teacher uses a variety of materials and activities.

Individualization. The degree to which the teacher provides children with different levels of work that are suited to their particular needs, interests, and abilities, and the amount of individual assistance provided.

Feedback. The extent of communication to the children of information about the adequacy, acceptability, completeness or correctness of his/her response.

Cognitive Demand. The level of intellectual activity that the teacher expects from the children.

Freedom. The degree to which the teacher provides arrangements which facilitate independence and individual freedom.
On-Task Activity. The amount of child activity that is directed toward the accomplishment of instructional objectives.

Limitation of Study

This investigation is an analysis of data collected in two laboratory school settings with play-based philosophies. Any generalizations to be made about teaching behaviors should be limited to contexts with similar programs and philosophies.

Summary of Study

The purpose in the study was to investigate relationships between conceptual systems of student teachers and their teaching behaviors in preschool settings and to study their family backgrounds. One-hundred-twelve student teachers enrolled in practicum courses at two college/university settings served as subjects in the study. Both practicums included student teaching in laboratory preschools with similar play-based philosophies and similar staffing arrangements.

The Background Information Questionnaire and the Conceptual Systems Test were administered to the subjects early in the practicum to obtain demographic data, family background information, essays on family lives, and levels of conceptual functioning. The Observer Rating Scales were used by trained observers at each location toward the end of the practicum to rate the student teachers on the nine teaching behavior dimensions of warmth, enthusiasm, clarity,
variety, individualization, feedback, cognitive demand, freedom, and on-task activity. The study had both quantitative and qualitative components. A correlational design was employed to determine the relationships. The constant comparative method was used to analyze the qualitative data.
CHAPTER II
REVIEW OF LITERATURE

Reviewed in this chapter is the literature that is relevant to the present investigation. An overview of research in teaching is presented first. In the second section, Dunkin and Biddle's (1974) model of classroom teaching, which serves as the conceptual framework for the study, is outlined. The research on each of the teaching behaviors investigated in this study is presented in the third section. In the fourth section is presented the conceptual systems theory and related research. The research on family backgrounds as related to conceptual systems and to teaching is discussed in the final section.

Overview of Research on Teaching

The study of teaching is not new. The scientific movement has been an integral part of education in the United States throughout the twentieth century (Clifford, 1973). The questions of what makes a good teacher and what teaching methods seem to be most effective have been asked time and time again by educational researchers.

Research on teaching in early childhood classrooms has been a part of this history. Studies dating back several
decades were designed to determine relationships between type of teacher nurturance and child dependency (Hartup, 1958), teacher nurturance and concept formation and memory in children (Rosenblith, 1959), child identification with adult models (Bandura & Huston, 1961), dominative-integrative teacher behavior and child resistance (Anderson, 1937), and teacher warmth and guidance and child behavior (Thompson, 1944).

As Good, Biddle, and Brophy (1975) stated, teachers do make a difference, a fact that has been documented in early childhood education by several research inquiries (Beller, 1973; Brophy & Evertson, 1976; Kounin, 1970; Stallings, 1976). However, the amount of variance in student learning that can be attributed to teaching behaviors and the direct relationships between certain teacher traits and teaching behaviors have not been clearly determined. Further, less is known about teaching preschool children than school-aged children. The task at hand is to refine research inquiries so that more definite answers to what makes teachers effective at both levels can be suggested.

An historical overview of problems associated with research on teaching in general is best accomplished by summarizing reviews of the research by Getzels and Jackson (1963), Sears and Dowley (1963), Biddle (1964), and Dunkin and Biddle (1974). Getzels and Jackson (1963) and Sears and Dowley (1963) agreed that the proliferation of research prior
to the sixties was seriously lacking in a theoretical base. As Getzels and Jackson noted, research has been conducted in a "theoretical vacuum." Instead of basing hypotheses on theoretical premises, most researchers have "tried out" or "sought ad hoc solutions" to problems of effectiveness of education. Sears and Dowley additionally criticized researchers for being too creative and thus not replicating earlier work and for avoiding longitudinal study.

Biddle (1964), after reviewing and summarizing teacher effectiveness research, cited two reasons for the lack of conclusive information. First, he blamed disagreement about desired teaching outcomes and conflicting operational definitions of behaviors and criteria of effectiveness. The language surrounding the effectiveness question had not yet been agreed upon by those conducting the inquiries. Second, he acknowledged the complexity of the question being asked. A teacher works within a given context that imposes conditions and constraints varying from situation to situation. Additionally, differences in child characteristics may affect teaching outcomes, such as age, ability, and socioeconomic status. Envisioning that future research called for two classes of variables with teacher characteristics and behaviors being the independent variables and teaching outcomes being the dependent variables, Biddle devised a system of seven categories into which these variables could be placed. These categories include formative experiences of
the teacher, teacher properties, teacher behaviors, immediate
effects upon the child, and long-range effects upon the child,
as main sequence variables, and classroom situations and the
school and community contexts as contextual variables.

Ten years after Biddle's criticisms of the research and
categorization of teaching variables, Dunkin and Biddle (1974)
continued to criticize the lack of theoretical base in teacher
effectiveness studies. In addition, they found fault with
the failure to use observation of actual teaching as a way
of measuring teacher behaviors, the inadequate definition of
criteria of effectiveness, and the lack of concern for the
contextual elements. Though they felt that research of the
two decades prior had begun to shed some light on the teacher
effectiveness problem, the definition of the relationships
between teacher characteristics and behavior and pupil
learning was still tentative.

Brophy and Evertson (1976) discussed lack of agreement
upon criteria for effective teaching. They noted that most
studies to that point were not concerned about effective
teaching behaviors based upon observation but instead focused
on opinions of what is effective teaching. Those studies
that were searching for behaviors characteristic of "master"
teachers used ratings by principals or others on criteria
that were global and vaguely defined. The results were judged
by Brophy and Everston to be unreliable, biased, and often
intuitive. They called for a systematic inquiry based upon
observation of teacher behaviors and measurement of student outcomes in naturalistic teaching situations.

In response to these criticisms of earlier teaching research, the present investigation is based in theory within a conceptual framework of a classroom teaching. Ratings of student teacher behaviors with preschool children were made by systematic observations of teaching in naturalistic settings. The behaviors determined to be effective were those found in earlier research to be related positively to child learning and development.

**Model of Classroom Teaching**

The underlying conceptual framework for the present investigation is Dunkin and Biddle's (1974) model of the dynamics of the classroom. Figure 1 illustrates the four classes of variables and how they interact toward the outcomes or the products of teaching. The model, according to Dunkin and Biddle, is based upon empirical evidence concerning relationships found in the teaching process.

The model is divided into three "regions." The presage variables and the context variables at the left represent those that have at least some direct influence on what occurs in the classroom. A causal relationship is inferred by this model with the presage and context variables serving as independent variables and the classroom behaviors as dependent variables. The authors caution, however, that the direction of influence at times may be reversed and that
Figure 1
Dunkin and Biddle's Model for Studying Classroom Teaching
research should be focused on the establishment of relationships or covariance between variables. The process variables, or what actually happens in the classroom make up the second region. Again, a causal relationship is hypothesized between this region and the third region, the product variables. Experimental research is called for, however, before the directions of the arrows between the classes of variables can be considered as more than tentative.

The variables are classified into twelve categories which have been reduced into the four larger classes of the presage, the context, the process, and the product variables. Presage variables are those that the teacher brings to the classroom. Context variables are a combination of pupil characteristics and the context of the school, community, and classroom. Process variables are the behaviors of the teacher and the students within the classroom itself as well as changes in the students. And product variables are the long-term as well as short-term effects of the classroom encounters on the students.

A look at each class of variables more closely gives one a clearer view of just how difficult the study of teaching actually is. With so many areas of variability to consider when attempting to determine what is best for children in education, one realizes that much systematic inquiry is necessary before we can begin to have firm answers to the effectiveness question.
The presage variables class has three categories, the teacher formative experiences, the teacher training experiences, and the teacher properties. Formative experiences are those that occur because of the teacher's demographic characteristics such as sex, socioeconomic status, age, nationality, race, and ordinal position in the family as well as the experiences in the family, early schooling, and early socialization with others. These variables are generally considered to be those that occur prior to teaching, though it seems obvious that present experiences and demographic characteristics might impact on teaching as well. Teacher training experiences are those having to do with the college or university attended, the prevailing philosophy of the teacher education program, the specially arranged teaching experiences as a student, the characteristics and attitudes of the professors, and in-service training after teaching has begun. Both of these categories of variables, the formative experiences and the teacher training experiences, have impact upon teacher properties of the teacher at present, which is the third category. These include personality characteristics, motivations, abilities, and aptitudes, which are all less observable than variables in the other two classes.

The context variables are composed of four categories, the pupil formative experiences, the pupil properties, the school and community contexts, and the classroom context. Pupil experiences and pupil properties are much the same as
teacher formative experiences and teacher properties in that demographic characteristics and prior experiences of the children are influential upon their current characteristics such as abilities, knowledge, and personality. School and Community contexts form a part of the environment in which the teaching and learning occurs. Socioeconomic status of the community, racial composition, politics, size of school, prevailing philosophy of education, and bussing as well as other contextual elements are all important in determining the overall environment. The classroom context is also a factor to consider. Pupil-teacher ratio, number of students, physical size of the classroom, arrangement of furniture, numbers and types of books and other curriculum materials, lighting, temperature, floor treatment, wall treatment, and displays are variables which will have impact on the learning process.

Process variables are what the teacher and students actually do in the classroom. Dunkin and Biddle suggest that these variables are observable behaviors. One category is teacher behavior, which is assumed in part to be a function of the teacher's presage variables, but which is also due in part to the interaction between the teacher and the children in the classroom. Not only does the teacher influence the behavior of the children, but the children's behavior induces teacher behavior as well. The children's behavior in the classroom can be ascribed to their "presage variables" as
well as the teacher's behavior. The third category, observable changes in pupil behavior results from the interaction of teacher behavior and child behavior categories. How each child changes is probably a result of what the teacher does and what each child in the classroom does, as well as the individual activity of the child himself.

The product variables are the outcomes of teaching. Dunkin and Biddle note that though these are usually conceptualized in terms of positive growth, the negative outcomes such as dislike for school or personality disturbances should be considered as well. The category of immediate pupil growth includes changes in scores on standardized tests, teacher-made tests, and subject matter grades. The category of long-term pupil effects contains variables that deal with the ultimate goals of education such as citizenship, acquisition of skills and motivation for entering the world of work, problem solving abilities, and a concern for the betterment of others. Research on relationships between process variables and these long term products of teaching is difficult and presently lacking. Most process-product research, therefore, measures the short-term products of teaching.

The variables under examination for this particular study can be classified as presage variables and process variables in this model. Specifically, the conceptual systems of the subjects (teacher properties) together with their family life experiences (teacher formative experiences) are the presage
variables of interest. The teaching behaviors of the subjects as observed in the classroom are the process variables. The relationships between these presage conditions and the teaching processes have been examined. Within this model of classroom life, relevant literature for each variable has been reviewed.

Teaching Behaviors

The teaching behaviors under investigation are those that have been found to be important for effective teaching (McDaniel, 1974). Relevant literature on each teaching variable—warmth, enthusiasm, clarity, individualization, variety, freedom, cognitive demand, feedback, and on-task activity is reviewed in this section. Preceding the review of research on the process variables, a "state of the art" on process-product research in general and for early childhood education specifically is presented.

State of the Art: Process-Product Research

Though there have been thousands of studies on teaching behaviors in this century, no agreement has been reached as to how a "good" teacher teaches nor on how to define teacher effectiveness. Hamachek (1975) bemoaned the fact that many still contend, in his words, "we cannot tell the good guys from the bad guys" (p. 239). His point was "we do know what the competent--or effective, or good, or whatever you care to call him--teacher is. . ." (p. 239). He reviewed research
and summarized by saying that the good teachers are "human," fair, empathic, democratic, open, and spontaneous, and have a sense of humor, among other qualities, while ineffective teachers lack a sense of humor, show impatience, use sarcastic comments, are authoritarian, and are less sensitive to students. His conclusions were based on studies using student opinion, student attitudes, and student achievement as criterion measures of effectiveness.

Conclusions like these make intuitive sense. Most who have contact with teachers, whether in-service or pre-service, probably would agree that these qualities are important. However, those critical of this and similar lists of qualities (Dunkin & Biddle, 1974; Rosenshine & Furst, 1973) argue that these attributes of good teaching are global and difficult to precisely and reliably measure. Efforts have been made to break down these global or high inference qualities to more objective, operationally defined, and observable units of behavior that require low levels of inference on the part of the evaluator (Rosenshine & Furst, 1973).

Most studies on teaching process have occurred with teachers of elementary and secondary students, while research on teaching behavior of preschool teachers is more limited. As Good, Biddle, and Brophy (1975) stated, research at the preschool level has focused more strongly on curriculum evaluation rather than analysis of variation in teaching behaviors. Gordon and Jester (1973) indicated that little
preschool teaching research had focused on the process-product segment of classroom teaching.

Brophy and Evertson (1976) concluded after process-product a study of second and third grade teachers:

"Effective teaching is not simply a matter of implementing a small number of 'basic' teaching skills. Instead, effective teaching requires the ability to implement a very large number of diagnostic, instructional, managerial, and therapeutic skills, tailoring behavior in specific contexts and situations to the specific needs of the moment" (p. 139).

They suggested that teachers of young children (third grade and below) may need to teach differently than teachers of older children in order to be effective. While indirect teaching, verbal teaching, faster-paced work, group work, and independent choices and assignments seem to be effective for older learners, Brophy & Evertson found, instead, that teacher-structured presentation of new material, opportunities for practice of new skills, and immediate corrective feedback were most effective with younger children. It must be emphasized, however, the product measures used in defining effectiveness in their study were related only to learning gains in standardized achievement tests of language arts and mathematics and not to other academic or noncognitive areas of development in the children.

The Child Development Associate (CDA) credential has as its basis six teaching competency areas that were judged by its developers to be those necessary for teachers working
with children in early childhood classrooms (Klein, 1973). The competency areas are: 1) setting up and maintaining a safe and healthy learning environment; 2) advancing physical and intellectual competence; 3) building positive self-concept and individual strength; 4) organizing and sustaining the positive functioning of children and adults in a group; 5) bringing about optimal coordination of home and center child-rearing practices and expectations; and 6) carrying out supplementary responsibilities related to the children's programs. CDA candidates are observed in the early childhood classroom and are assessed according to the achievement of the competency areas. However, the six competency areas seem to be goals for teaching instead of specific teacher behaviors and qualities necessary for effective teaching.

Since so little is known about specific preschool teaching behaviors that are effective in meeting the goals of early childhood education, including academic, cognitive, and social-emotional development, attention must be placed on teaching processes that are known to work in elementary classrooms. The Observer Rating Scales, developed by McDaniel and associates (1973), were used in this investigation to rate the behaviors of teaching shown to be effective with school-aged children. The behaviors that are rated on the ORS are warmth, enthusiasm, clarity, individualization, variety, freedom, cognitive demand, feedback, and on-task activity.
Research findings that link these behaviors to child learning and development will be presented in the following section. For each variable, relevant literature on the behavior in preschool teaching will be reviewed if available. If the behavior has not been studied on the preschool teaching level, relevant literature on elementary teaching will be presented.

**Teaching Variables**

**Warmth.** The definition of warmth for the present investigation is:

"The extent to which the teacher is relaxed and comfortable; the degree to which the teacher maintains positive interpersonal relationships with children."

In Appendix A can be found the specific operational definitions for each of the six points along the warmth continuum.

Of all behaviors and characteristics of teachers in early childhood education, warmth is, perhaps, the one suggested most often by text writers and administrators as being of paramount importance in teachers, particularly in programs representing models that emphasize teacher-child relationship, such as the child development model and the verbal cognitive model (Mayer, 1971).

Katz (1977) defined warmth as "the extent to which children experience the adults as friendly, relaxed accepting, affectionate, and positive toward them" (p. 21). She coupled "warmth" with "intensity" and suggested that programs
that have high levels of both in the teacher-child relationships are those that provide optimum environments for the development of the children.

Thompson (1944) reported findings that in the nursery school classroom where the teacher was a warm friend, active participant, and helpful adult, the children were more constructive when faced with possible failure, more ascendant, participated more, showed more leadership, and were less destructive than in the classroom where the teacher made less friendly contacts, assisted only when requested, and intervened only in dangerous situations.

Ryans' (1960) study of the characteristics of effective teachers identified a pattern that included warmth. Pattern X distinguished between teachers who were warm, understanding, and friendly versus aloof, egocentric, and restricted. Those teachers judged to be effective were those on the warmth end of the continuum, while those not as effective were at the aloof end.

Truax and Tatum (1966) found that teacher ability to express warmth along with empathy were important in facilitating positive adjustment of preschool children to school and to their peers. Prescott, Jones, and Kritchevsky (1967) in a study of 50 day care centers observed teacher behavior in several categories including one labeled "encouragement," which included behaviors that were supporting-extending, responsive, routine, and approval-nurturant. They found relationships between the encouragement pattern of behavior
and high levels of interest and involvement by the children.

Connors and Eisenberg (1966) found the dimension of warmth in teachers along with "valuing intellectual growth" as being related to growth in children's vocabulary as measured by the Peabody Picture Vocabulary Test. In this study, teachers and children in summer Head Start programs were subjects.

Beller's (1969) Head Start study placed heavy emphasis on the affective domain of teaching. He found relationships between teacher style, which included closeness to the child, respect for the child's family, and considerations of the rights and individuality of others, and child success on a problem-solving task. Scott (1969) found effective teachers of disadvantaged five-year-olds to show more positive emotional tone than ineffective teachers who tended to show more negative tone.

Aspy (1973) studied a teacher affect variable called "interchangeable responses." The term was borrowed from Rogerian concepts of effective therapist behavior and meant the showing of empathy by summarizing student statements, thereby showing the student that he or she has been understood. Findings indicated that teachers' interchangeable response rate was positively correlated with reading achievement of third graders.

Stallings (1976), in a study of Follow Through programs found smiling and laughing behaviors along with the absence
of harsh or demeaning statements and less punishment by the teacher to be inversely related to absence rates of the children.

There is some evidence that warmth is not necessary or is ineffective in producing student gains. Brophy and Evertson (1976), in a study of teaching in second-and third-grade classrooms reported evidence that warmth may be more effective for children in lower socioeconomic status schools than in higher socioeconomic schools. They expressed the opinion that warmth may be less important for younger than older children, as younger children tend to "more or less automatically" (p. 106) feel affection toward their teacher regardless of teacher affect. This opinion runs counter to the prevailing opinion of early childhood educators and other research evidence that warmth is important in a teacher-child relationship (Evans, 1975).

Findings by Peng and Ashburn (1978), who measured teacher affect ratings of their teachers by fourth-and sixth-graders, also were suggestive of a negative relationship between teacher affect and mathematics and reading achievement. The explanation for these discrepancies may be that both sets of researchers studied only math and language arts achievement gains as products of teaching. When other products, such as self-esteem, social cooperation, and self-discipline are taken into account, warmth on the part of the teacher seems to be important.
Enthusiasm. For this investigation the definition of enthusiasm is:

"The enthusiasm or interest level expressed by the teacher and children during nursery school activities."

The teaching behaviors indicative of each of the six points along the enthusiasm continuum are presented in Appendix A.

Enthusiasm is a teaching variable that has not been studied to any extent in the preschool classroom. Except for ratings on teacher "showmanship," which were positively correlated with learning gains in lower socioeconomic children, Brophy and Evertson (1976) found little evidence that teacher enthusiasm was related to school achievement in their sample. They did state, however, that almost all of the teachers in their sample were both enthusiastic and warm, hence, a distinction could not be made among teachers who varied in these behaviors. They also speculated that a teacher rated highly in enthusiasm might seem "gushy" and inauthentic by their students. It seems obvious that this variable in preschool teaching should be examined more closely for its impact on product variables.

For children at more advanced ages, however, enthusiasm has been shown to be important. Ryans (1960) described a teaching pattern that included characteristics of enthusiasm. Effective teachers were stimulating and imaginative, while ineffective teachers were dull and routine. Rosenshine (1975) and Rosenshine and Furst (1971) cite other studies in which
enthusiasm was correlated with student learning in elementary schools.

**Clarity.** This dimension of teaching behavior is defined on the Observer Rating Scales as:

"The clarity of communication, instructions and expectations conveyed to the children."

Each point on the clarity continuum is described in Appendix A.

Clarity is another dimension that has been documented widely as being a necessary behavior in effective teaching. However, the predominance of research on clarity has been done in the elementary classroom. Rosenshine and Furst (1971) in their review found clarity to be one of the most prominent variables in teaching behaviors related to student growth. Good and Grouws (1977) found clarity behaviors to be effective in achievement in fourth grade mathematics.

For the early childhood classroom, Kounin (1970) found that for misbehaving children in kindergarten, clarity in the message from the teacher about what behavior was not acceptable and what should be done instead by the children was effective in eliciting more conforming behavior. For "audience" children, whether they were misbehaving or were free from deviancy, clarity also produced more conformity to the expectations of the teacher.

Brophy and Evertson (1976) did not find teaching techniques such as clarity or advance organizing behaviors in teachers of second-and third-graders as being crucial. They speculated that these teaching behaviors may be more important with older learners who are functioning at a higher conceptual
level than younger learners who are working at mastery of more fundamental skills. However, it should be noted that the criterion measures for their study were achievement in language arts and mathematics.

Lawton and Hooper (1978), on the other hand, reported differences in children in preschool programs that differed in amounts of teacher structure. Children in an Ausubelian program, which emphasized teaching by the use of advance organizers and more teacher structure (some low inference indicators of clarity) performed better on classification, relations, and conservation tasks than children in a Piagetian program. The children in the Piagetian program, which included small-group learning activities and some teacher structure and teacher-directed activities, did better on these tasks than children in a traditional preschool program with little teacher structure and much child-selected activity.

Therefore, the evidence for clarity is not yet conclusive in the early childhood classroom. Some of this ambiguity may result from differing criterion measures of the desired products of teaching. Definitely, more research is needed to "clarify" the clarity issues.

Variety. For this investigation, variety was defined as:

"The extent to which the teacher uses a variety of materials and activities."

In Appendix A can be found the descriptions of this behavior at each point of the variety continuum.
The teaching dimension of variability of instruction and materials was another found by Rosenshine and Furst (1971) to be related to student outcomes in elementary classrooms. They cited studies that found relationships between variety of materials, variety of activities, variety in verbal discourse, flexibility of procedure, and teacher adaptability, as process variables, and student achievement as product variables.

Beller (1969) found flexibility to be related to Head Start children's success in a problem-solving task. Those teachers who were flexible in classroom arrangement and instruction had children who performed better on a task for which they had to find a hidden object.

Kounin (1970), in his study of kindergarten teachers, concluded that one difference between effective and ineffective classroom managers was in the amount and variety of activities which had been pre-planned and arranged for the children. Effective teachers, those whose classrooms were usually free of disruptive behavior, were those who offered to the children a variety of interesting activities, while those who had discipline problems had less variety in their activities.

Individualization. The Observer Rating Scales definition of individualization is:

"The degree to which the teacher provides children with different levels of work that are suited to their particular needs, interests and abilities, and the amount of individual assistance provided."
The teaching behaviors specific to each of the six points along the individualization continuum are presented in Appendix A.

The construct of individualization has not been studied to any great extent in preschool research. However, a comparison of the models of early childhood programs as conceptualized by Mayer (1971) reveals that programs following the sensory cognitive model, The Montessori Method, may be those with the most individualized approach to early childhood education. In this model children each work independently on sensory, perceptual, and conceptual tasks as they show readiness for them. Learning occurs sequentially with the mastery of one task completed before proceeding to the next task.

The research on this model as compared to others indicates that young children educated in Montessori classrooms are more likely to develop better skills in visual-motor coordination and integration, matching appropriate objects, and visual perception (Chattin-McNichols, 1981), however, these differences may be due more to the program method than the individualization behaviors of the teachers. The Consortium for Longitudinal Studies' (1979) analysis of the effects of Head Start and Follow Through models found no differences in intelligence scores in children who had been in Montessori models as compared to those from other models.

Though individualization seems to be a construct which needs further testing for its impact on child learning, there
is some evidence of its importance. Brophy and Evertson (1976) found that "the teacher must individualize (to be effective), based upon diagnoses and evaluation of students, regardless of the specific curriculum being taught" (p. 128). Kounin's (1970) kindergarten findings were similar in that classrooms were assignments and activities were developmentally appropriate and selected for the needs of individual children were those classrooms that functioned well.

Feedback. For this investigation, feedback was defined as follows:

"The extent of communication to the children of information about the adequacy, acceptability, completeness or correctness of his/her response."

Each of the six continuum points for the dimension of feedback is further defined in Appendix A.

The construct of feedback has been studied in various ways. Rosenshine and Furst (1971) presented evidence that criticism is negatively correlated with student achievement and that the negative relationship becomes stronger with the strength of disapproving behaviors on the teachers part. Mild disapproval, such as telling students that they answered incorrectly or giving academic directions, did not seem to be negatively correlated with student achievement in the studies that they reviewed.

Beller (1973), in reviewing research on program effectiveness in early childhood education, suggested that praise should be focused on elaborating by telling the child what
was right about the response. Only criticism that was intensive in nature appeared to be negatively related to student achievement. Mild criticism was found to sometimes have positive effects on cognitive gains.

Hughes (1973) found that with seventh graders, complete feedback by their teachers as to the adequacy or inadequacy of their responses and the use of praise or reproach by their teachers depending upon the needs of the situation, made better learning gains than those whose teachers made little response to their performances.

Good and Grouws (1977) studied teachers in fourth-grade mathematics classrooms. They found that effective teachers were those that gave process feedback that was immediate, nonevaluative, developmental, and task relevant. The use of praise was negatively related to both achievement and classroom climate.

Katz (1968) studied feedback in Head Start classrooms, observing for teacher behaviors such as praise of performance, analyzing and evaluating performance, and emphasizing process. She reported low frequencies of these behaviors in the teachers that she observed.

Stallings (1976) found that in Follow Through classrooms, higher reading scores in both first and third grade were correlated with teacher feedback in the form of praise for correct responses and guidance if incorrect.
Brophy and Evertson (1976) found that the use of praise was not so important for high achievers, but that the most effective teachers of low achievers used encouragement and praise for motivation. They suggested that when praise is used, it should be given privately, genuinely, and specifically related to the task and to progress that has been made by the student.

These studies document the fact that feedback, when appropriately applied, is related to child growth at all levels. The evidence suggests that teacher feedback should be specific to the task, given for both right and wrong responses and behavior, individually applied, genuine, nonevaluative, and mildly applied in order to be most effective.

**Cognitive demand.** This variable is defined as:

"The level of intellectual activity that the teacher expects from the child."

The operational definitions of each continuum point for cognitive demand are given in Appendix A.

It is on this variable that the largest difference in effective teacher behavior between teacher of older children and younger children exists. At the high end of the continuum, teachers expect evaluative behaviors of their students, which are characteristics of a higher level of thinking than Piaget's (1967) theory of cognitive development describes for preoperational children. According to Piaget, preoperational children are developing mental representation and
new concepts but cannot yet mentally conserve, classify, generalize, or group objects. One might conclude that the behaviors described for points one, two, and possibly three on the continuum would be appropriate levels of cognitive demand for preschool children. Behaviors which indicate higher levels of demand, such as analysis, synthesis, and evaluation would be appropriate for learners at more advanced stages of development but inappropriate for preschool children.

Brophy and Evertson (1976) discussed optimal difficulty levels for children. Their data indicated that child learning was most likely to occur when the material was "relatively easy to assimilate" (p. 63), but must also involve some challenge and even confusion and failure if the child is to make cognitive progress. They found differences by socioeconomic status for optimal difficulty levels. Higher socioeconomic status children learned best when they could answer 70% of their teacher's questions correctly. Lower socioeconomic status children made better gains when they were able to answer 80% correctly. They also found that assignments seen as "too hard" by low socioeconomic status children correlated negatively with learning, while assignments rated as "too easy" by students from higher socioeconomic backgrounds were correlated negatively to their gains. They summarized by saying, "In short, the teacher's ability to question the children at varying cognitive levels simply is not relevant yet" (p. 110).
In another study with young children, Ragosta, Soar, Soar, and Stebbins (1971) found that low level tasks for children such as performing simple skills, giving of information, answering easy questions related to not only growth in acquiring simple, concrete skills but also more abstract and complex skills.

These early childhood studies support the notion stated earlier that optimal levels of cognitive demand for preschool children are the ones at the lower end of the continuum on the Observer Rating Scales.

**Freedom.** The definition of freedom on the Observer Rating Scale is:

"The degree to which the teacher provides arrangements which facilitate independence and individual freedom."

In Appendix A are supplied the individual definitions of the six positions along the freedom dimension.

The dimension of freedom focuses on the amount of teacher control over the activities and the interactions in the classroom. An early study by Appel (1942) showed that non-punitive teaching techniques and consistency in teacher expectations for behavior were more effective than punitive techniques and arbitrariness. Kounin and Gump (1971) also studied punitive and nonpunitive teachers and found that punitive teachers had classrooms with more disruptive behavior and tension than nonpunitive teachers.

Kounin's (1970) later study showed that teacher firmness and consistency were important elements in classrooms which
ran smoothly. Children were less disruptive and more self-directed in these classrooms. He also found that when teachers were "rough," more disruptive behavior erupted in the classrooms.

Katz (1968) found that when teachers were demanding and structuring of children's activities, the children were more likely to develop behaviors that would be counterproductive in later school adjustment.

Brophy and Evertson (1976) found successful teachers had a few, well-explained classroom rules, while the less successful teachers either had no rules and experienced chaos or had too many rules. They found differences by socioeconomic status as to the amount of freedom that was most effective. High SES children were able to assume more responsibility and could tolerate more freedom and self-direction. Conversely, low socioeconomic status children needed more restrictions on their behavior and more structure in their work.

In summary, research on the construct of freedom seems to indicate that there is a balance between teacher control and child control, and that the balance may vary from child to child. In general, a nonpunitive, but firm approach with a few well-defined rules seems to be the best combination of teacher behaviors that lead to the independence and self-directed behavior of children.
On-task activity. This teaching behavior is defined as:

"The amount of child activity that is directed toward the accomplishment of instructional objectives."

In Appendix A are given the operational definitions of the on-task activity dimension at each of the six continuum points.

Rosenshine and Furst (1971) labeled this variable "task-oriented and/or business like behaviors." They concluded, after analyzing studies in which this variable was examined for learning outcomes, that "ratings on task orientation may be a significant correlate of student achievement because 'you get what you teach for'" (p. 47). Ryans (1960) found a pattern that distinguished effective from ineffective teachers as being businesslike, responsible, steady, systematic, and poised vs. evading, erratic, disorganized, and excitable. His findings indicated that the teachers showing positive, businesslike behaviors were judged to be more successful in teaching than those with the opposite characteristics.

Brophy and Evertson (1976) found that student involvement in lessons and activities coupled with matching of activities with student abilities (individualization) was the most important influence on teaching success.

Kounin (1970) found a similar phenomenon. The successful classroom managers were able to keep their children actively
engaged in activities so that a minimum of disruptive behavior emerged and had to be dealt with.

Scott (1969) found more effective teachers (as rated by their supervisors) of five-year-old disadvantaged children to have more teaching episodes relating to the achievement of their goals than the ineffective teachers.

Summary

To summarize the literature on the variables selected as teaching process variables for this investigation, evidence exists documenting effectiveness of each variable at either the preschool or school age level of teaching. Evidence for warmth is most abundant in the preschool literature. Enthusiasm, while not researched to any great extent in the preschool classroom, is one that seems to go along with warmth, and is well documented as being effective with older children. Similarly, clarity is effective in producing older children's learning gains, and there is some evidence that it is a necessary teaching behavior for younger children. Variety and individualization were both found in several inquiries to be of importance in the early childhood classroom. Feedback is effective when specific to the task, mild, whether approving or disapproving, individually applied, and nonevaluative. Cognitive demand behaviors, while deemed important for older learners, seem to be best with younger children when at lower, more concrete levels. On-task activity was
one found important for both early childhood classrooms and those of older children as being related to positive academic gains and classroom management. Freedom behaviors that are focused upon the optimal balance between teacher-direction and child-direction seem to be the most effective.

**Conceptual Systems**

Harvey, Hunt, and Schroder (1961) presented a theory that hypothesized the existence of internal cognitive constructs, termed conceptual systems, that are used by the individual in dealing with environmental stimuli. Their theory is a structural theory in which they assumed the existence of internal structures within the individual which are not directly observable but can be inferred through observations and measurements of the outward behavior of the individual. The cognitive structure, the conceptual system, is defined as "a schema that provides the basis by which the individual relates to the environmental events he experiences" (Harvey et al., 1961, pp. 244-245).

The theory can be classified as structural in other ways. The authors theorized the developmental process of the conceptual system as occurring in stages, that progress from an earlier phase in which the system is largely undifferentiated and unintegrated to the highest stage of maximum differentiation and integration.

Conceptual systems theory can be compared to another structural theory, that of Lewin (1954) who also presented
the process of differentiation as being a major phenomenon of development. Lewin's mathematical formula, \( B = f(P, E) \) or behavior is a function of both the person and the environment, can be related to Harvey et al.'s (1961) theory. To state this formula in conceptual systems theory terms, a person's behavior results from an interaction of the person's internal cognitive system and the stimuli in the environment. To illustrate the differentiation and integration process hypothesized by Harvey et al. (1961) each of the four conceptual systems will be examined in order from the lowest to the highest in abstractness.

System I, unilateral dependence, the lowest level, is characterized by highly concrete thinking. The individual in this system thinks in terms of black and white or good and bad with few degrees of differentiation between those opposing categories. The behavior and attitudes of the individual are described as being rigid and highly resistant to change. This can be functional in situations which call for conformity but may not be adaptive in situations that demand flexibility and creative problem solving. The individual functioning in System I shows unquestioning adherence to demands of those in authority and when in positions of authority, expects conforming behavior from those in his or her charge. The System I individual also places high credence in divine power, the supernatural, and/or superstition.

The System II individual is theoretically less concrete than the System I individual. System II thinking, negative
independence, is marked by cynicism, skepticism, and pessimism. Those in authority are not trusted by the System II person nor are people in general. Behavior is often nonconforming and belligerent. The individual in this system is less abstract than those in higher systems in that behaviors are rigid, opinions are less open to change, and categories are easily drawn. However, individuals in System II are less likely than those in System I to express belief in divine power and are more likely than individuals in any of the other systems to show inconsistency in behavior.

System III functioning, conditional dependence and mutuality, includes a motivation for establishing dependencies upon others. Adherence to norms and expectations of others is theoretically quite important to persons in this system. System III is next to the highest in abstractness. The individual has more internal standards than one in System I and is more optimistic and more conforming than one in System II but is less abstract and less independent than a System IV individual. A person in System III manipulates others to do things for him or her to avoid a feeling of helplessness.

System IV individuals are the most abstract and represent the highest level of conceptual system development. Their behavior, theoretically, is most flexible, adaptive, and creative of individuals in all the systems. A System IV representative can assess incoming stimuli and generate various solutions to problems. Concepts are relative and
tentative and are rarely expressed in simple categories of black and white but instead with numerous categories. Of all individuals, System IV people are best equipped cognitively to meet the unknown, as they are best at problem solving. Their conceptual systems and behavior are highly differentiated and integrated. This system is considered (Harvey et al., 1961; Harvey, 1966) to be the optimal one, especially for persons who must deal with a complex and unpredictable environment. Because of their flexibility, however, abstract persons can function adequately in concrete environments.

Several instruments have been developed by the originators of the theory to categorize individuals into the four systems. The This I Believe (TIB) instrument is a series of 12 open-ended sentence stems to which the subject is asked to respond with an ending. The opening phrase is "This I believe about ____," and the blank is filled in by friendship, the American way of life, guilt, marriage, myself, religion, sin, majority opinion, people, compromise, the future, and the past. After use of the TIB in research, Harvey (1966) concluded that it would effectively distinguish individuals in the four categories.

The Paragraph Completion Test is similar in concept to the TIB. Subjects are asked to write short paragraphs in response to six opening sentence stems. The openings are: "When I am in doubt ...," "When I am criticized ...," "Rules ...," "Confusion ...," "Parents ...," and "When others criticize me, it usually means ... ."
The Conceptual Systems Test, 1967, with revisions in 1971, is a more objective means of measuring conceptual systems. The 1967 version has 67 statements of belief for which the subject rated agreement with each belief on a 6-point scale. The 1971 Revision is shorter with 48 statements to be rated for agreement on a 5-point scale.

These instruments were designed to distinguish subjects by conceptual systems. Most studies of the theory have been conducted on undergraduate and graduate student populations, and teachers or principals in education systems. An uneven distribution into the systems has been consistently found. Hoffmeister (1982) summarized by saying that only about 2 or 3% of the population are in the highest category.

Wiederanders and Harvey (1980) reported 70% of a sample of college students to be in System I and III. Williams (1980) found 35% of an undergraduate home economics education sample to be in System I, none in System II, 53% in System III, and 12% in System IV. In summarizing studies of teachers, principals, and college students, Harvey (1970) reported liberal arts students as being measured at 35% in System I, 15% in System II, 20% in System III, and 7% in System IV. Education majors varied from this with 45% being in I, 5% in II, 25% in III, and 5% in IV. For practicing teachers, superintendents and principals, the percentages varied from the above with 55% teachers, 75% principals, and 90% superintendents functioning in System I. System II was not
represented in these populations. Fifteen percent of teachers were in System III and 4% in System IV. Of the principals and superintendents, none were reported in Systems III or IV. It must be noted, however, that some persons, because of inconsistency of response, cannot be classified clearly into one of the systems, or show evidence of several systems in their responses (Hoffmeister, 1982).

These figures suggest that most individuals never reach System IV, the most abstract and highly integrated conceptual system level. There appears to be a difference between college students who choose liberal arts majors and those who choose education. Furthermore, teachers and school administrators become integrated into the schools, their levels of conceptual functioning appears to regress to more concrete systems.

The conceptual systems theory has been tested for its validity in predicting behavior. Wolfe (1963) found support for the conceptual systems theory. Nine-hundred-ten subjects ranging in age from 10 to 21 were measured for abstractness-concreteness and were given intelligence tests, role taking tasks, and impression formation tasks. Significant differences were found between low conceptual systems groups and high ones with regard to age and intelligence. The System IV's were higher than others on age and intelligence. When age and intelligence were held constant, findings indicated that conceptual level is related to impression formation and role-taking ability. That is, the more abstract
the individual, the more he or she is able to feel and think as others, to assume the roles of others, and to be more cautious in forming early impressions.

Ware and Harvey (1967) in a similar study of undergraduate students in introductory psychology, used the TIB to assess concreteness and abstractness of the subjects. Subjects at Systems I and IV were selected for further study and were asked to make generalizations about the positive and negative attributes of target persons based upon induced impressions that were consistently positive, consistently negative or inconsistent. When the attributes were consistently positive or negative, the concrete subjects generalized about the target person further than the abstract subjects. However, when the attributes were inconsistent, the abstract subjects were able to make further generalizations. In both types of situations, however, concrete subjects were more definite about their generalized impressions. Ware and Harvey concluded that the more abstract person seeks more information, generalizes less, and holds generalized impressions more tentatively than the concrete individual.

Harvey and Ware (1967) induced impressions of a target person based on that person's past behavior. They then presented descriptions of the person's present behavior that did not fit with the induced impressions, causing a state of cognitive dissonance. Concrete and abstract subjects were asked to write explanations of the consistency or
inconsistency noted. Findings were that concrete subjects, more than abstract subjects, noted inconsistencies, attributed them to changes in the target persons, gave fewer explanations, explanations given were poorly integrated, used stereotypic categories for the target persons such as "bum," or "solid citizen," were less tentative in their conclusions, and were less able to integrate both positive and negative characteristics into one individual. Harvey and Ware concluded that concrete individuals have a low tolerance for cognitive dissonance and tend to move toward quick resolution of the dissonance.

Halverson (1970) compared abstract and concrete subjects in terms of interpersonal judgment. One-hundred-eighty male undergraduates were classified into high and low conceptual level groups. They were given the Trait Implication instrument on which they were asked questions with high discrepancy such as "How likely is it that a genuine person will also be careless?" as well as questions with low discrepancy, such as "How likely is it that an irresponsible person would be uninformed?" Good or bad traits were more likely to co-occur for the total sample, but low conceptual functioning subjects made more trait implication at a low-discrepancy level than the high-discrepancy level, thus showing less tolerance of inconsistency than abstract subjects.

Wolfe (1974) tested person perception differences between concrete and abstract subjects. Subjects were asked to
complete the Cattell's 16 PF by "giving answers you think a high school teacher would give, and for videotapes of Ms. Green and Mr. Brown, two "teachers." Significant main effects of conceptual level were found. Accuracy of perception of another person was related to conceptual level—the more abstract subjects were more accurate. Sex was also found to be influential, as females were more accurate than males. Intelligence correlated significantly with conceptual level, and was also predictive of accuracy of perception, but the interaction of conceptual level and sex did not approach significance. Findings indicated that conceptual level (abstract), general intelligence (high) and sex (female) are determinant of accuracy of person perception.

Sandilands (1974), in a further test of dissonance asked abstract and concrete subjects each to write a paragraph giving his or her verdict to a mock jury trial, then were asked to volunteer to stay to read what the jury "really" found. Both abstract and concrete subjects stayed, and were given an article with a verdict opposite from what they chose. Concrete subjects were less willing to read the article, spend less time reading the contradictory article, and hence were assumed to be more committed to their original verdict and less tolerant of ambiguity than the abstract subjects.

Harvey (1964) tested influencibility of concrete and abstract subjects by having them judge distances with a
falsely calibrated ruler, with and without peer assistance, and to view slides which were described incorrectly. Findings supported the characterizations of persons in the various systems, as persons in System I were more influenced by those in authority, but had less respect for those who were not. Persons in System II resisted suggestions for conformity, but were influenced by peers. Persons in System III were most influenced by suggestion and by peers. System IV individuals seemed to use the most independent judgment, using social cues, but not relying heavily upon them.

White and Harvey (1965) found that undergraduate students professing beliefs in the Mormon church could be significantly differentiated in terms of concreteness and abstractness by their statements about their faith. Each subject was asked to judge statements about the Mormon Church and to produce anti-church statements. Concrete subjects used more extreme, yet fewer categories in their reactions to the statements, hence implying less differentiation than abstract subjects, and were less able to produce anti-church statements than abstract subjects, hence showing an intolerance for inconsistency of dissonance.

Harvey, Reich, and Wyer (1968) used TIB to identify 10 undergraduate subjects from each system. They found that for stimuli about which subjects had attitudes of low intensity, there were no significant differences in the amount of differentiation. But when stimuli evoked high amounts of
intensity, or what subjects felt strongly about, the abstract individuals showed higher differentiation than the concrete individuals.

Wideranders and Harvey (1977) found differences between concrete and abstract subjects on the motivational influences of various types of feedback. College students were given an intellectual task and were given feedback of either a personal (verbal) or impersonal (electronically administered) nature. System I and System III individuals persisted longer at the task when given personal feedback, while System IV individuals seemed more highly motivated by impersonal feedback. System II individuals were not affected differentially. The researchers noted, however, that 70% of the subjects represented Systems I and III.

Williams (1980) studied home economics education students to determine the relationship between degree of structure in the learning environment and integration and application of knowledge by students who differed in conceptual systems. No significant differences were found between conceptual functioning of the students and their achievement. However, differences were found between amount of structure in the learning environment and achievement.

To summarize the research on conceptual systems theory in general, evidence seems to indicate that the characterizations of individuals in the four systems are substantiated. Additionally, conceptual systems, as measured by the
instruments discussed, do seem to be related to and influential upon the behavior of individuals on a wide variety of tasks. However, caution must be applied, in that smaller numbers of persons are found in some of the systems than in others, specifically the most abstract, and most of the theory testing has been with college students and adults in the teaching profession.

In the framework for the present investigation, the relationships between conceptual systems of teachers (presage variable) and their classroom behaviors (process variables) are being studied. Several similar investigations have been completed both with teachers and with counselors.

Harvey, White, Prather, Alter, and Hoffmeister (1966) measured the belief systems of Head Start teachers and then observed them on 26 behavioral dimensions in the classroom including expression of warmth, perceptiveness of children's needs, flexibility, attention to individual children, task involvement, encouragement of free expression of feelings, task effectiveness, diversity of activities simultaneously permitted, consistency of rule enforcement, rule orientation, need for structure in teaching activities, punitiveness. Based on responses to the TIB, no teachers were found to be in System II. Ten teachers were in System IV. Therefore, 10 were selected from System I and 10 from System III. Results showed predicted differences. System IV teachers out-performed System I teachers on the desirable
behaviors. System III teachers were rated less favorably than System IV, but more favorably than System IV.

To further test the hypothesis that conceptual systems affect overt teacher behaviors, Harvey, Prather, White, and Hoffmeister (1968) rated kindergarten and first-grade teachers on the dimensions from the earlier study (Harvey et al., 1966) that were shown to discriminate between abstract and concrete teachers. From the earlier rating scale, three factors had been derived and labeled Resourcefulness, Dictatorialness, and Punitiveness. It was expected that concrete teachers would be less resourceful, more dictatorial, and more punitive than abstract teachers, and abstract teachers would be more resourceful, less dictorial, and less punitive. The behaviors predicted for the abstract teachers were assumed to be those preferred in the classroom.

Findings were that concreteness-abstractness of the teachers' conceptual systems affected teaching behaviors with the abstract teachers being more resourceful, less dictorial, and less punitive than the concrete teachers. Additionally, they found that the behaviors of the abstract teachers were related positively to preferred behavior of the students, though they did not make any assumptions of causality.

Joyce, Lamb, and Sibol (1966) studied the relationship between conceptual systems of teachers and the way that the teachers processed incoming information about children. A case study of a child was presented in three passages, and
teachers were asked to rate statements of diagnosis and recommendations of remedial action after the presentation of each passage. The concrete subjects took more definite positions earlier on diagnosis and remediation than abstract subjects. Abstract subjects were less definite with the early passages, but were more definite than the concrete subjects after reading the third passage, though the latter finding was not statistically significant.

Hunt and Joyce (1967) studied teachers in training by measuring their conceptual systems and their reflective teaching styles. It was assumed by these researchers that higher reflective index in teaching style is more effective in producing described student learning than a lower reflective index. Concrete and abstract student teachers were found to be different in the use of reflective teaching. Though the sample was small, a positive correlation was found between conceptual levels and reflective teaching. No correlation was found between either conceptual level or reflective teaching and intelligence.

Murphy and Brown (1970) hypothesized that more abstract teachers would use less precise questioning and less sanctioning of attainment and conformity while showing more sanctioning of search behavior by the students and would help students theorize and express themselves. They also predicted that System III teachers would sanction more group related behavior and give more general support than any
other teachers. To test these hypotheses, home economics teachers were assessed for conceptual system. Using Joyce's Manual for Analyzing the Oral Communications of Teachers Instrument, audiotape recordings of the teachers were categorized for the following behaviors: helping students theorize, helping students toward self expression, questioning students for precise answers, delivering information, sanctioning search behavior, sanctioning group relations, sanctioning attainment, sanctioning conformity, and offering general support.

Findings were that System I teachers used much lecturing, appeals to authority, highly specific questioning, and rules stated as prescription. There were no System II teachers. System III teachers were less structured, less teacher directed, more permissive, tolerant of pupil talk, had more noise and confusion in their classrooms, were lenient in enforcing rules, and gave reasons for rules. System IV teachers qualified or justified rules and prescriptions, handled content more abstractly, led students toward generalizations, and made use of pupil questions and ideas. Differences among teachers in the three systems were found to be statistically significant. The hypotheses were supported in the predicted direction.

Heck and David (1973) determined the conceptual functioning of counselors-in-training and had them respond in writing to Porter's 12 Client Responses for two different
clients. Findings were that the high conceptual systems group had higher empathy ratings for both clients than the low group. However, the higher conceptual systems group achieved empathy ratings that were higher for one client than for the other. These findings are suggestive of the fact that counselors with abstract conceptual systems may be more effective counselors than those with concrete systems, but that the showing of empathy even by abstract individuals will vary across clients.

Goldberg (1974) studied graduate students in counseling methods. The conceptual systems of the students were determined. Each student responded to a series of 20 expressions of persons in need of assistance, and the Counselor Verbal Response Scale and Counselor Interaction Analysis System were used as criterion measures. The results were similar to theoretical expectations, that is, the more concrete subjects used more directive verbal behavior. The more abstract subjects (System IV) showed more acceptance and use of client ideas, responded to feelings, conveyed awareness of and sensitivity to the client's perspective, and were more open-ended in their questioning.

Kimberlin and Friesen (1980) did empathy training for undergraduate students. Classified by conceptual levels, the students were then assessed on their empathic abilities by viewing videotaped client statements, that were ambivalent and nonambivalent. They were asked to write helpful
responses to each of the statements. Lower conceptual level subjects had lower empathy for the ambivalent client statements. It was concluded that the lower level helper (the more concrete in conceptual system) may be more limited in responding to varying complexities and ambiguities in clients than the helper at a higher level (the more abstract).

Summary

In summary, support is found in the literature for a positive relationship between conceptual systems, a presage variable, and the behaviors of teachers and counselors, the process variables. The professions of teaching and counseling are similar in that a helping relationship must be established between the professional and client if desired goals for the client are to be reached. In both professions it appears that those teachers and counselors functioning at a more abstract level are able to exhibit behaviors assumed effective in reaching goals, while those at more concrete levels may not be as effective.

Family Life Experiences

Included within the class of presage variables in Duncan and Biddle's (1974) model of classroom teaching is a category of variables called teacher formative experiences. The early family life experiences of teachers, as well as other early socialization experiences, are some of the variables classified within this category. Though "some of these experiences presumably terminated with the ending of childhood . . . their
impact may persist in the teacher's adult personality" (Dunkin & Biddle, 1974, p. 39).

The early family life experiences of teachers have not been studied to any great extent for their impact on teacher personality and teaching processes. Other presage variables, such as characteristics of the teacher education program and current teacher properties and personality, have received much more attention by researchers (Dunkin & Biddle, 1974). There are a few exceptions.

Ryans (1960), in his classic study of the characteristics of teachers, developed case studies of 25 outstanding elementary education teachers. A portion of the data for the case studies came from intensive one-and-a-half hour interviews with the teachers about their early lives. The teachers were asked questions about their relationships with their parents, siblings, and community and their affiliations with religious groups.

When the data were summarized, it was apparent that these outstanding teachers came from solid family backgrounds with much family activity. The subjects expressed feelings of a strong sense of belonging during childhood and adolescence. They also indicated a stronger than average interest in religious activities.

Rosen (1968, 1972, 1975), using a psychoanalytic framework, studied the childhood self as one means of predicting how teachers react to children in their classrooms.
She based her research on a prior study in a residential institution for emotionally disturbed children in which she had found a relationship between the child care workers' perceptions of their childhood selves and the children toward which they showed strongly positive feelings (Rosen, 1963). By having first-year elementary school teachers write descriptions of their childhoods and responding to a questionnaire on motivations and goals, she collected and analyzed data to determine relationships between perceptions of childhood selves and observer assessments as to whether they were "better liked" or "less liked" by children in their classrooms.

Findings indicated that 72% of the "better liked" teachers described their childhoods with strong positive affect, indicated like and respect for their childhood selves, and had an early sense of independence, resourcefulness, social adequacy, and ability to achieve. They described their childhoods as a happy and secure time. Seventy-seven percent of the less-liked teachers focused on unpleasant feelings from childhood. They indicated self-consciousness as a child, over-dependence, worry, feeling of being unwanted and jealous, patterns of withdrawal, and a lesser sense of childhood ego strength (Rosen, 1968).

In a further investigation, Rosen collected autobiographical essays (1972) in order to determine whether certain characteristics in the student teachers' backgrounds seemed
to be predictors of the age group with which they were found to be the most effective according to advisors' ratings. The group judged best with preschool children recalled a close, supportive family life. They tended to extol their parents and described no rebellion as a child. Subsidiary themes revolved around their carefree and untroubled lives and the underplaying of the academic aspects of their school lives.

The group of students teachers who were judged to be best with children ages 5 to 8 described an early concern with mastery and assumption of grown-up roles, independence, responsibility, drive for achievement, love and instructing, caring for, and organizing young children. Secondary themes included rebellion, rejecting or critical parents. These subjects did not dwell on their past family relationships to any extent.

The group that were considered the most effective with children ages 8 to 11 recalled an early love of learning and ideas. They remembered intellectually exciting teachers and homes that were where intellectual and cultural activity were predominant. Subsidiary themes concerned activities with peers and best friends, closeness to older siblings, and difficulties with parents.

On the basis of the autobiographical data, Rosen (1975) developed the Developmental Self and Child Concept Scales. She used the data from three sections of the instrument, Myself Now,
Myself as a Child, and Family Relations to predict responses on the remaining two sections, A Child I Have Especially Enjoyed Working With and A Child I Have Least Enjoyed Working With. Other criterion measures included self-ratings of the subjects' overall ability to relate to children and preferences for working with children of different ages. She found that those who judged themselves as being effective in relating to children perceived their childhood selves more positively than those who rated themselves fair or poor. Those who rated themselves as fair or poor in relating with children described parents who were not supportive, not understanding, and punitive. Though the number who had established a preference for working with young children was small, indications were that those who were interested in preschool teaching had a positive view of their relationships with their parents and viewed their parents as being most often understanding.

One of the tenets of conceptual systems theory is that early experiences are influential in the development of abstractness-concreteness in conceptual style. System I individuals are theorized to have come from early situations where they were restricted in the exploration of values, power relations, and social causality. Parents were controlling authorities who rewarded and punished according to standards of "good" and "bad" and provided their children with a minimum of diversity. System II individuals had
parents who were sometimes authoritarian and sometimes capricious in rewarding and punishing. The environment was unpredictable and unstable, resulting in forced independence and rejection of authority by the child. Individuals in System III had parents who overindulged their children and protected them from the exploration of diversity. The children developed dependency upon the parents and through dependency gained control. System IV individuals had freedom to explore, questions, solve problems, and try out solutions to problems without the fear of punishment from their parents for these behaviors (Harvey et al., 1961).

Cross (1966) tested the assumption of developmental determinants of conceptual system by assessing the conceptual level of adolescent boys, selecting the extreme scorers, and interviewing their parents. Mothers and fathers, separately, were asked about discipline techniques, standards and expectations for their children, and how they handle differences of opinion and criticism of them by their children. The findings were supportive of the theory. Parents of high conceptual level boys were more interdependent, less unilateral, nonauthoritarian, and accepting of their children than were parents of low conceptual level boys. Harvey and Felkor (1970) gathered autobiographical data from persons representing the four systems and found similar support for the theory.
Summary

There is beginning evidence that conceptual systems and teaching behaviors are affected, at least in part, by the individual's family background. Parenting styles, parent-child relationships, sibling relationships, childhood memories, childhood experiences, and perception of childhood self have all been shown to be related to these present characteristics in individuals.

Research on family background in relation to the variables of interest for this investigation is in its early stages. Most data have come from interview and case study techniques and it seems apparent that more description should be generated in order to develop further hypotheses for further testing.

Summary of Chapter

Presented in this chapter was the literature relevant to each of the variables under investigation in this study. The conceptual framework for the study was Dunkin and Biddle's (1974) model of classroom teaching. Specifically, variables falling into the classes of presage and process variables were studied for relationships. The process variables of interest were teaching dimensions of warmth, enthusiasm, clarity, variety, individualization, feedback, cognitive demand, freedom, and on-task activity. Research that has indicated the relationships between these process variables and product variables was presented.
The presage variables under investigation were the conceptual systems of the student teachers and their family backgrounds. The literature and empirical tests of conceptual systems theory was outlined. Beginning research on relationships between family background characteristics, conceptual systems, and teaching behaviors was discussed.
CHAPTER III
METHODOLOGY

Preschool Teacher Competency Project

Data for this study were collected as part of a larger investigation, the Preschool Teacher Competency Project, with Jean D. Dickerscheid, Professor in the Department of Family Relations and Human Development at The Ohio State University, as the principal investigator. The Preschool Teacher Competency Project, funded in July, 1980, by the College of Agriculture and Home Economics Small Grants Program, was an exploratory study in which the overall purpose was to investigate the relationships among personality variables, selected background characteristics, and teaching behaviors of student teachers in preschool settings. The present investigator participated along with the principal investigator in the initial conceptualization of the study and all phases of data collection.

The purpose for the present study was to investigate relationships between the conceptual systems of student teachers and their teaching behaviors with preschool children and to describe the family backgrounds of the student teachers.
Sample

One-hundred-twelve student teachers served as subjects for the study. They were students at either The Ohio State University (OSU), Columbus, Ohio, or Mansfield State College (MSC), Mansfield, Pennsylvania. The students at each institution were enrolled in courses that included a student teaching practicum in a laboratory school setting with preschool children.

One-hundred-thirty-eight students were enrolled in the practicum courses during the consecutive quarters/semesters from Autumn 1980 through Autumn 1981. Of these potential subjects, six opted not to participate in the study initially. Reasons given most frequently for not participating in the study were apprehension about being observed and thoughts that the information being asked was too personal. Twenty subjects dropped the course during the term and, as a consequence, were dropped from the study.

Research Sites

Data were collected at two locations, The Ohio State University (OSU) and Mansfield State College (MSC). At both institutions, programs in child development and family studies are housed in home economics units. The Department of Family Relations and Human Development, offering options in Child Development and in Family Services, is administered within the School of Home Economics at OSU. The Child and Family
Services program at MSC is administered within the Department of Home Economics.

Practicums are offered at both institutions in which students serve as student teachers in a laboratory setting with preschool children. The practicum course at OSU is titled "Nursery School Practicum" and at MSC, "The First Years of Childhood." Students enrolled in the practicum courses at both settings spend approximately 30 hours during the term of enrollment as observers and participants with the children. Their teaching experiences include both large and small group supervision, indoor as well as outdoor play, transition activities, and routine activities such as snacks and toileting. At both locations, the laboratory teaching experiences are accompanied by classroom lecture-discussion sessions and periodic evaluations by the head teachers and course instructors.

The teaching settings were judged to be similar at the two locations. Both laboratory schools, the Laboratory for Child and Family Studies at OSU and the Early Childhood Education Center at MSC, are housed in home economics. Each school facility is used for observation of normal preschool child development and for the early experiences of students who are gaining knowledge and expertise in working with young children either in groups or individually. Personnel in both laboratory schools espouse a philosophy that views children holistically and as active constructors of their development.
and environment. Both schools provide a play-based curriculum that focuses upon individual needs and interests of the children. The schools have half-day programs that enroll children in mixed-age groupings with an approximate balance of age and sex of the children. Each group has a head teacher who is responsible for the overall programming, teaching, and supervision of other teachers and student teachers. At OSU the average group size is 18 children, and there are two different groups of children. At MSC the average group size is 12, and there is one group of children. The majority of the children enrolled in both schools can be described as being within the normal ranges of child development. However, each school includes in its group a few children who have been diagnosed or are being tested for special needs. Both programs serve the institution and the community populations and enroll children from a variety of socioeconomic levels.

Design

The study is designed with both quantitative and qualitative components. A quasi-experimental, correlational design was used for the quantitative element. Relationships between conceptual functioning of student teachers as measured on a paper-and-pencil instrument and ratings of selected teacher behaviors by an observer were calculated and analyzed. Campbell and Stanley (1963) recommended correlational research when "a preliminary survey of hypothesis" (p. 64) is indicated.
That prescription is appropriate for this study in that previous research in conceptual systems and in teacher effectiveness has not investigated relationships between the two sets of variables selected for this investigation. It seems prudent to search for relationships before attempting to imply causality of conceptual systems on teaching behaviors. As Campbell and Stanley (1963) stated, "The absence of . . . a correlation can rule out many simple, causal hypotheses, hypotheses as to main effects of X" (p. 64). A second reason for a correlational design is that the subjects for the investigation were not selected randomly nor was any treatment imposed. All possible subjects enrolled in the practicums at both locations were asked to participate in the study. All were measured and observed in the same way.

The qualitative component consisted of an analysis of essays written by the student teachers about their early family lives. According to Bogden & Taylor (1975), qualitative research designs, unlike other types, are flexible with procedures only loosely defined before data collection. Qualitative research begins with questions that are general.

"Most practitioners of the methodology attempt to enter the field without specific hypotheses or preconceived notions . . . To enter a setting with a set of specific hypotheses is to impose preconceptions and perhaps misconceptions on the setting" (Bogden & Taylor, 1975, p. 27).
The essays that the subjects wrote for this study fall into Bogden and Taylor's (1975) classification of "personal documents" solicited by the researchers.

"By 'personal documents' we mean those materials in which people reveal in their own words their view of their entire life, or a part of it, or some other aspect about themselves" (p. 6).

The essays are "limited" as opposed to "comprehensive" (Bogden & Taylor, 1975) in that the topics suggested to the subjects focused on a specific time period and theme rather than requested a life history.

The intent of qualitative methodology is to develop grounded theory (Glaser & Strauss, 1967) based upon an acquired understanding by the researcher of the meaning of an experience to the subject. Grounded theory generates hypotheses which can later be tested by quantitative methods. As McCall and Simmons (1969) stated:

"... the generation of hypotheses is quite obviously a necessary prior condition to the employment of the many powerful research designs and techniques of verification now available to social scientists" (p. 142).

The qualitative methodology seems appropriate for beginning the study of the early formative experiences of persons who choose to be teachers. From an understanding of their perspectives of family life, hypotheses about their early experiences can be formed and later tested for relationships with personality variables and with teaching behaviors.
Instrumentation

Three instruments were used to collect data in this study. The Background Information Questionnaire, developed by the investigators for this project, provided demographic data and information about the family lives of the subjects. The Conceptual Systems Test (Harvey & Hoffmeister, 1971) yielded scores on six factors and on the basis of one of the factor scores, assigned each subject to one of two categories, either abstract or concrete. The Observer Rating Scales (McDaniel, 1971) provided for systematic observation of each subject on nine dimensions of teaching behavior. Copies of each instrument can be found in Appendix A.

Background Information Questionnaire (BIQ)

The BIQ is an 11 page instrument with 46 questions designed to obtain demographic data and family background information from the subjects. Demographic data obtained from the BIQ include such things as number of credits being currently taken, grade point average, age, student status, major, marital status, number of children, and occupational status. Subjects are asked to list their siblings' first names, ages, and educational levels. Information for such things as parental marital status, parental occupations, place of residence, frequency of residence changes, sources of family incomes, family crisis events, family activities, family closeness, and parental discipline styles is listed by age periods of the subjects. Birth to
2 years, 3 years to 5 years, 6 years to 11 years, and 12 years to 18 years are the 4 age periods of interest. On the last page of the BIQ, subjects are given the following directions for writing an essay:

"In your own words, describe what it was like to grow up in your family. Be as candid as possible. Use the back of the page, too, if you wish."

The BIQ was developed for use in the Preschool Teacher Competency Project by the investigators. The Questionnaire was pilot tested with 19 student teachers to determine clarity of wording, directions, and categories. The instrument was revised to the current form based on pilot test results. Only selected portions of the BIQ were used in the present study. These portions are identified in Appendix A.

Conceptual Systems Test (CST)

The Conceptual Systems Test by Harvey and Hoffmeister (1971) was used to determine the conceptual systems of the student teachers. The CST is a 48-item self-report instrument with a 5-point response scale for responses ranging from "I agree completely" (choice "1") to "I disagree completely" (choice "5"). Examples of the items are

"I think I have more friends than most people I know."

"Contributing to human welfare is the most satisfying human endeavor."

"No man can be fully successful in life without belief or faith in divine guidance."

"I like to criticize people who are in a position of authority."
"Any written work that I do I like to have precise, neat and well-organized."

"These days a person doesn't really know whom he can count on."

The CST is the product of several developmental stages. An earlier effort to measure conceptual systems was a sentence completion type test called the "This I Believe" (TIB) (Harvey, 1966). It is a subjective instrument for which respondents write short statements about their beliefs on a number of topics. The TIB is described more fully on page 50 of Chapter II. Harvey (1966) reported that a number of studies documented validity for the TIB. That is, the TIB was found to measure what was purported to be measured and provided for the classification of individuals into the four theoretical systems.

In order to further operationalize the constructs and to more objectively score the responses, the first version of the CST was developed (Harvey, 1967). The items for the CST came from two sources: 1) statements obtained from sample responses on the TIB and 2) other tests designed to measure personality aspects related to dimensions of conceptual systems. A 6-point response scale was used for each of the 67 questions.

The items were administered to large groups of persons representing a wide variety of experiences (Test Analysis and Development Corporation, 1977). Using factor analysis, seven factors were identified and replicated. They were labeled
Divine Fate Control, Need for Simplicity-Consistency, Need for Structure-Order, Distrust of Social Authority, Friendship Absolutism, Moral Absolutism, and General Pessimism. Means on each of the factor scores for people from each of the four systems as measured by the TIB showed close conformity to theoretical predictions (Harvey, 1967).

Because of ambiguity resulting from the 6-point response scale (Test Analysis and Development Corporation, 1977), a new version of the CST (Harvey & Hoffmeister, 1971) was developed with a 5-point scale and 48 items. The revised CST was administered to about 10,000 subjects and again factor analyzed. Three of the original seven factors have been fully replicated (Test Analysis and Development Corporation, 1977). They are Divine Fate Control, Need for Structure-Order, and General Pessimism. Three new factors have been identified from this version and have also been replicated. They are Need to Help People, Need for People, and Interpersonal Aggression. These six factors are defined on page 12 in Chapter I. Scores for each factor are obtained from the analysis of the CST responses.

For criterion validity, about 500 subjects completed both the newer version of the CST and the TIB. Of those 500, 100 were clearly identified at the System I level by the TIB and only 14 were clearly identified at each of the other system levels. A one-way ANOVA showed that the CST can significantly differentiate System I individuals from individuals...
representing the other systems but cannot differentiate among Systems II, III, and IV. Consequently, System I individuals are classified as "concrete" and individuals representing the other systems are classified as "abstract" (Test Analysis and Development Corporation, 1977; Hoffmeister, 1982). Assignment to levels of concrete or abstract is based only upon the Divine Fate Control factor. A cut-off score of 2.50 on this factor has been found to maximally predict abstractness or concreteness as measured by the TIB with a score higher than 2.50 indicating concreteness, and a score below 2.50 indicating abstractness, (Hoffmeister, 1982).

Test-retest reliability data have not been obtained on the CST-71, but Cronbach's coefficient alpha results range from .80 to .90 for the factors of Divine Fate Control, Need for Structure and Order, Need to Help People, and Need for People. For Interpersonal Aggression and General Pessimism the range is around .70 (Test and Analysis Development Corporation, 1977).

The Observer Rating Scales (ORS)

The Observer Rating Scales (McDaniel, 1971) were used for the systematic observation of the teaching behaviors. The ORS are used by trained observers to rate each of nine dimensions of teaching behavior on a 6-point scale. The nine dimensions are warmth, enthusiasm, clarity, variety, individualization, feedback, cognitive demand, freedom, and on-task activity and have been defined on pages 13 and 14 of
Chapter I. Each of these dimensions is defined and described in a few paragraphs on the instrument. The observer rates the teacher at one of six points along a continuum that ranges from low presence of the behavior (1) to frequent presence of the behavior (6). Each of the six points for each dimension is defined operationally. The observer matches the observed behavior of the teacher with the description of the point on each continuum. Teachers are observed individually for approximately 2- minutes in order for the observer to make the rating.

The scales originally were developed by McDaniel and associates for observation of elementary teachers in their classrooms. For the Preschool Teacher Competency Project, the investigators modified the scales to make them more appropriate for the observation of preschool teachers. The modifications were mainly word changes, such as from "pupil" to "child," and alterations of phases, such as from "teacher provides freedom of choice . . . in terms to how long to study" to "teacher provides freedom of choice . . . in terms of how long to participate in activities" (Dickerscheid, Briggs, and Gnezda, 1982).

The nine behavior dimensions comprising the ORS are categorized as high-inference variables. According to Rosenshine and Furst (1971) high-inference concepts, such as clarity, are more reliable in predicting effective teaching than are low-inference concepts, such as raises hand. Each
of the high-inference variables in the ORS is further defined, however, by more specific behaviors of a low-inference nature at each of the six points of the dimension continuum. Therefore, the scales combine high-inference and low-inference judgments by the observer in making the final rating for each behavior dimension. Dunkin and Biddle (1974) suggested that "research should be pursued on the low-inference components of high-inference concepts that express classroom events known to work" (p. 428).

The ORS was estimated by McDaniel et al. (1974) to have a "relatively high degree of construct validity" (p. 3). Operational definitions of the constructs are given as well as descriptions of behaviors that fall at various points of each continuum.

The investigators for the Preschool Teacher Competency Project tested the predictive validity of the teaching behavior ratings for the 64 OSU subjects. Spearman's rho correlation coefficients were calculated between the rating on each dimension and the grade received in the course practicum. Of the nine coefficients two were significant, enthusiasm ($r = .37, p < .004$) and clarity ($r = .33, p < .01$). The other seven coefficients were nonsignificant.

In order to assure reliability among observers using the ORS, McDaniel, Lohmann, and Little (1974) developed training films which show four different teachers in their classrooms. Training procedures have been outlined by McDaniel et al. (1974).
Before the films are viewed, observers are to familiarize themselves with each of the nine dimensions and discuss behaviors that match the points on each continuum. Following the discussion, observers watch each film, make independent ratings, and discuss their ratings while comparing them to the scoring and rationale provided in the training manual before proceeding to the next film. The training period takes about eight hours.

McDaniel et al. (1974) suggested that a follow-up observation be made by the observers together in a naturalistic setting. Focusing upon one teacher at a time, observers are instructed to make independent ratings and then to discuss their ratings.

Reliability coefficients on observer ratings of the behaviors of the teachers in the training films were reported by McDaniel et al. (1974) as being warmth, .95; enthusiasm, .83; clarity, .87; variety, .93; individualization, .91; feedback, .94; cognitive demand, .82; freedom, .79; and on-task activity, .93.

A further reliability study was conducted by McDaniel (1982) in a naturalistic setting. Elementary school teachers were observed and rated by two observers. The correlations between the ratings of the observers were significant for eight of the dimensions, warmth ($r = .38, p < .05$), enthusiasm ($r = .56, p < .01$), clarity ($r = .46, p < .05$), variety ($r = .83, p < .01$), individualization ($r = .67, p < .01$), cognitive demand
(r = .43, p < .05), freedom (r = .75, p < .01), and on-task activity (r = .49, p < .05). The correlation coefficient for feedback was not significant.

In a previous analysis the investigators for the Pre-school Teacher Competency Project tested the validity of the ORS by correlating the ratings of the trained observers with the ratings of the head teachers of the subjects on each of the nine teaching dimensions. The purpose of the analysis was to determine if the observers, who based their judgments on 20-minute observations of the subjects, and the head teachers, who based their judgments on extended contacts with the subjects, would rate the subjects similarly on each of the nine behaviors. Five of the nine correlations were significant, warmth (r = .45, p = .001), enthusiasm (r = .49, p = .001), enthusiasm (r = .49, p = .001), clarity (r = .27, p = .004), variety (r = .27, p = .004), and feedback (r = .34, p = .0003). The correlations for individualization, cognitive demand, freedom, and on-task activity were not significant.

** Procedures**

Prior to beginning data collection procedures, the proposed study was reviewed and approved by the Human Subjects Review Committee at The Ohio State University. (See Appendix B).

The data collection procedures were identical at each location. Research assistants were given class time in FM & HUDV 465, Nursery School Practicum, at OSU and in HEC 231, The First Years of Childhood, at MSC, during the first class of each term to discuss the study with the students, answer questions, and obtain written permission from those willing to
participate. In the explanation of the study, the research assistants informed the potential subjects that they would be asked to complete a number of activities and would be observed in their teaching. It was made clear in each instance that participation was entirely voluntary and that their participation or lack of it would not influence their course grade or course instructor's opinion of them. They also were assured that the information supplied by them was confidential and would not in any way be shared with those in a position to evaluate them at that time or in the future.

The BIQ, including the essay, was completed by the subjects in the first week of the term. The entire questionnaire took approximately 45 minutes to complete. The CST was administered to the subjects during the third week of the course. Approximately 15 minutes were needed to complete the instrument. Administration of these two instruments took place in a classroom during regularly scheduled class time.

The subjects were observed using the ORS during the last two weeks of their student teaching experience in the term. They were not informed as to when the observation would take place, but they did know that they would be observed sometime during the term. Since both settings are laboratories that accommodate many observers each term, reactivity was judged to be at a minimum. By the end of the term, students in laboratory settings are likely to be accustomed to being watched. Additionally, very few of the subjects in this study knew the observers, and, hence, would not have been aware of the fact that they were being observed for the project at the time that they were. The observers situated themselves in the
portions of the rooms set aside for all observations. At the OSU facility, the observation area is set apart from the rest of the classroom but is visible to the children and the teachers. At the MSC facility an observation booth equipped with one-way glass is used by observers. Each subject was observed for one approximately 20-minute period during a "free play" situation in which several activities were occurring simultaneously. Children moved freely from one activity to another according to their interests.

Four paid observers, two at each location, completed the observations. All were females with a mean age of approximately thirty years. All had previous teaching experience in laboratory settings and had degrees in child development or early childhood education. Three of the observers had master's degrees, and one had a bachelor's degree and was enrolled in a master's degree program.

The observers were trained to use the ORS prior to the observations by following the suggested training procedures (McDaniel et al., 1974; McDaniel, 1980). A training session was conducted at each location by the same research assistant. An overall reliability coefficient of .83 was calculated for the observers' ratings of the teachers on the training films.

**Analysis of Data**

To determine the comparability of subjects in these locations, selected demographic variables were compared using chi-square and *t*-test statistics. In addition, mean ratings
and scores on the study variables were compared by t-tests for the subjects by location.

To determine the influence of conceptual systems on behaviors of individualization, variety, freedom, and cognitive demand, t-tests and one-way analyses of variance were used.

Inter-relationships among factor scores on the CST and among ratings on teaching behaviors were analyzed by Pearson product-moment correlations. A canonical analysis (Darlington, Weinberg, and Walberg, 1973) was used to determine the relationships between the CST factor scores and teaching behavior ratings. The teaching behavior ratings were factor analyzed by a principal-components factor analysis. Multiple regressions were conducted to analyze the amount of variance explained in each resulting teaching behavior factor by the CST factor scores.

For the quantitative component of the study, statistical consulting was provided by Nancy Perrin, Department of Quantitative Psychology. The Statistical Analysis System (Helwig & Council, 1979) was the computer system used for data analysis.

Essays written by the subjects about their family lives were analyzed for their qualitative content by the constant comparative method (Glaser, 1969). The essays were read initially for repetitive themes. Codes for the themes were devised, and the essays were read a second time for the
purpose of coding phrases, sentences, or paragraphs that were illustrative of the themes. The themes were integrated to form six categories. Phrases, sentences, or paragraphs indicating congruence with Harvey's (1966) descriptions of early family experiences determinant of conceptual system development were coded according to four typologies. A beginning theory of the family life of this sample of student teachers was articulated.
CHAPTER IV
RESULTS OF THE INVESTIGATION

Presented in this chapter are the results of the descriptive, statistical, and the qualitative analysis of the relationships between conceptual systems and family backgrounds of the student teachers as presage variables and the teaching behaviors as process variables. The purposes of the investigation were 1) to determine the relationships between the conceptual functioning of the student teachers and the behaviors of teaching exhibited with preschool children, and 2) to describe the family background experiences of the student teachers in order to develop a grounded theory about their early family lives and to generate further hypotheses about the impact of family life on conceptual systems and on teaching. The qualitative data of family background was obtained through essays written as a part of student teachers' responses on the Background Information Questionnaire. Conceptual systems were measured by the Conceptual Systems Test (Test Analysis and Development, 1977) which resulted in six factor scores for each subject. The teaching behaviors were rated through observations of the subjects while in
laboratory school settings with preschool children. The Observer Rating Scales (McDaniel, 1971) were used by observers to make the ratings.

Chi-square analysis and t-tests were used to determine differences in subjects by location on demographic variables and study variables. Hypotheses about the causal impact of conceptual systems on the teaching behaviors of individualization, variety, and freedom were tested by t-tests and one-way analyses of variance. Relationships between the factor scores obtained from the Conceptual Systems Test, between the teaching behaviors as rated on the Observer Rating Scales, and between the factor scores and the teaching behaviors were calculated by Pearson product-moment correlations. Relationships between the factor scores on the Conceptual Systems Test and the teaching behaviors were further tested by a canonical correlation procedure. A principal-components factor analysis of the teaching behaviors was conducted, and the two significant factors were treated as dependent variables in separate simultaneous multiple regressions with the factor scores from the Conceptual Systems Test as the independent variables. The significant relationship between conceptual systems and the teaching behavior of cognitive demand was further explored by a one-way analysis of variance with conceptual system as the independent variable and cognitive demand as the dependent variable. The Duncan's Multiple Range Test was used for post-hoc analysis to
determine which mean was significantly different from the others.

The essays were first read by the investigator to determine initial categories. The essays were then coded by categories which were combined and confirmed by the use of the constant comparative method of qualitative analysis (Glaser, 1969).

The chapter is organized into four sections. A description of the subjects by location and combined is presented first. In the second section, the results of the tests of the hypotheses are presented. Results of the quantitative analysis of the research questions are presented in the third section. In the fourth section the results of the qualitative analysis of the essays are presented.

Description of Subjects

Demographic Data

Data were collected at two locations, The Ohio State University (OSU) and Mansfield State College (MSC). A total of 112 subjects participated in this phase of the study. Of those, 64 were from OSU and 48 were from MSC. Presented in Table 1 are the means and frequencies of demographic variables for the subjects by location and combined.
<table>
<thead>
<tr>
<th>Variables</th>
<th>OSU N=64</th>
<th>MSC N=48</th>
<th>Combined N=112</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Mean</td>
<td>21.67</td>
<td>20.83</td>
<td>21.31</td>
</tr>
<tr>
<td>GPA Mean</td>
<td>2.82</td>
<td>2.94</td>
<td>2.87</td>
</tr>
<tr>
<td>Student Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshmen &amp; Sophomores</td>
<td>0</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Juniors &amp; Seniors</td>
<td>62</td>
<td>17</td>
<td>79</td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
<td>3</td>
<td>5*</td>
</tr>
<tr>
<td>Major</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child Development,</td>
<td>47</td>
<td>8</td>
<td>55</td>
</tr>
<tr>
<td>Family Studies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home Economics</td>
<td>17</td>
<td>12</td>
<td>29</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary Education</td>
<td>0</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>5</td>
<td>5*</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>62</td>
<td>47</td>
<td>109</td>
</tr>
<tr>
<td>Males</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

* Deleted for Chi-Square Analysis
The mean age of the total sample was 21.31 years. The subjects at OSU were older than those at MSC. An independent-samples t-test of these two group means, however, did not show a significant difference between ages at the two locations. The mean grade-point average for the total sample was 2.87 out of a possible 4.00. An independent-samples t-test of the two location means showed no significant difference in grade point average at the two locations.

In the total sample, one student was a freshman, 27 were sophomores, 27 were juniors and 52 were seniors. Two subjects were graduate students, and three were classified as special students. Cells were collapsed to create a 2 x 2 contingency table by combining freshmen and sophomores into one group and juniors and seniors into the second group. Graduate student and special student categories were deleted for this analysis. A chi-square test showed a significant difference between the two locations on student status. More freshmen and sophomores were at MSC, and more juniors and seniors were at OSU.

Table 2

<table>
<thead>
<tr>
<th>Chi-Square Value</th>
<th>df</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>52.25</td>
<td>1</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>
Fifty-five subjects were majoring either in family relations and human development at OSU or child and family services at MSC. These two majors are similar in course content and practicum experiences; therefore, for simplicity, they both are referred to as child development and family studies for this investigation. Home economics education was the major of 29 subjects, and elementary education was the major of 23. Five subjects were in other majors (textiles and clothing, special education). To obtain a valid chi-square test, the "other" category was deleted. The OSU and MSC samples were then tested for differences in frequencies of subjects in the three majors of child development and family studies, home economics education, and elementary education. A significant difference was found between locations on the majors of the subjects. OSU had more subjects in child development and family studies. MSC had more in elementary education.

Table 3
Chi-Square of Major by Location

<table>
<thead>
<tr>
<th>Chi-Square Value</th>
<th>df</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>49.29</td>
<td>2</td>
<td>.0001</td>
</tr>
</tbody>
</table>

In the total sample there were 109 females and 3 males. A 2 x 2 chi-square analysis using a Fisher's exact text (2
tail) showed no significant difference in sex of subjects by location.

**Study Variables**

The six factor scores from the CST, the level assignments to abstract or concrete systems, and the nine ratings on dimensions of teaching behavior on the ORS were the variables for this investigation. Presented in Table 4 are the means and standard deviations by location and combined for the six CST factor scores. The highest factor score mean was the mean for Need to Help People (Combined $\bar{X}=4.18$; OSU $\bar{X}=4.09$; MSC $\bar{X}=4.31$), and the lowest was the one for Interpersonal Aggression (Combined $\bar{X}=2.00$; OSU $\bar{X}=2.12$; MSC $\bar{X}=1.83$).

The four factor means above the mid-point of 3.00 were divine Fate Control (Combined $\bar{X}=3.32$; OSU $\bar{X}=3.17$; MSC $\bar{X}=3.52$), Need for Structure and Order (Combined $\bar{X}=3.76$; OSU $\bar{X}=3.68$; MSC $\bar{X}=3.87$). Need to Help People (Combined $\bar{X}=4.18$; OSU $\bar{X}=4.09$; MSC $\bar{X}=4.31$), and Need for People (Combined $\bar{X}=3.71$; OSU $\bar{X}=3.67$; MSC $\bar{X}=3.75$). Two factor score means were below the mid-point, and they were General Pessimism (Combined $\bar{X}=2.46$; OSU $\bar{X}=2.43$; MSC $\bar{X}=2.50$), and Interpersonal Aggression (Combined $\bar{X}=2.00$; OSU $\bar{X}=2.12$; MSC $\bar{X}=1.83$). The standard deviations for the scores on each factor ranged from 0.51 for Need to Help People to 1.06 for Divine Fate Control.
Table 4
Means and Standard Deviations of CST Factors by Location and Combined

<table>
<thead>
<tr>
<th>CST Factors</th>
<th>OSU</th>
<th>MSC</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \bar{X} )</td>
<td>S.D.</td>
<td>( \bar{X} )</td>
</tr>
<tr>
<td>Divine Fate Control</td>
<td>3.17</td>
<td>1.01</td>
<td>3.52</td>
</tr>
<tr>
<td>Need for Structure/Order</td>
<td>3.68</td>
<td>0.86</td>
<td>3.87</td>
</tr>
<tr>
<td>Need to Help People</td>
<td>4.09</td>
<td>0.54</td>
<td>4.31</td>
</tr>
<tr>
<td>Need for People</td>
<td>3.67</td>
<td>0.76</td>
<td>3.75</td>
</tr>
<tr>
<td>Interpersonal Aggression</td>
<td>2.12</td>
<td>0.63</td>
<td>1.83</td>
</tr>
<tr>
<td>General Pessimism</td>
<td>2.43</td>
<td>0.73</td>
<td>2.50</td>
</tr>
</tbody>
</table>

Of the 112 subjects 96 were classified as having concrete conceptual systems and 14 as abstract. Three were unassigned to either category because of inconsistency of response (Hoffmeister, 1982).
Table 5
Frequencies of Concrete and Abstract Systems Assignment by Location and Combined

<table>
<thead>
<tr>
<th>Systems</th>
<th>OSU</th>
<th>MSC</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>9</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>Concrete</td>
<td>53</td>
<td>42</td>
<td>95</td>
</tr>
<tr>
<td>Unassigned</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

Presented in Table 6 are the means and standard deviations for each of the nine dimensions of teaching behavior on the ORS. The highest mean rating was for freedom (Combined $\bar{X}=5.21$; OSU $\bar{X}=5.09$; MSC $\bar{X}=5.35$), and the lowest mean rating was for cognitive demand (Combined $\bar{X}=2.66$; OSU $\bar{X}=1.78$; MSC $\bar{X}=3.83$).

Seven of the nine mean ratings were above the mid-point of 3.50. They were warmth (Combined $\bar{X}=4.68$; OSU $\bar{X}=4.59$; MSC $\bar{X}=4.79$), enthusiasm (Combined $\bar{X}=4.24$; OSU $\bar{X}=4.27$; MSC $\bar{X}=4.23$), clarity (Combined $\bar{X}=4.51$; OSU $\bar{X}=4.30$; MSC $\bar{X}=4.81$), variety (Combined $\bar{X}=4.37$; OSU $\bar{X}=4.37$; MSC $\bar{X}=4.38$), individualization (Combined $\bar{X}=4.92$; OSU $\bar{X}=4.39$; MSC $\bar{X}=4.96$), freedom (Combined $\bar{X}=5.21$; OSU $\bar{X}=5.09$; MSC $\bar{X}=5.35$), and on-task activity (Combined $\bar{X}=5.17$; OSU $\bar{X}=5.17$; MSC $\bar{X}=5.17$). The mean rating for feedback was close to the mid-point (Combined $\bar{X}=3.47$; OSU $\bar{X}=3.63$; MSC $\bar{X}=3.24$). The mean rating for cognitive
demand was below the mid-point (Combined $\bar{X}=2.66$; OSU $\bar{X}=0.178$; MSC $\bar{X}=3.83$).

The standard deviations for the scores on each dimension ranged from 0.92 for freedom to 1.45 on cognitive demand.

Table 6
Means and Standard Deviations of Teaching Behaviors by Location and Combined

<table>
<thead>
<tr>
<th>Teaching Behavior</th>
<th>OSU</th>
<th>MSC</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{X}$</td>
<td>S.D.</td>
<td>$\bar{X}$</td>
</tr>
<tr>
<td>Warmth</td>
<td>4.59</td>
<td>0.90</td>
<td>4.79</td>
</tr>
<tr>
<td>Enthusiasm</td>
<td>4.27</td>
<td>1.40</td>
<td>4.23</td>
</tr>
<tr>
<td>Clarity</td>
<td>4.30</td>
<td>1.16</td>
<td>4.81</td>
</tr>
<tr>
<td>Feedback</td>
<td>3.63</td>
<td>1.35</td>
<td>3.24</td>
</tr>
<tr>
<td>Variety</td>
<td>4.37</td>
<td>0.81</td>
<td>4.38</td>
</tr>
<tr>
<td>Individualization</td>
<td>4.39</td>
<td>0.98</td>
<td>4.96</td>
</tr>
<tr>
<td>Cognitive Demand</td>
<td>1.78</td>
<td>0.68</td>
<td>3.83</td>
</tr>
<tr>
<td>Freedom</td>
<td>5.09</td>
<td>0.81</td>
<td>5.35</td>
</tr>
<tr>
<td>On-Task Activity</td>
<td>5.17</td>
<td>1.02</td>
<td>5.17</td>
</tr>
</tbody>
</table>

The independent variables for this investigation were the six CST factor scores and the level (i.e. abstract or concrete) of conceptual functioning. To determine if there were differences in these variables by location, independent samples t-tests of the means of the six factors were performed.
Two of the factors, Need to Help People and Interpersonal Aggression, were significantly different by location. The MSC group was higher on Need to Help People \( (t=-2.26, \, df=108.3, \, p<.03) \), and the OSU group was higher on Interpersonal Aggression \( (t=2.27, \, df=95.4, \, p<.03) \).

Table 7

t-tests of the Means of Need to Help People and Interpersonal Aggression by Location

<table>
<thead>
<tr>
<th>Factors</th>
<th>t-Value</th>
<th>df</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need to Help People</td>
<td>-2.26</td>
<td>108.3</td>
<td>&lt;.03</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>2.27</td>
<td>95.4</td>
<td>&lt;.03</td>
</tr>
</tbody>
</table>

The frequencies of assignment to categories of abstract and concrete systems by location were tested by a chi-square analysis. No significant difference was found between subjects at OSU and MSC. The proportions of subjects in each system are the same at the two locations.

The dependent variables were the ratings on the nine dimensions of teaching behavior on the Observer Rating Scales. To test for differences in ratings by location, independent samples t-tests of the means of the ratings were conducted. On two of the dimensions, clarity and cognitive demand, there were significant differences in the ratings by location. For both, the MSC subjects were rated higher than the OSU subjects.
(clarity, $t=-1.98$, $df=109.0$, $p<.05$; cognitive demand, $t=-10.39$, $df=110.0$, $p=.0001$).

Table 8

<table>
<thead>
<tr>
<th>Teaching Behaviors</th>
<th>t-Value</th>
<th>df</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarity</td>
<td>-1.98</td>
<td>109.0</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Cognitive Demand</td>
<td>-10.39</td>
<td>110.0</td>
<td>.0001</td>
</tr>
</tbody>
</table>

Discussion

On three of the five demographic variables, the subjects at the two locations were similar. Sex of the subjects, age, and grade point average did not differ by location. The subjects differed on the demographic variables of student status and major. All of the freshmen and sophomores in the sample were students at MSC. The OSU sample was comprised almost entirely of juniors and seniors. All of the elementary education majors were in the MSC sample, whereas, the OSU sample had a larger proportion of child development and family studies majors than the MSC sample did.

The two samples were similar on 11 of the 15 metric study variables (CST factor scores and ORS ratings). OSU and MSC subjects did not differ significantly on scores
on Divine Fate Control, Need for Structure and Order, Need for People, General Pessimism, warmth, enthusiasm, feedback, variety, individualization, freedom, and on-task activity. The two groups were similar also in proportions of subjects with abstract or concrete conceptual systems.

The two samples differed significantly on four of the 15 metric study variables. The MSC sample was higher on Need to Help People, clarity and cognitive demand. The OSU group was higher on Interpersonal Aggression.

The differences found in the subjects on two variables, student status and major, can be explained by curriculum structure differences between the programs at the two locations. The difference in student status is considered to be a result of the fact that the first practicum experience is part of a course taken early in the curriculum sequence at MSC. AT OSU the practicum course is typically taken a quarter or two before the student teaching quarter. Hence, sophomores and juniors generally take the practicum course at MSC, and juniors and seniors take it at OSU. The fact that the mean age of the subjects does not differ significantly when the student status does can be explained by the fact that the MSC sample included some older, returning students.

The difference between the two locations in majors of the students can be explained by the fact that at MSC, the practicum course is a program requirement for students who are majoring in Elementary Education with an early childhood
education concentration in addition to those in Child and Family Services and Home Economics Education. The practicum at OSU is not a required course for students in Early and Middle Childhood Education. The program in Child and Family Services at MSC is much smaller in proportion to Family Relations and Human Development at OSU. Thus, the differences in numbers between the two locations in child development and family studies can be attributed to this difference in program size.

The differences in mean ratings on Need to Help People and Interpersonal Aggression between the two samples may be due to the different settings of the two institutions, and consequently, to the differences in the students that each attracts. Mansfield State College is located in a rural area in north central Pennsylvania. The majority of the 2500 students attending the college are those who live within the geographic region proximic to Mansfield. Conversely, The Ohio State University, with its enrollment of over 50,000 students, draws its student population from a widespread geographic region. Additionally, it is located in an urban setting. It may be that the students at Mansfield State College are less likely to feel the competition and the need for self-protection that students at a larger campus, such as The Ohio State University, are likely to feel. This could be reflected in their amount of friendliness and lack of animosity toward people and their motivations to be a helper.
The differences in the mean ratings on the behaviors of cognitive demand and clarity may be explained by the fact that proportionately, the Mansfield State College sample had more students with majors in elementary education than in child development and family studies, while the largest proportion of The Ohio State University sample were majoring in child development and family studies. In earlier investigations, high ratings on the dimension of cognitive demand in teacher behavior were found to be more appropriate for the teaching of older children than younger children (Brophy & Evertson, 1976; Ragosta et al., 1971). Since a larger proportion of the sample at MSC was enrolled in teacher education programs for learning to work with older learners (elementary education and home economics education) than the proportion for OSU, the possibility exists that more of the student teachers at MSC had not yet adapted their level of cognitive demand to the appropriate level for young children. The same might be said for the student teachers' clarity behaviors, though the previous research literature is not definitive on clarity. Brophy and Evertson (1976) suggested that clarity in the form of advance organizing and teacher structuring is not yet applicable to the education of young children.

The subjects at both locations were combined for subsequent data analysis for two reasons. First, the teaching settings (context variables) were judged to be similar at the two locations. Both were laboratory school with three- and four-year-old children with similar staffing arrangements and
similar program philosophies. Second, the major criterion for inclusion of subjects in the study was that they were all participating in their first supervised practicum. This criterion was met for all subjects at both locations; hence, all were assumed to be at the same early stage of teacher development. It was believed that the differences found between the two samples in the demographic and study variables would not affect the findings in subsequent analysis.

**Tests of Research Hypotheses**

Three hypotheses based upon the review of literature on conceptual systems as related to teaching behavior were formulated. To test these hypotheses, subjects were initially grouped into two systems, abstract and concrete, according to their scores on the Divine Fate Control factor, which was found by Harvey and Hoffmeister to distinguish abstract from concrete thinkers (Hoffmeister, 1982). Subjects who scored from 1.00 to 2.50 on the factor were labeled "abstract." Subjects who scored above 2.50 on the factor were labeled "concrete." In total, there were 14 abstract subjects and 95 concrete subjects.

Subsequently, in order to compare extremes on abstractness and concreteness and to test for curvilinearity, the subjects were separated into three groups along the abstract-concrete dimension according to cut-off points suggested by Hoffmeister (1982). Low scorers (most abstract) were those who scored between 1.00 and 2.24 on the Divine Fate Control factor; middle scorers were those with scores between 2.25 and 3.74 on the factor; and high scorers (most concrete) were those with scores between 3.75 and 5.00 on the factor. Eleven
subjects were in the low scorer group; 60 were middle-scorers; and 35 were high scorers.

**Hypothesis One**

Student teachers with abstract conceptual systems will have significantly higher ratings on the behavior dimension of individualization than student teachers with concrete conceptual systems.

The means and standard deviations of the individualization behavior at the two levels of abstractness-concreteness are presented in Table 9. The mean difference between the abstract and concrete subjects on individualization was slight (abstract $\bar{X}=4.93$, concrete $\bar{X}=4.91$). To test the significance of the difference, the means were compared by an independent-samples t-test. Results indicated that the difference in individualization ratings at two levels of conceptual system was not significant.

<table>
<thead>
<tr>
<th>System</th>
<th>N</th>
<th>$\bar{X}$</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>14</td>
<td>4.93</td>
<td>1.44</td>
</tr>
<tr>
<td>Concrete</td>
<td>95</td>
<td>4.91</td>
<td>1.25</td>
</tr>
</tbody>
</table>

The means and standard deviations of the individualization rating at each of the three levels of abstractness-concreteness are in Table 10. The mean for the low scorers was highest ($\bar{X}=5.8$) and for the middle scorers was lowest ($\bar{X}=4.72$). A one-way analysis of variance was performed with three levels of abstractness-concreteness as the independent variable and the individualization rating as the dependent variable. No significant differences between the three means were found.
Therefore, the hypothesis was not supported in this sample of student teachers. Students with abstract conceptual systems were not observed to behave differently on individualization than those with concrete conceptual systems.

Table 10

Means and Standard Deviations of Individualization Ratings by Three Levels of Conceptual System

<table>
<thead>
<tr>
<th>System</th>
<th>Individualization</th>
<th>N</th>
<th>X</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Scorers (Abstract)</td>
<td></td>
<td>11</td>
<td>5.18</td>
<td>0.98</td>
</tr>
<tr>
<td>Middle Scorers</td>
<td></td>
<td>60</td>
<td>4.72</td>
<td>1.29</td>
</tr>
<tr>
<td>High Scorers (Concrete)</td>
<td></td>
<td>38</td>
<td>5.13</td>
<td>1.28</td>
</tr>
</tbody>
</table>

Hypothesis Two

Student teachers with abstract conceptual systems will have significantly higher ratings on the behavior dimension of variety than teachers with concrete conceptual systems.

The means and the standard deviations of the variety ratings for each of the two levels of conceptual systems are presented in Table 11. Contrary to what was hypothesized, the mean for abstract subjects on variety ($\bar{X}=4.36$) was not different from that of the concrete subjects ($\bar{X}=4.36$).
Means and standard deviations for each of the three levels of conceptual system are presented in Table 12. Low scorers (abstract) had the highest mean ($\bar{X}=4.64$), and middle scorers had the lowest mean ($\bar{X}=4.22$). A one-way analysis of variance was performed. Results showed no significant differences between the means. Thus, hypothesis two was not supported in this sample. Student teachers with abstract conceptual systems did not perform differently on the variety behavior dimension than those with concrete systems.
Table 12
Means and Standard Deviations of Variety Ratings by Three Levels of Conceptual System

<table>
<thead>
<tr>
<th>System</th>
<th>Variety</th>
<th>N</th>
<th>X</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Scorers (Abstract)</td>
<td></td>
<td>11</td>
<td>4.64</td>
<td>0.81</td>
</tr>
<tr>
<td>Middle Scorers</td>
<td></td>
<td>59</td>
<td>4.22</td>
<td>0.97</td>
</tr>
<tr>
<td>High Scorers (Concrete)</td>
<td></td>
<td>38</td>
<td>4.50</td>
<td>1.16</td>
</tr>
</tbody>
</table>

Hypothesis 3

Student teachers with abstract conceptual systems will have significantly higher ratings on the behavior dimension of freedom than students with concrete conceptual systems.

Means and standard deviations of the behavior rating of freedom for two levels of conceptual system were calculated and are summarized in Table 13. Contrary to expectations, the mean for the behavior of freedom was higher for concrete subjects ($\bar{X}=5.23$) than for abstract subjects ($\bar{X}=5.14$). The difference was tested for significance by an independent samples $t$-test and was found not to be significant. There was no difference between the means of freedom for two levels of conceptual system.
Table 13
Means and Standard Deviations of Freedom Ratings by Two Levels of Conceptual System

<table>
<thead>
<tr>
<th>System</th>
<th>N</th>
<th>X</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>14</td>
<td>5.14</td>
<td>1.35</td>
</tr>
<tr>
<td>Concrete</td>
<td>95</td>
<td>5.23</td>
<td>0.86</td>
</tr>
</tbody>
</table>

Means and standard deviations on freedom ratings for each of the three levels of conceptual system are presented in Table 14. Low scorers (abstract) had the highest mean for freedom ($\bar{X}=4.64$) and middle scorers had the lowest mean ($\bar{X}=4.22$). A one-way analysis of variance was performed. Results showed no significant differences between the means. Thus, hypothesis two was not supported in this sample. The abstract student teachers did not perform better than the concrete student teachers on the behavior dimension of freedom.
Table 14
Means and Standard Deviations of Freedom Ratings by Three Levels of Conceptual System

<table>
<thead>
<tr>
<th>System</th>
<th>Freedom</th>
<th>N</th>
<th>X</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Scorers</td>
<td></td>
<td>11</td>
<td>5.45</td>
<td>0.69</td>
</tr>
<tr>
<td>(Abstract)</td>
<td></td>
<td>60</td>
<td>5.05</td>
<td>1.05</td>
</tr>
<tr>
<td>Middle Scorers</td>
<td></td>
<td>38</td>
<td>5.42</td>
<td>0.72</td>
</tr>
<tr>
<td>(Concrete)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Discussion

The three research hypotheses were not supported for this sample of student teachers. Student teachers with abstract conceptual systems were not observed to have more behaviors indicating individualization, variety, and freedom than those with concrete systems. These findings run contrary to the expectations set forth in conceptual systems theory and the findings in the research literature. With regard to individualization, abstract persons are hypothesized to be less ethnocentric, more relative in making generalizations, and more open to differences in others (Harvey et al., 1961) than concrete persons. Abstract persons were found to be less willing to form firm impressions about the traits and abilities of others (Halverson, 1970; Ware & Harvey, 1967;
Wolfe, 1961) than concrete persons. Abstract teachers were found by Harvey et al. (1966) to be more able to attend to individual children and to perceive their needs than concrete teachers. Abstract teachers also made better use of student ideas and sanctioned less conformity to group related behavior than did concrete teachers (Murphy & Brown, 1970).

For the behavior dimension of variety, abstract persons are hypothesized to be more flexible and adaptable than are concrete persons. Abstract individuals were found to be better able to deal with cognitive dissonance and inconsistency than concrete individuals were (Halverson, 1970; Harvey & Ware, 1967; Sandilands, 1974). Abstract teachers were more flexible with the children, presented a wider diversity of activities, and were more resourceful than concrete teachers (Harvey et al., 1966; Harvey et al., 1968).

For behaviors related to the dimension of freedom, Harvey et al. (1961) hypothesized that concrete persons are more dependent upon those in authority and expect dependence and conformity by those over which they have authority, while abstract persons are more independent and foster independence. Early childrearing experiences are different in the two groups. Abstract persons are reared by parents who valued independence and personal decision-making, while concrete persons are reared to be conforming and adhering strictly to parental rules and standard. Harvey et al. (1966) found abstract teachers to encourage free expression of feelings and to be
less rule oriented and punitive. In another study, Harvey et al. (1968) found abstract teachers to be less dictorial and less punitive than concrete teachers. Murphy and Brown (1970) found that abstract teachers were more able to help students theorize and express themselves and were less concerned with conformity.

The differences by conceptual system were not seen in the teaching behaviors in this sample of student teachers. An explanation may lie in the fact that the overall means for each of the behaviors were high. It may be that the student teachers were not differing enough from each other to effectively distinguish the concrete from the abstract group on these behaviors.

Another explanation may lie in the fact that these teaching behaviors are related to techniques of teaching. Student teachers in their first practicum experience may not as yet have preferred techniques of teaching, and instead, are modeling their behavior after the techniques seen in their head teachers. If the behaviors of individualization, variety, and freedom, are valued and practiced by the head teachers, student teachers may be practicing them in an imitative manner.

A third explanation may be related to the notion of finding an optimal match between teacher and learner. Preschool children developmentally are at lower stages of conceptual system development. Hence, they require a learning environment that is structured, consistent, accepting, and firm (Hunt, 1979). This type of environment is the one preferred by adults at lower conceptual levels. Hence, the teaching style and methods preferred by the concrete level teacher may be the same as those that are most effective for the preschool child's style of learning. Abstract level teachers also can
be effective in matching their teaching to the needs of preschool learners, as they are able to adapt their methods and styles of teaching to the needs of the learner whether the learner is concrete or abstract.

Exploration of Research Questions

Seven research questions were explored in this investigation. Four questions centered on the quantitative component of the study while three were explored in the qualitative component. The questions, statistical analysis, results, and discussion for the quantitative analysis are presented first in this section and, the qualitative questions and results follow.

Question One

Is the study sample normally distributed:

(A) on each of the factor scores from the Conceptual Systems Test?

(B) into the two system categories, abstract and concrete, as assigned from their responses on the Conceptual Systems Test?

(C) on each of the nine dimensions of teaching behavior as rated on the Observer Rating Scales?

CST factor scores. Means and standard deviations for the combined factor scores were presented in Table 4, p. 97. The midpoint for each factor is 3.00. None of the mean factor scores for this sample is at the mid-point. Four factor score means are above the mid-point (Divine Fate Control, \( \bar{X} = 3.32 \); Need for Structure-Order, \( \bar{X} = 3.76 \); Need to Help People, \( \bar{X} = 4.18 \); and Need for People, \( \bar{X} = 3.71 \)), and two are below the mid-point (Interpersonal aggression, \( \bar{X} = 2.00 \); General Pessimism; \( \bar{X} = 2.46 \)). The standard deviations ranged from 0.51 to 1.06 for the six factor scores, with Divine Fate Control at 1.06 and Need to Help People at 0.51.

Hoffmeister, in a personal communication, stated that there is no information available about the expected distribution
for each factor score. Thus, for this investigation, the question of normality of distribution on the scores of the CST factors cannot be answered.

**Conceptual system categories.** Frequencies and percentages of assignments into the abstract and concrete categories for the combined sample can be examined in Table 5, p. 98. Three subjects were not assigned due to inconsistency in response to the items on the CST (Hoffmeister, 1982).

According to Hoffmeister (1982), 60 to 70% of the population normally falls into the concrete conceptual system assignment. In this sample, 84% were classified as concrete. Hence, this sample of student teachers has a higher percentage of individuals with concrete conceptual systems than would be expected in a normal population.

**ORS behavior ratings.** The means and the standard deviations of the ratings of this sample for each behavior were presented in Table 6, p. 99. The means for warmth, enthusiasm, clarity, variety, individualization, freedom, and on-task activity were above the mid-point of 3.5, ranging from 4.25 for enthusiasm to 5.21 for freedom. The mean for feedback, 3.47, was close to the mid-point. The mean for cognitive demand, 2.66, was below the mid-point. Standard deviations for the ratings on each of the nine dimensions ranged from 0.92 for freedom to 1.45 for cognitive demand.

McDaniel, in a personal communication, verified that since the scales have not been used previously on preschool teachers, no norms have been established for teachers of this
age group of children. Consequently, the means and the standard deviations obtained for this sample of teachers only can be assumed to represent an expected distribution for preschool teachers.

Question Two

Are there relationships among the six factor scores obtained by the subjects on the Conceptual Systems Test? What is the nature of these relationships?

The six factors are Divine Fate Control, Need for Structure and Order, Need to Help People, Need for People, Interpersonal Aggression, and General Pessimism. Pearson product-moment correlations were used to test for relationships among these factors. A correlation matrix showing the intercorrelations is presented in Table 15.

Table 15

Correlation Matrix for Six Factor Scores on the CST

<table>
<thead>
<tr>
<th>CST Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Divine Fate Control</td>
<td>-</td>
<td>.05</td>
<td>.21a</td>
<td>.22a</td>
<td>-.01</td>
<td>.12</td>
</tr>
<tr>
<td>2. Need for Structure/Order</td>
<td>-</td>
<td>.15</td>
<td>.17</td>
<td>-.05</td>
<td>-.04</td>
<td></td>
</tr>
<tr>
<td>3. Need to Help People</td>
<td>-</td>
<td></td>
<td>.35c</td>
<td>.28b</td>
<td>-.17</td>
<td></td>
</tr>
<tr>
<td>4. Need for People</td>
<td>-</td>
<td>.05</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Interpersonal Aggression</td>
<td>-</td>
<td></td>
<td></td>
<td>.34c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. General Pessimism</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a_P < .05  b_P < .01  c_P < .001
Five significant correlation coefficients were found when two would have been expected to occur by chance. Positive correlations were found between Divine Fate Control and Need to Help People, Divine Fate Control and Need for People, Need to Help People and Need for People, and Interpersonal Aggression and General Pessimism. A negative correlation was found between Need to Help People and Interpersonal Aggression.

Though some of these zero-order correlations may be spurious, the findings suggest that persons who are high in a sense of divine fate control are likely to express a need to help people and to be with people. Persons who have a need to help people have a need to be with people. Individuals who have high amounts of interpersonal aggression are likely to be generally pessimistic. Individuals who have a need to help people are probably low in interpersonal aggression, while those low in need to help people are high in interpersonal aggression.

Question Three

Are there relationships among the nine dimensions of teaching behavior as rated on the Observer Rating Scales? What is the nature of these relationships?

The nine teaching dimensions are warmth, enthusiasm, clarity, variety, individualization, feedback, cognitive demand, freedom, and on-task activity. To test for intercorrelations, Pearson product-moment correlations were
performed. In Table 16 is presented the results of the correlation analysis.

Table 16
Correlation Matrix for the Nine ORS Teaching Dimensions

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Warmth</td>
<td></td>
<td>.72&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.53&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.33&lt;sup&gt;c&lt;/sup&gt;</td>
<td>.45&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.39&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.26&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.40&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.42&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>2. Enthusiasm</td>
<td></td>
<td>.59&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.41&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.41&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.50&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.28&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.30&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.39&lt;sup&gt;d&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>3. Clarity</td>
<td></td>
<td></td>
<td>.55&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.66&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.55&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.51&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.37&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.48&lt;sup&gt;d&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>4. Variety</td>
<td></td>
<td></td>
<td></td>
<td>.49&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.36&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.37&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.51&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.45&lt;sup&gt;d&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>5. Individualization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.26&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.42&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.33&lt;sup&gt;c&lt;/sup&gt;</td>
<td>.39&lt;sup&gt;d&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>6. Feedback</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.11&lt;sup&gt;&lt;/sup&gt;</td>
<td>.20&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.39&lt;sup&gt;d&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>7. Cognitive Demand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.40&lt;sup&gt;d&lt;/sup&gt;</td>
<td>.29&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>8. Freedom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.30&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>9. On-Task Activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> P<.05  
<sup>b</sup> P<.01  
<sup>c</sup> P<.001  
<sup>d</sup> P=.0001

Significant positive correlations were found between all but one pair, feedback and cognitive demand, where four correlations would be expected to occur by chance. Twenty-six of the correlation coefficients were significant to the .0001 level. The results of the zero-order correlations suggest
that the teaching behaviors are positively interrelated. Therefore, teachers with high ratings in one dimension also would have high ratings in the others.

**Question Four**

Are there relationships between factor scores on the Conceptual Systems Test and the behaviors observed in teachers as rated on the Observer Rating Scales? What is the nature of these relationships?

A Pearson product-moment correlation analysis of the data yielded eight significant zero order correlations where three would be expected to occur by chance among the 15 variables. Seven of the coefficients were positive and one was negative. However, some of the relationships are weak. The correlation matrix is shown in Table 17. It can be concluded that Need For People accounts for approximately 6% of the variance in warmth, 4% of the variance in enthusiasm, and 4% of the variance in feedback behaviors. Five percent of cognitive demand behaviors may be accounted for by Divine Fate Control, 4% by Need to Help People, and 4% by Interpersonal Aggression. Need to Help People also may account for approximately 6% of the variance in clarity and 4% of the variance in individualization. These correlations are suggestive of the possibility that the CST factors, at least in part, are predictors of teaching behaviors. However, considering the number of statistical tests in the analysis, the findings must be interpreted with caution.
A canonical analysis was performed to further investigate the relationships between the two sets of variables. The CST factors were the six predictor variables, and the ORS behaviors were the nine criterion variables. Though none of the canonical correlation coefficients was significant at the predetermined .05 level, the first root was significant at the .08 level ($r = .50, \chi^2 = 69.30, df = 54$). This trend toward acceptable significance suggests that the predictor variables are at least in part responsible for some of the variance in the criterion variables.

Table 17
Correlation Matrix: CST-Factor Scores and ORS Teaching Dimensions

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Divine Fate</th>
<th>Need for Structure/Order</th>
<th>Need for People</th>
<th>Need to Help People</th>
<th>General Pessimism</th>
<th>Interpersonal Aggression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warmth</td>
<td>.08</td>
<td>.04</td>
<td>.24$^b$</td>
<td>.14</td>
<td>-.04</td>
<td>.01</td>
</tr>
<tr>
<td>Enthusiasm</td>
<td>-.02</td>
<td>.11</td>
<td>.21$^a$</td>
<td>.11</td>
<td>-.11</td>
<td>.03</td>
</tr>
<tr>
<td>Clarity</td>
<td>.06</td>
<td>.18</td>
<td>.13</td>
<td>.25$^b$</td>
<td>-.07</td>
<td>-.08</td>
</tr>
<tr>
<td>Variety</td>
<td>.02</td>
<td>-.07</td>
<td>-.03</td>
<td>.06</td>
<td>.02</td>
<td>.07</td>
</tr>
<tr>
<td>Individualization</td>
<td>.09</td>
<td>.04</td>
<td>-.03</td>
<td>.19$^a$</td>
<td>-.07</td>
<td>-.13</td>
</tr>
<tr>
<td>Feedback</td>
<td>-.15</td>
<td>.04</td>
<td>.19$^a$</td>
<td>.16</td>
<td>-.18</td>
<td>.12</td>
</tr>
<tr>
<td>Cognitive Demand</td>
<td>.22$^a$</td>
<td>.15</td>
<td>.01</td>
<td>.19$^a$</td>
<td>-.03</td>
<td>-.20$^a$</td>
</tr>
<tr>
<td>Freedom</td>
<td>.13</td>
<td>.02</td>
<td>-.02</td>
<td>.02</td>
<td>.05</td>
<td>-.01</td>
</tr>
<tr>
<td>On-Task Activity</td>
<td>-.05</td>
<td>.11</td>
<td>.09</td>
<td>-.06</td>
<td>-.02</td>
<td>.01</td>
</tr>
</tbody>
</table>

$^a p < .05$  $^b p < .01$
To explore the relationships further, the nine teaching behavior dimensions were subjected to a principal-components factor analysis in order to reduce the number of criterion variables. The factor analysis was justified further by the interrelatedness of the teaching behaviors as was shown earlier by the high number of significant zero-order correlations (Table 17).

The initial factor solution extracted nine factors. The eigenvalues, percents of variance, and cumulative percents of variance for each factor are shown in Table 18. Using the latent root criterion (eigenvalue greater than one), for determining the significance of the factors, the first two factors were retained, the last seven were considered insignificant and disregarded for interpretation and for further analysis.

Table 19 shows the factor loadings and the final communality estimates for each of the nine teaching behaviors on both of the initial, unrotated factors. On the first factor, all nine behaviors loaded significantly with loadings ranging from .56 for cognitive demand to .86 for clarity. On the second factor, cognitive demand, feedback, enthusiasm, and freedom loaded significantly with loadings ranging from .38 for freedom to .60 for cognitive demand. The ambiguities presented by these unrotated factors, however, made interpretation of the factors difficult. Hence, a varimax rotation of the factor matrix was done to achieve simpler and more meaningful patterns.
Table 18
Eigenvalues and Percent of Variance
Explained From Initial Factor Solution

<table>
<thead>
<tr>
<th>Factor Extracted</th>
<th>Eigenvalue</th>
<th>Percent of Variance</th>
<th>Cumulative Percent of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4.383820</td>
<td>48.7</td>
<td>48.7</td>
</tr>
<tr>
<td>2</td>
<td>1.126314</td>
<td>12.5</td>
<td>61.2</td>
</tr>
<tr>
<td>3</td>
<td>0.773982</td>
<td>8.6</td>
<td>69.8</td>
</tr>
<tr>
<td>4</td>
<td>0.733919</td>
<td>8.2</td>
<td>78.0</td>
</tr>
<tr>
<td>5</td>
<td>0.602800</td>
<td>6.7</td>
<td>84.7</td>
</tr>
<tr>
<td>6</td>
<td>0.544237</td>
<td>6.0</td>
<td>90.7</td>
</tr>
<tr>
<td>7</td>
<td>0.397744</td>
<td>4.4</td>
<td>95.1</td>
</tr>
<tr>
<td>8</td>
<td>0.227467</td>
<td>2.5</td>
<td>97.7</td>
</tr>
<tr>
<td>9</td>
<td>0.209717</td>
<td>2.3</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 20 presents the structure matrix for the varimax rotated factor solution. Significant positive loadings on factor one were achieved by enthusiasm (.82), feedback (.80), warmth (.74), clarity (.64), and on-task activity (.54). Cognitive demand (.82), freedom (.69), individualization (.65), variety (.66), and clarity loaded (.58) significantly and positively on factor two. After examination of the factor patterns for underlying constructs, the investigator labeled factor one Teaching Style and factor two Teaching Technique.
<table>
<thead>
<tr>
<th>ORS Variable</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Communality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warmth</td>
<td>.74</td>
<td>-.29</td>
<td>.63</td>
</tr>
<tr>
<td>Enthusiasm</td>
<td>.76</td>
<td>-.39</td>
<td>.72</td>
</tr>
<tr>
<td>Clarity</td>
<td>.86</td>
<td>-.01</td>
<td>.74</td>
</tr>
<tr>
<td>Variety</td>
<td>.73</td>
<td>.23</td>
<td>.58</td>
</tr>
<tr>
<td>Individualization</td>
<td>.73</td>
<td>.22</td>
<td>.57</td>
</tr>
<tr>
<td>Feedback</td>
<td>.60</td>
<td>-.53</td>
<td>.65</td>
</tr>
<tr>
<td>Cognitive Demand</td>
<td>.56</td>
<td>.60</td>
<td>.68</td>
</tr>
<tr>
<td>Freedom</td>
<td>.60</td>
<td>.38</td>
<td>.50</td>
</tr>
<tr>
<td>On-Task</td>
<td>.65</td>
<td>-.08</td>
<td>.43</td>
</tr>
<tr>
<td>ORS Variable</td>
<td>Factor 1 &quot;Teaching Style&quot;</td>
<td>Factor 2 &quot;Teaching Technique&quot;</td>
<td>Communality</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------</td>
<td>-------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Warmth</td>
<td>.74</td>
<td>.29</td>
<td>.63</td>
</tr>
<tr>
<td>Enthusiasm</td>
<td>.82</td>
<td>.23</td>
<td>.72</td>
</tr>
<tr>
<td>Clarity</td>
<td>.64</td>
<td>.58</td>
<td>.74</td>
</tr>
<tr>
<td>Variety</td>
<td>.38</td>
<td>.66</td>
<td>.58</td>
</tr>
<tr>
<td>Individualization</td>
<td>.39</td>
<td>.65</td>
<td>.57</td>
</tr>
<tr>
<td>Feedback</td>
<td>.80</td>
<td>.02</td>
<td>.65</td>
</tr>
<tr>
<td>Cognitive Demand</td>
<td>.01</td>
<td>.82</td>
<td>.68</td>
</tr>
<tr>
<td>Freedom</td>
<td>.18</td>
<td>.69</td>
<td>.50</td>
</tr>
<tr>
<td>On-Task Activity</td>
<td>.54</td>
<td>.38</td>
<td>.43</td>
</tr>
</tbody>
</table>

|                  | 2.88                      | 2.63                          | 5.51        |
| Eigenvalue       | 32.00                     | 29.22                         | 61.22       |
| Percent of Variance |               |                               |             |
Each of the teaching factors became the criterion variables for the computation of two separate simultaneous multiple regression correlations for the six CST variables. The multiple correlation for the CST variables in predicting the teaching factor of Teaching Style was significant ($R^2 = .14$, $F = 2.47$, $p = .01$). The CST variables that account for a significant amount of unique variance in teaching style are Need for People ($t = -2.47$, $p < .02$) and General Pessimism ($t = -1.95$, $p = .05$). The equation for the prediction of Teaching Style is as follows:

$$\text{Teaching Style} = -0.1575 \text{ Divine Fate Control} + 0.0397 \text{ Need for Structure and Order} + 0.0959 \text{ Need to Help People} + 0.2884 \text{ Need for People} + 0.2650 \text{ Interpersonal Aggression} - 0.2801 \text{ General Pessimism} - 0.9868$$

The multiple correlation for the CST variables in predicting the teaching factor of Teaching Technique was not statistically significant.

Because the zero-order correlation between Divine Fate Control, the measure of conceptual systems, and cognitive demand was found to be significant and positive, a one-way analysis of variance was conducted with three levels of conceptual system as the independent variable and ratings on cognitive demand behavior as the dependent variable. The
means and standard deviations of the cognitive demand ratings by level of conceptual system are presented in Table 21.

Table 21

<table>
<thead>
<tr>
<th>System</th>
<th>Cognitive Demand</th>
<th>N</th>
<th>X</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Scorers (Abstract)</td>
<td></td>
<td>11</td>
<td>2.36</td>
<td>1.21</td>
</tr>
<tr>
<td>Middle Scorers</td>
<td></td>
<td>60</td>
<td>2.43</td>
<td>1.43</td>
</tr>
<tr>
<td>High Scorers (Concrete)</td>
<td></td>
<td>38</td>
<td>3.13</td>
<td>1.51</td>
</tr>
</tbody>
</table>

The analysis showed a significant difference in means. Table 22 summarizes the results. A Duncan's Multiple Range Test was used to determine the means between which significant differences existed. It was found that the mean rating on cognitive demand for the high scorers (concrete teachers) was significantly higher than those for the other two groups. The results revealed that the middle scorers and the low scorers did not differ significantly from each other on cognitive demand ratings.
Table 22
Analysis of Variance of
Cognitive Demand Ratings
by Level of Divine Fate
Control

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divine Fate</td>
<td>2</td>
<td>6.24</td>
<td>3.01</td>
<td>.05</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Discussion

On the basis of the scores on the CST factors, conceptual system levels, and ratings on the ORS teaching dimensions, the student teachers in this sample can be described. As a group, they tended to express a need to be helpers, had low amounts of aggressive feelings toward others, and were not generally pessimistic. They were mostly concrete thinkers rather than abstract thinkers. As teachers of children, they were enthusiastic and warm, clear in what they expected of the children, and able to use variety and individualization in their approaches with the children. They allowed children freedom and independence and remained on-task. Their expectations of high intellectual activity from the children were on the low end of the cognitive demand continuum.

It was found that some of the CST factors are correlated, though the relationships should be viewed with caution because of the possibility of spuriousness. The results indicate
that those who need others also want to be helpers of others. This relationship seems to be supportive of intuition. It is reasonable to assume that those who choose professions where helping others is the primary concern are likely to receive personal benefits from the interactions with others. Helping others brings them into contact with others, thereby meeting a personal need.

Student teachers who were found to have high levels of interpersonal aggression were also likely to be pessimistic. This can be explained in the context of trust of others and of self. Erikson in his theory of psychosocial development (1950) described the crisis of the first stage of development as trust versus mistrust. In this stage, individuals primarily in infancy, but in later stages as well, are learning whether or not they can trust the environment and those in it to provide for physical and emotional needs. The individual also is establishing a sense of the self that has control over the actions of others. The resolution of the crisis of this stage falls along a continuum of trust. Those in the lower region of the continuum have a general sense of mistrust. It seems as if the feelings of hostility toward others and sense of general pessimism about self and the environment would be co-existent characteristics of those who mistrust.

A negative correlation was found between Need to Help People and Interpersonal Aggression. This can be explained
intuitively. It is likely that those who wish to be helpers would have lower feelings of hostility toward others. They wish to help others, not hurt them.

The correlations between Need to Help People and Divine Fate Control and Need for People and Divine Fate Control, though significant, are of a low magnitude and are difficult to explain.

The teaching behaviors that were rated on the ORS appear to be highly interrelated lending support to the notion that these behaviors co-exist in effective teachers. Brophy and Evertson (1976) described teaching as a complex set of behaviors that interact in teaching and in classroom management. It was assumed in this investigation that the composite of behaviors examined is definitive of effective teaching in preschool education.

A further explanation of the interrelatedness of the behaviors may lie in the fact that the behavioral dimensions are high inference constructs that are not mutually exclusive. Warmth in a teacher, for example, is exemplified by behaviors that may also be indicative of enthusiasm and clarity of communication. Variety and individualization seem to have behaviors in common. Clarity and feedback both include elements of being able to effectively communicate.

The factors that emerged from the factor analysis of the nine teaching dimensions lend further support to this idea. The behaviors of enthusiasm, feedback, warmth, and clarity seem to fit
together to produce a factor that was labeled Teaching Style, while those of cognitive demand, variety, individualization, freedom, and clarity seem to work together in a factor labeled Teaching Technique.

Beller (1970) used these two labels when he theorized hypothetical constructs distinguishing two aspects of teacher behavior. He conceptualized teacher style as being the "unplanned" aspect of teaching that is associated with belief systems and personality characteristics of teachers influential of the degree of warmth, relaxation, intimacy, sensitivity, and friendliness shown by the teacher toward the children. Teaching technique was described by Beller as being the "planned" strategies and methods of teaching such as group size, individualization, amount of structure, type of instruction, and amount of child control over materials and content. The behaviors that loaded on each factor in this investigation seem to be similar to those described by Beller. Hence, the factors are indicative of empirical evidence for Beller's hypothetical constructs.

Since the two factors are orthogonal, it can be assumed that a given teacher could be rated highly on both factors or could be high on one while low on the other. This can be illustrated in a 2 x 2 matrix form.
The effective teacher, as defined in this study, is one who rates highly on Teaching Style and on Teaching Technique and would be placed in the lower right quadrant. These teachers could be characterized as being warm and enthusiastic about what they do but also communicate to the children that they have clear expectations of them. This teacher would also implement activities that are varied and individually applied according to the needs of each child, would facilitate independence, expect the highest optimal amount of cognitive activity from the children, and would communicate clearly.
The multiple correlation statistics indicate that the CST factors can account for a significant portion of the variance in Teaching Style but not Teaching Technique. Specifically, Need for People and General Pessimism each contributed a significant amount of unique variance in Teaching Style. Teachers who expressed a need for people and lack of pessimism were likely to be high on Teaching Style.

It may be that Teaching Style is related more strongly to these personality characteristics than Teaching Technique, while Teaching Technique is a result of training and experience in the classroom. Teacher education programs tend to focus on the techniques of teaching. Courses in planning lessons and curriculum, writing objectives, writing tests, and assessing achievement are prevalent in teacher education programs. Rarely are courses offered to teachers-in-training that are devoted to the development of the affect behaviors of teachers.

To return to the Dunkin and Biddle model used for the conceptual framework of this study, the Teaching Style and the Teaching Techniques of the teacher both are behavior variables that fall into the class of process variables. The personality factors as measured by the CST were the presage variables found to be related to Teaching Style but not to Teaching Technique in this investigation. Untested in this
investigation is a further hypothesis that teacher education programs are influential upon Teaching Technique. A further research question might be posed: Can teacher education programs influence the development of Teaching Style as well as Teaching Technique? Illustrated in Figure 3 are these presage-process relationships. The solid-line indicates the relationship empirically supported by the present investigation. The broken lines present hypothesized, though untested relationships.

![Diagram](Image)

**Figure 3**

Relationships Between Presage and Process Variables

The investigator explored further the correlation between Divine Fate Control, the factor score determining abstractness or concreteness of the subject's conceptual system, and cognitive demand behaviors. The finding that more concrete preschool student teachers were demanding from the children
higher levels of cognition is in concert with conceptual systems theory. Fairly clearly established in the review of literature on cognitive demand is the fact that the more appropriate levels of cognitive demand for preschool children are those at the lower end of the continuum. It may be assumed, then, that those student teachers, who were demanding behaviors at the higher levels were not appropriately adapting to the developmental levels of preschool children. In conceptual systems theory, concrete persons are more rigid and resistant to change, while abstract persons are flexible in their behavior and more adaptable to variations in the environment (Harvey et al., 1961). It is on this behavior dimension only, however, that student teachers differed by conceptual system level.

Question Five

Are there any recurring themes or classifications that can be found in essays written by this sample of student teachers about their families in their growing up years?

Essays were written by each of the 112 subjects as part of their responses on the Background Information Questionnaire. Four of the essays are presented in their entirety in Appendix C. The essays varied in length from a few lines to two full handwritten pages.

Each essay was read by the investigator for ideas and themes that were repeatedly referred to by the subjects. A
list of recurring themes was kept during the first reading of the essays. Topics or themes to which the student teachers referred frequently were:

- Family life that was enjoyable, good, pleasurable, fun
- Feelings of closeness, love, and/or emotional support among family members, or conversely, a lack of these emotional bonds
- Specific relationships between parents and subject or parents and siblings
- Sibling closeness or rivalry
- Fond memories of family interactions and activities
- Changes in family closeness during childhood due to disruptive events
- Conflict, separation, or divorce of parents
- Parental absence
- Sickness, death, or handicapping conditions of the subject or family members
- Parental roles
- Independence and freedom of members or interdependence of members
- Discipline techniques of parents
- Family vacations and activities
- Changes of residence
- Work and responsibilities of children in the home
- Relationships with extended family
- Adequacy or inadequacy of family finances
- Family expectations and support for education
- Family emphasis on religion and religious activities
Dissatisfaction with self as a child

Rebellion of subject or siblings

In answer to question five, recurring themes could be identified in the essays. The themes were integrated by classifying them into six categories:

1) Positive/negative feelings and memories about early family life

2) Positive/negative affect within the family, between family members, and with extended family

3) Stressor events that precipitated individual or family crisis

4) Discipline and parent-child relationships

5) Family activities

6) Family values

The following are excerpts from some of the essays that illustrate the meaning of each category:

1) Feelings/Memories--
"As I think back, it seems we always had a lot of fun together . . ."

2) Affect--
"I always loved being protected by my older brothers. I remember how thrilled I was when they were home from ________ on leave and they'd dress up in their uniforms and drop my sister and me off at school."

3) Stressor events--
"During my early years our family was very typical. When my mother became ill there were some drastic changes. During the three years of her illness our family was very disorganized and there were no normal routines . . . After my mother died this confusion continued for about one and a half years until I learned to cook and care for the house. Father had a rough period and my sister and I had many
'conflicts' over responsibilities. My father went to a far extreme in strictly disciplining me between about (age) 13 and 17. Now the family situation is a very positive normal one."

4) Discipline/Parent-child relationships--
"In my younger years my parents (especially father) were very strict with rules and regulations. However, as the years went on, and with the birth of a somewhat spoiled younger brother the rules and harsh punishment weren't as bad. I used to be afraid of my father, and when I was in trouble--petrified."

5) Family activities--
"We did lots of recreational activities together. We went ice skating in the winter and my parents also participated. Since we own a cottage in __________, my family spent much time together . . . there. Almost every weekend in the summer was spent there since I was two. Our family enjoyed being with each other and doing things together."

6) Family values--
"My family is very religious which is why there is no divorce due to the Catholic religion. This religion was an important factor in my life as I attended Catholic grade and high school."

The categories are not mutually exclusive. For example, the excerpt, " . . . my grandmother died when I was ten, whom I was very close to", illustrates a phrase with meaning that was categorized as both stressor event and affect.

Question Six

Can the essays be classified according to parenting styles and discipline similar to those family types outlined by Harvey (1966)?

Parenting styles have been hypothesized to be instrumental in development of conceptual systems. Early
socialization experiences in the family have been characterized (Harvey, 1966) for each of the four conceptual systems. System I individuals were raised by authoritarian parents who set and maintained strict rules, punished the child when rules were broken, and rewarded conformity to the expectations of those in authority. System II individuals had parents who were inconsistent and unpredictable in their rules and administration of punishment. The parents of these individuals were at some times laissez faire and at others, strict. System III individuals were raised in family situations in which they were indulged and given little responsibility. Children developed dependency behaviors that were manipulative and eventually resulted in gaining control over the parents. System IV individuals were reared by parents who valued diversity, self-discipline, and democratic rather than autocratic parenting styles. Children were given decision-making power in the family and were encouraged to participate in rule-making and questioning.

From the essays, themes of parental discipline similar to those hypothesized by Harvey (1966) emerged. However, clear-cut assignments into one of the four typologies could not always be made. Excerpts from essays are given to illustrate each of the typologies.

System I:

"My mother was the one who enforced discipline and is a firm believer in spanking and using physical violence as a means of punishment."
"I'm glad my parents were strict but at times I think they could have been a little more lenient. I don't think my dad knew how to handle kids very well. I believe he tried to make us fear him rather than tried to be a supportive parent."

"My father was very strict, but one can see why with six children."

System II:

"My father was the one in charge at our household. He laid down the rules, and we followed them or didn't follow them. My brother, __________, didn't want to follow rules of any kind, and he ran away from home and quit school when he was seventeen."

System III:

"I also was sort of spoiled because I got just about everything I wanted, and did what I wanted, all within limits. My brothers were treated in the same manner that I was."

"Since I was the youngest, I tended to be spoiled and was also very protected by my parents."

"My brother and sister moved out and married when I was five or six years old and so it was like having three sets of parents in a way. I was terribly spoiled, even when they began having their own children."

System IV:

"Whenever I did something wrong I was never yelled at or punished. My dad would sit me down and explain what I did was wrong and then he would tell me that he wasn't mad at me, just at my behavior. I feel this was super as I never feared him. I really respected him for taking the time to explain things to me."

"The atmosphere was always one of relaxation, negotiation, and individuality. The best opportunities for each individual are always considered, and encouraging development in each other has always been important."

"My parents trust me to make my own decisions. They have shown that they believe me to be a responsible person."
The following excerpts are illustrative of those that because of ambiguity could not be classified clearly into one of the four typologies:

"My parents were firm believers in discipline but always allowed us to express our own opinions . . . They did, however, spank us, which I disagree with as a major form of discipline."

"I guess you could say I grew up in a strict but lenient home life, and I think it has helped me out a lot and will continue to help me in the future."

"Our parents set the rules, and we were (usually!) happy to do as they said, if not immediately, then, later as we looked back on the situation."

The investigator concluded that though some of the essays could be classified into one of the four family typologies suggested by Harvey et al., others could not without an opportunity to query subjects further as to the meaning of their statements.

Question Seven

What theory can be articulated regarding the early family life of this sample of student teachers?

The essays, though brief and solicited, provided a glimpse into the perceptions of the student teachers of their early family lives. Though themes recurred they reflected a diversity of lifestyles. Overall satisfaction with their family years ranged from an extreme of joy and total happiness with the life that they had known in their family to the other extreme of anger and
displeasure with their family lives. Most expressed relative satisfaction and described their home life as "good", "enjoyable", "close", "happy", and "pleasant".

Excerpts from extreme viewpoints follow:

"We are now a very close-knit family--they're my favorite people to go places and do things with. I know that no matter what I do or how I feel they will always love and support me--they will always be there for me. What a terrific sense of security!!"

"My family has to be the greatest. I wouldn't change anything that I experienced with my family."

"It was a difficult family to grow up in. My father and mother argued constantly."

"My family has never been close. My parents have been married for ________ years and all that I can remember is hearing and seeing them fight . . . I can honestly say that I missed out on a lot--mostly love. I was never shown affection during my childhood and this in turn has affected me. I know that I was loved, but I was never shown it. I was given it by being physically cared for, but there was never any emotional bond . . . I often envy the close-knit families that I see, but I have learned so much. I am aware of everything that went on in my family, the effect that it has had on me, and what I learned from it. I know that I will have a very loving family of my own someday--then I won't need to envy anyone else's family."

Those who were relatively satisfied stated:

"Overall, I enjoyed and love my family despite the average ups and downs."

"Growing up in my family was OK. It could have been better."

"My family always had a lot of fun together. We fought all the time, almost everyday, but no one stayed mad for long."
"It was hard, but nice. Almost always hectic or rowdy, but respect of others and appreciation of those things we were able to have were qualities all of us (children) have."

siblings were mentioned often by the subjects. They seemed to perceive that their relationships with their siblings were of importance in determining the quality of their lives.

"My brothers and I were very close and still are, except that I always thought I had to compete with my older brother."

"Having so many brothers and sisters was nice because I was never lonely."

"When my little sister was born I was ten years old, and she is the best thing that ever happened to me. This is when I realized that I could be close to someone. She and I are very close and open with one another."

"My older sisters were kind of live-in babysitters for the other three 'girls' (as we were always called). _______ 's leaving for college was one of the bigger traumas of my preschool years."

Frequently mentioned were events that caused disruption in their lives. Illness or death of family members, divorce or separation of parents, residence changes, and financial difficulties were examples.

"Many things occurred in our family as I grew up. My father had (an illness) twice so my mother had to return to work."

"My family was always very close and we are now beginning to not spend as much time together since my father died a year ago."

"My elder sister was killed in a tragic automobile accident right after my _______ birthday. It was a hard crisis to deal with and at times it still affects me."
"... when I was in between my __________ and __________ year of high school my parents started having a lot of problems and then they got divorced. It was really a bad time and I had a lot of troubles."

"After my parents separated I can vaguely remember a period of adjusting to that and becoming that much closer with my siblings and mother."

"I moved in the middle of __________ grade. At this new school I was the new kid, and all new kids seemed to get teased. I know this affected me especially toward my relationships with boys. My family was very helpful. It (teasing) finally went away ... "

"I . . . felt very guilty that I needed braces since it came at a time when we had little extra cash."

Family activities were mentioned often by the subjects. Work and play at home, family vacations, and participation at community events were among those mentioned.

"Our family has always lived on a farm, which I feel has some benefits and drawbacks. We've always had to work very hard for what we have and because of it are very appreciative of our assets."

"We've enjoyed homespun entertainment such as making things at home and working with mother in the kitchen."

"My family has always spent vacations together at the __________ and the __________. We have also travelled to Florida. I have always enjoyed family vacations but now that my sister and I are older we have not had too much opportunity to spend with my parents. My family are also very active church goers."

"As we became involved in outside activities our whole family was at family events, performances and were always supportive of our efforts. We continued to go to church, joined church groups (youth group and choir), and kept active in the running of the church."

Family values centering around religion, education, and morals were themes that appeared.

"We were brought up in a strong Baptist home--we learned what was right and wrong morally, which was strongly enforced."
"... our parents checked our homework, let us find that school was fun and very worthwhile."

"I grew up with strong feelings of right and wrong and respect for others."

The diversity presented in the essays makes a comprehensive theory of the family life experiences of the student teachers in this sample difficult to articulate. In general, the subjects seemed to value close and loving family lives, though many expressed the fact that they had not experienced their ideal. However, most seemed satisfied with the lives that they had had with their families, even when not ideal. Many made mention of disruptions in their lives that caused changes in the family interactions or in themselves. Sibling relationships were perceived as important by the subjects as was the type of discipline and punishment imposed upon them by their parents.

Discussion

Recurring themes were discovered in the essays written by the subjects about growing up in their families. However, it should be noted that the topics mentioned were similar to those which had been addressed in previous pages of the Background Information Questionnaire. The subjects may have been influenced to discuss those topics rather than others just as prevalent. Because of the open-endedness of the essays, it can be assumed, however, that the subjects each focused on one or more areas about which they felt that they had
more to say than they had indicated in other sections of the questionnaire.

Some of the essays contained statements that were vague, ambiguous, or ambivalent, and in these cases it was difficult to obtain an appreciation of the full meaning of them. The methodology could be strengthened by following up the written documents with interviews in which the investigator queried the subjects and probed for explanations that would give deeper, richer meaning.

A beginning theory about the family background of these student teachers was developed. In general subjects valued close family lives and were fairly satisfied with their own. They mentioned disruptive events, discussed parental discipline and punishment techniques, and placed an importance on sibling relationships.

Parallels between these descriptions and those of Rosen's (1972) can be drawn. Rosen categorized autobiographical statements made by subjects judged to be effective with several different age levels of children. She found that those most effective with preschool children made frequent mention of their close, supportive families. Those best with school aged children did not discuss family lives in great detail, but instead talked of instructing and organizing young children, taking on responsibilities, being independent, and feeling a need for achievement. Student teachers who were best with older children mentioned
cultural and intellectual diversity in the home, a love of learning, and peer relationships.

The essays of these student teachers could be analyzed for similar themes categorized by the academic major of the subjects. One might assume that those students majoring in child development prefer teaching preschool children. Those in elementary education prefer working with school-aged children, and those in home economics education are most satisfied working with older children.

Essays written by abstract subjects could be compared to essays written by concrete subjects in order to search for differences that may be related to conceptual system development.

Summary of Chapter

This study investigated the relationships between conceptual systems and factor scores on the Conceptual Systems Test and teaching behaviors as rated on the Observer Rating Scales of student teachers in preschool laboratory settings. One-hundred-twelve subjects who were students either at The Ohio State University or Mansfield State College participated.

The subjects at the two locations were comparable on age, grade point average, sex, and conceptual system levels. Their mean scores on Divine Fate Control, Need for People, Need for Structure and Order, General Pessimism, warmth, enthusiasm, variety, individualization, feedback, freedom,
and on-task activity were comparable. Differences by location were found in student status, major, Need to Help People, Interpersonal Aggression, clarity, and cognitive demand.

Conceptual system level was shown to have no effect on the teaching behaviors of variety, individualization, and freedom. The nine teaching behaviors were found to be highly interrelated. Correlational techniques indicated some relationship between the CST factor scores and the teaching behaviors.

The teaching behaviors loaded significantly on two factors, Teaching Style and Teaching Technique. The CST factors predicted variance in Teaching Style with Need for People and General Pessimism accounting for a significant amount of the variance.

Essays written by the subjects about their family lives were analyzed for content by the constant comparative method. Themes recurring in the essays were positive and negative memories about early family life; positive and negative affect within the family, between family members, and with extended family; stressor events producing family crisis and change; discipline and parent-child relationships, family activities; and family values.

Some essays were categorized by parenting styles determinant of conceptual system level development while others could not be because of ambiguity. The early family
lives of this sample of student teachers was characterized as having close, supportive family interactions, emphasis on family activities, valuing sibling relationships, and having disruptive events that caused stress and change in the family.
CHAPTER V

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

Summary

The purpose in this investigation was to search for explanations of the teaching behaviors of student teachers with preschool children. More specifically, the purposes of the study were two-fold: 1) to determine relationships between the student teachers' conceptual systems and their teaching behaviors in laboratory school practicums with preschool children and 2) to examine their perspectives of their early family life in order to describe these experiences and to formulate research questions and hypotheses about the family backgrounds of those who choose to teach.

The data analyzed for the study were collected as part of the Preschool Teacher Competency Project at The Ohio State University, funded by the College of Agriculture and Home Economics Small Grants Program. Jean D. Dickerscheid of the Department of Family Relations and Human Development was the principal investigator for the project which began in July of 1980. This investigator served as an assistant throughout all phases of the project. The purpose of the overall study was to find relationships between personality variables, selected background characteristics, demographic variables, and teaching behaviors of student teachers in two preschool settings.
Subjects

The subjects were 112 student teachers enrolled in beginning practicum courses at two college/university preschool laboratory schools, the Laboratory for Child and Family Studies at The Ohio State University (OSU) in Columbus, Ohio and the Early Childhood Education Center at Mansfield State College (MSC) in Mansfield, Pennsylvania. Sixty-four subjects were students at OSU, while 48 were at MSC.

The subjects had a mean age of 21.31 years and a mean grade point average of 2.87 out of a 4.00. The largest proportion of the sample was of junior or senior student status. About half were child development and family studies majors, with the rest being elementary education majors and home economics education majors. Ninety-seven percent of the subjects were female.

At each institution the students were enrolled in a course that included a practicum for which they spent approximately 30 hours during the term with preschool children. Their teaching experiences included both large and small group supervision, indoor as well as outdoor play, transition activities, and routine activities such as toileting and snacks. At each institution the practicum was accompanied by classroom lecture-discussion sessions, and the student teachers were periodically evaluated by head teachers and by course instructors. The practicum settings were judged by the investigators to be similar in program philosophy, curriculum, teacher-child ratio, and group composition. Both laboratory schools are housed in home economics programs and are used for teacher education, observation of normal child development, and research.
Design

The study was designed with both quantitative and qualitative components. A quasi-experimental correlational design was used for the quantitative element. Relationships between factor scores obtained from student responses on a paper-and-pencil instrument, The Conceptual Systems Test, and ratings on the Observer Rating Scales of selected teaching behaviors in the subjects were calculated and analyzed. For the qualitative component, open-ended essays written by the student teachers about their early experiences in their families were analyzed for their content by the constant comparative method of qualitative analysis. The essays, along with demographic data used to describe the subjects, were obtained from student responses to the Background Information Questionnaire.

Procedures

The procedures for data collection were similar at each research site. Students were solicited for participation in the study during the first class meeting of the practicum by research assistants. Participation in the study was voluntary, and subjects were informed of the confidentiality of the information that they were being asked to share. The Background Information Questionnaire was completed by the subjects in the first week of the course. The Conceptual Systems Test was administered to the subjects during the third week. The subjects were observed for a 20 minute period while teaching preschool children during the last two weeks of the practicum by trained observers who rated teaching behaviors found on the Observer Rating Scales.
The independent variables for the study were the scores on six factors obtained from the Conceptual Systems Test. The factors were Divine Fate Control, Need for Structure and Order, Need to Help People, Interpersonal Aggression, and General Pessimism. The conceptual system levels of the students, either abstract or concrete, were treated also as independent variables. The dependent variables were the ratings of the teaching dimensions of warmth, enthusiasm, clarity, variety, individualization, feedback, cognitive demand, freedom, and on-task activity as defined on the Observer Rating Scales.

Data Analysis

Demographic variables of age, grade-point average, student status, major, and sex were used to describe the sample and to determine similarities and differences of the subjects by location. Frequencies, means, and standard deviations for these variables were computed. The mean age and mean grade-point average of subjects at each location were compared by using independent-samples $t$-tests. Chi-square analysis was used to compare the subjects by location on sex, student status, and major. The subjects were compared by location on each of the 15 metric study variables (the CST factor scores and the behavior ratings) by using independent-samples $t$-tests. The frequencies of conceptual system levels of the subjects at each location were compared using chi-square analysis.

The relationships between the factor scores on the Conceptual Systems Test were determined by use of Pearson product-
moment correlation tests. Similar correlations were computed to determine the relationships between the nine behavior dimension ratings on the Observer Rating Scales.

To determine the effect of abstractness and concreteness of conceptual system on the teaching behaviors of individualization, variety and freedom, three independent-samples t-tests of the means of the three behaviors at each of the two levels of conceptual system were conducted. To test the effect of the extremes of conceptual system functioning and to test for the possibility of curvilinearity, three levels of conceptual system served as the independent variable and mean ratings on each of the behaviors of individualization, variety, and freedom were dependent variables in three separate one-way analyses of variance.

Several statistical procedures were used to determine the relationships between the factor scores on the CST and the teaching behaviors. Pearson-product-moment correlations were conducted between each of the factors and each of the teaching behaviors. A canonical correlational analysis with the factor scores as the predictor variables and the behavior ratings as the criterion variables was also made.

To reduce the number of dependent variables, a principal-components factor analysis was conducted of the nine teaching behavior ratings. The factors were subjected
to a varimax rotation. The CST factors were regressed on each of the two resulting teaching factors in simultaneous multiple regressions.

To explore further a significant relationship that was found between conceptual system and the teaching behavior of cognitive demand, three levels of conceptual system served as the independent variable and the cognitive demand rating was the dependent variable in a one-way analysis of variance. A post-hoc Duncan's Multiple Range Test was the procedure used to determine which mean was significantly different from the others.

The essays were read for qualitative content by use of the constant comparative method. Recurring themes that emerged were condensed into six categories. Essays were categorized into the four parenting style typologies determinant of the four levels of conceptual functioning. A beginning description of the perceptions of the subjects of their family life was developed.

**Findings**

**Description of subjects on study variables.** On the basis of conceptual system levels, CST factor scores, and behavior ratings, the 112 subjects generally tended to express a need to be helpers, had low amounts of
aggressive feelings toward others, and were generally optimistic. They were mostly concrete thinkers rather than abstract thinkers. As teachers of children, they were enthusiastic and warm, clear in communicating what they expected from the children, and were able to use variety and individualization in their teaching methods with the children. They encouraged freedom and independence in the children and remained on-task.

**Hypotheses.** Hypotheses were not supported in this sample of student teachers. Student teachers with abstract conceptual systems were not rated more highly on the teaching behaviors of individualization, variety, and freedom than those with concrete conceptual systems.

When a statistically significant relationship was found between conceptual system level and cognitive demand behaviors, it was further explored. Findings indicated that student teachers with concrete conceptual systems were rated more highly on the cognitive demand teaching dimension than those with abstract conceptual systems.

**Research questions.** Significant correlations, though of low magnitude, were found between some of the CST factors. Found to be related positively were Need for People and Need to Help.
People, Interpersonal Aggression and General Pessimism, Need to Help People and Divine Fate Control, and Need for People and Divine Fate Control. An inverse relationship was found between Need to Help People and Interpersonal Aggression. The nine teacher behavior dimensions were found to be highly interrelated.

A canonical variate analysis of the correlation between the set of CST factors as predictor variables and the set of nine teaching behaviors as criterion variables showed a trend toward statistical significance. This finding, coupled with the finding of eight statistically significant zero-order correlations between the CST factors and the teaching behaviors, gave evidence of relationships between the two sets of variables and was used as justification for further statistical analysis.

The teaching behaviors could be separated into two factors, Teaching Style and Teaching Technique. The CST factors were found to account for 14% of the variance in Teaching Style but none of the variance in Teaching Technique. CST factors contributing significant proportions of unique variance to Teaching Style were Need for People and General Pessimism.

The essays revealed recurring themes categorized as feelings and memories associated with early family life, affect within the family unit and between specific members, stressor events causing family change, discipline and
parenting, activities, and values. Examples of the four types of parenting that were speculated by Harvey (1966) to be determinant of conceptual system development were found in the essays. Though the essays revealed a diversity of lifestyles, the subjects, in general, valued a close and loving family life, described events that caused disruption in their families, and perceived both sibling relationships and parental discipline as being important factors in their development.

Implications

Abstractness or concreteness of conceptual functioning in student teachers as measured by the Conceptual Systems Test did not affect their teaching behaviors with preschool children with the exception of the behaviors indicative of the cognitive demand dimension. The concrete student teachers and the abstract student teachers behaved similarly on the dimensions of warmth, enthusiasm, clarity, variety, individualization, feedback, freedom, and on-task activity. They differed only on the dimension of cognitive demand with concrete teachers expecting cognitive activity from the children at levels that may have been inappropriately high according to the literature. This finding implies that conceptual functioning, whether abstract or concrete, is not a general determinant of effective teaching behavior with preschool children, at least for student teachers.
Abstract functioning may not be the ideal in all life experiences and situations. Instead, other less differentiated and less integrated cognitive levels may be just as functional in meeting some environmental demands. Teaching young children may be an example of one of these situations for which abstractness is not a necessary prerequisite for success. It may be that preschool children, who developmentally are concrete in conceptual functioning, can be taught equally well by concrete teachers, whose preferred techniques of teaching may be well-matched with the learning style needs of the children, and by abstract teachers, who are able to be flexible in teaching styles and techniques.

Another possibility is that behaviors in student teachers are affected by variables other than conceptual systems, such as head teacher behaviors and evaluator expectations. The student teachers observed for this investigation may have been conforming their behaviors to what they perceived as being important and appropriate to their superiors rather than behaving as they would in teaching situations in which they were in charge. Hence, conceptual systems may be more influential upon behaviors of employed, experienced teachers than upon the behavior of teachers at earlier stages of teacher development.

The student teachers who were not pessimistic and expressed a need for people had warmer, more enthusiastic teaching styles than those without these characteristics.
This finding serves as empirical evidence for what has been intuitively believed. Those teachers with teaching styles varying in affect behaviors vary also in personality factors. Teacher educators and program administrators could make use of this knowledge in screening candidates for training and employment. If warm, enthusiastic teachers are desired, personality measures might be used to predict which candidates are most likely to exhibit those characteristics in their teaching styles. Additionally, training programs could focus on the teaching style dimension of teacher behavior in order to determine if these behaviors in teachers are influenced by training as well as by personality factors.

The same personality characteristics did not seem to influence the teaching techniques employed by the student teachers. What student teachers expect from the children and how they organize the classroom and plan materials apparently stem from variables that were not measured in the present study. These behaviors may be influenced to a greater degree by the teacher training program than by underlying personality differences among the teachers.

The collection of open-ended essays was shown to be a methodology effective in eliciting rich and meaningful qualitative data. Through the essays, the student teachers revealed themselves openly in describing the love, satisfaction, conflict, and stress associated with their memories
and perceptions of their early family lives. It was found in this investigation that data acquired by this method can be used to formulate research questions and hypotheses about the formative experiences of teachers.

Recommendations for Further Research

The following recommendations are made for further research:

1. A longitudinal study should be conducted to determine the stability of the ratings of the teaching dimensions. By following student teachers from their first practicums through their field placements and into their first jobs while rating their teaching behaviors at each point, information would be gained about the predictability of on-the-job performance from observations of performance as teachers-in-training. The differential effects of conceptual systems and the training programs on teaching style and teaching technique at each point in the development of teachers also could be assessed in this way.

2. A study to test the effect of conceptual functioning on behavior of teachers who are employed instead of those who are in training might yield different results than this study of student teachers. Conceptual systems of experienced
preschool teachers could be measured and observations of their teaching behaviors could be conducted to investigate relationships between these presage and process variables.

3. **Process-product research** should be done to establish more firmly the effectiveness of the behaviors described and measured by the ORS in producing the desired products of preschool teaching. Both cognitive and noncognitive measures of child development should be used to determine the products of the various teaching behaviors.

4. The essay data could be compared for differences in family experiences of subjects with abstract and subjects with concrete conceptual systems. Do abstract subjects describe their families differently than concrete subjects?

5. The essay data could be used to determine differences in family background that may be related to the teaching behaviors. Are there family characteristics of student teachers who rate highly on the Teaching Style factor that distinguish them from those who rate lower? Are there differences in family background related to the Teaching Technique factor?

6. Quantitative data supplied by the BIQ relative to family closeness, family stressor events, family
activities, and parental discipline and with teaching behaviors to determine relationships between the family data and the conceptual systems and teaching behaviors of the student teachers.
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Thompson, G. G. The social and emotional development of preschool children under two types of education programs. Psychology Monographs, 1944, 56, No. 5 (Whole No. 258).


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McDaniel, E. Personal communications, 1982.
APPENDIX A

Instruments
BACKGROUND INFORMATION QUESTIONNAIRE
BACKGROUND INFORMATION QUESTIONNAIRE

Directions: Please complete all questions on the following questionnaire as accurately as possible. The information you give will be held in confidence.

1. How many credit hours are you carrying this semester? ___ *2. Sex ___M ___F

3. What is your age as of today? ___Years

4. Place of Birth _________________________ City ___ State

*5. What is your current student status? (check one)
   (circle which)
   ___ Freshman ___ Special, Graduate/Undergraduate
   ___ Sophomore ___ Student
   ___ Junior ___ Graduate, non-degree student
   ___ Senior ___ Graduate student, Master's
       ___ Graduate student, Doctoral

*6. What is your current academic major? (check one)
   ___ Child and Family Services
   ___ Elementary Education, Early Childhood Education
   ___ Home Economics Education
   ___ Other, Please specify ____________________________
   ___ Undeclared

7. At what point in your life did you decide on the major indicated in question 6? (If you marked "undeclared" in 6, skip this question.)
   ___ Before high school
   ___ During high school
   ___ After high school but before entering college
   ___ During college

8. If you decided on this major during college, what was your student status when you declared/transferred into this major?
   ___ Freshman ___ 1st ___ 2nd Semester
   ___ Sophomore ___ 1st ___ 2nd Semester
   ___ Junior ___ 1st ___ 2nd Semester
   ___ Senior ___ 1st ___ 2nd Semester
   ___ Other, Please specify ____________________________

* Denotes items used for present investigation

174
9. Are you a transfer student from another college or university?
   ___ Yes
   ___ No

10. If you answered "yes" to question 9, what major were you pursuing at that college or university?

11. Are you a transfer student from another major - either within or outside of home economics - on this campus?
   ___ Yes
   ___ No

12. If you answered "yes" to question 11, from what major did you transfer?

13. What was the one most important factor that influenced you to choose the major you are currently pursuing?

14. What is your current cumulative grade point average?

15. How much experience had/have you had with children under the age of 18?

   Before entering your major   After entering your major
   ___ A lot
   ___ Some
   ___ A little
   ___ None

16. With which of the following age groups have you had most of this experience?

   Before entering your major   After entering your major
   ___ 0 - 2 years
   ___ 3 - 5 years
   ___ 6 - 11 years
   ___ 12 - 18 years
   ___ I have had no experience

* Denotes items used for present investigation.
17. If you have had experience with children, what was the nature of that experience? (Example: baby sitting, Sunday school teaching, teacher assistant, helping with younger children in the family, etc.)

18. What is your current marital status?

___ Single, never married
___ Married
___ Divorced, now single
___ Divorced, now remarried
___ Widowed, now single
___ Widowed, now remarried

19. Give the ages of any children you have.

NOTE: IN ANSWERING QUESTIONS 20 THROUGH 23, CONSIDER THE FAMILY THAT WAS YOUR PRIMARY FAMILY IN TERMS OF EMOTIONAL AND FINANCIAL SUPPORT DURING YOUR GROWING-UP YEARS. PLEASE READ AND FOLLOW INSTRUCTIONS CAREFULLY.

20. Describe your parents by filling in the table as follows:

First: In the Relationship column, place the letter preceding the following phrase that best describes your relationship to your mother and father:

A. Biological parent  D. Foster parent
B. Adoptive parent  E. Grandparent
C. Step-parent  F. Other, please specify

Second: In the Deceased column, if either parent is currently deceased, place an X.

Third: In the Age column, place the current age of each living parent or the age of each deceased parent at the time of death.
Fourth: In the Education column, place the letter preceding the following educational level that represents the highest educational level achieved by each of your primary parents:

A. Grade 8 or below  E. Some college
B. Grades 9-12       F. Bachelor's degree
C. High School Diploma G. Master's degree
D. High School Diploma H. Ph.D. degree
    plus post high school I. Professional degree
    training other than college

Fifth: In the Employment column, indicate your parents' current employment status by placing the letter preceding the following phrase that best describes this status:

A. Gainfully employed fulltime (more than 20 hours per week)
B. Gainfully employed parttime (20 hours or fewer per week)
C. Not employed
D. Retired
E. Not currently a member of my primary family—divorced, separated, deceased, other (circle which).

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<th>Deceased</th>
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<th>Education</th>
<th>Employment</th>
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<td>Father</td>
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21. Describe other members of your primary family who lived in your household during your growing-up years in the table below as follows:

First: In the Members column, list the given names of family members other than your parents. OMIT YOURSELF. List sisters first, brothers second, and others third.

Second: In the Relationship column, indicate their relationship to you, e.g., brother, step-sister, uncle, non-relative.
Third: In the Age column, list the current ages of each member listed. If any are deceased, list what their ages would have been today had they lived.

Fourth: In the Deceased column, indicate the age at which any members died.

Fifth: In the educational column, place the letter preceding the following phrase that best describes the highest current educational level achieved by each family member. If any members are deceased, list the highest level achieved at time of death.

A. Grade 5 and below  E. Some college
B. Grades 6 - 9  F. Bachelors's degree
C. Grades 10 - 12  G. Master's degree
D. Post high school training other than college
                           H. Ph.D. degree
                           I. Professional degree

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<th>Deceased</th>
<th>Education</th>
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</table>
22. What is your mother's current occupation? First, give her occupational title; second, describe exactly what she does; and third, tell by whom she is employed.

(1) __________________________________________
(2) __________________________________________
(3) __________________________________________

23. What is your father's current occupation? First, give his occupational title; second, describe exactly what he does; and third, tell by whom he is employed.

(1) __________________________________________
(2) __________________________________________
(3) __________________________________________

24. What is your current occupational status?

___A. Gainfully employed full-time (more than 20 hours per week)
___B. Gainfully employed part-time (20 hours or fewer per week)
___C. Not employed now but usually employed during summers
___D. Not employed
___E. Other, please specify _____________________________

25. If you are currently employed, first give your job title; second, describe exactly what you do; and third tell by whom you are employed.

(1) __________________________________________
(2) __________________________________________
(3) __________________________________________

26. Age Periods

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<td>a. Married</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>b. Divorced</td>
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</tr>
<tr>
<td>c. Divorced, both</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Divorced, mother</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Divorced, father</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Separated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Mother, widowed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Mother widowed and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>remarried</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>i. Father, widower</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>j. Father widower and</td>
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<td></td>
</tr>
<tr>
<td>remarried</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k. Parents never married</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>

Place the letter preceding the phrase below that best represents your parents' marital status at each of your various age periods indicated in the boxes above.

27. Age Periods

<table>
<thead>
<tr>
<th>Place of Residence</th>
<th>0-2</th>
<th>3-5</th>
<th>6-11</th>
<th>12-18</th>
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</thead>
<tbody>
<tr>
<td>a. Rural-farm:</td>
<td></td>
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<tr>
<td>b. Rural-non-farm:</td>
<td></td>
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</tr>
<tr>
<td>c. Town:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. City:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Suburb of a city</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Place the letter preceding the phrase below that best represents your place of residence at each of your various age periods indicated in the boxes above.

A. Rural-farm: Residing on 10 acres or more from which sales of crops, livestock or other farm products amounted to $50 or more in the previous calendar year or places of less than 10 acres from which sales of farm products amounted to $250 or more.

B. Rural-non-farm: fewer than 10 acres with less than $50 of income generated from crops, livestock or other farm products.

C. Town: population between 1000 and 50,000

D. City: population over 50,000

E. Suburb of a city

28. Age Periods

<table>
<thead>
<tr>
<th>Frequency of Moves</th>
<th>0-2</th>
<th>3-5</th>
<th>6-11</th>
<th>12-18</th>
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</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Identify the number of times your family changed its place of residence during each of your age periods indicated in the boxes above.
Place the letter preceding the phrase below that best represents your parents' employment status during each of your various age periods indicated in the boxes above.

If in a two-parent family:

A. Mother and Father gainfully employed full-time (more than 20 hours per week)
B. Father gainfully employed full-time; Mother gainfully employed part-time (20 hours or less per week)
C. Mother gainfully employed full-time (more than 20 hours per week); Father gainfully employed (20 hours per week)
D. Mother and Father gainfully employed part-time
E. Mother gainfully employed full-time; Father not gainfully employed
F. Father gainfully employed full-time; Mother not gainfully employed
G. Other. Please specify _____________________________

If in a single parent family:

H. Mother gainfully employed full-time (more than 20 hours per week)
I. Mother gainfully employed part-time (20 hours or less per week)
J. Mother not gainfully employed
K. Father gainfully employed full-time (more than 20 hours per week)
L. Father gainfully employed part-time (20 hours or less per week)
M. Father not gainfully employed
N. Other. Please specify _____________________________

<table>
<thead>
<tr>
<th>Parental Employment Status</th>
<th>0-2</th>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>
### 30. Source of Family Income

<table>
<thead>
<tr>
<th>Age Periods</th>
<th>0-2</th>
<th>3-5</th>
<th>6-11</th>
<th>12-18</th>
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</thead>
<tbody>
<tr>
<td>Family Income Adequacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Place the letter(s) preceding the phrase(s) below that best represents your family's source of income during each of your age periods indicated in the boxes above. You may have more than one letter in each age box.

A. Wages, hourly wages, piece work, weekly checks
B. Salary, monthly checks or semi-monthly checks
C. Profits and fees from a business or profession
D. Savings and investments earned and/or inherited by parent(s)
E. Private or public assistance
F. Pension (including Social Security)

### 31. Family Income Adequacy

<table>
<thead>
<tr>
<th>Age Periods</th>
<th>0-2</th>
<th>3-5</th>
<th>6-11</th>
<th>12-18</th>
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<tr>
<td>Family Income Adequacy</td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

Place the letter preceding the phrase below that best represents the feeling you have about the adequacy of your family's income at each of your age periods indicated in the boxes above.

A. Had plenty for whatever we wanted
B. Had enough for necessities plus a good many extras
C. Had enough for necessities plus a few extras
D. Had enough for necessities but no extras
E. Never had enough to make ends meet
### 32. Family Events

<table>
<thead>
<tr>
<th>Family Events</th>
<th>0-2</th>
<th>3-5</th>
<th>6-11</th>
<th>12-18</th>
</tr>
</thead>
</table>

Place the letter preceding the various family events listed below of all that occurred in each of your age periods in the boxes above. You may have several letters in one or more of your age period boxes and you may have repeats of a given letter within any of your age period boxes.

- A. Birth of a sibling
- B. Death of a sibling
- C. Death of a parent
- D. Death of a grandparent
- E. Death of a close relative/family friend
- F. Divorce of parent
- G. Remarriage of a parent
- H. Unemployment of parent(s)
- I. Change of job by parent
- J. Mother took first job or returned to school for first time
- K. Sibling moved out of home
- L. Relative/friend moved into home
- M. Major illness of family member
- N. Major illness of yourself
- O. Family moved
- P. Other. Please specify

### 33. Size of Household

<table>
<thead>
<tr>
<th>Size of Household</th>
<th>0-2</th>
<th>3-5</th>
<th>6-11</th>
<th>12-18</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>C</td>
<td>A</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>C</td>
<td>A</td>
<td>C</td>
</tr>
</tbody>
</table>

Write the number of adults and children who comprised the household in which you lived during each of your age periods in the boxes above. Write the number of adults after "A" and the number of dependent children after "C". Count persons who slept in the household for 50 percent or more of the time, including yourself.
### 34. Family Activities:

<table>
<thead>
<tr>
<th>Age Periods</th>
<th>0-2</th>
<th>3-5</th>
<th>6-11</th>
<th>12-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Home</td>
<td></td>
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</tbody>
</table>

Compared to other families you know, how much did your family participate in activities together? (Consider working on family projects as well as recreational activities.) Write the letter preceding the appropriate description given below in each of the age periods boxes above.

A. A lot (daily)
B. Sometimes (a few times a week)
C. Infrequently (two or three times a month)
D. Almost never (once a month or less)

35. Was any family member usually excluded from this group?
   ___ Yes   ___ No

36. If so, who was excluded and why? ________________________

### 37. Family Activities:

<table>
<thead>
<tr>
<th>Age Periods</th>
<th>0-2</th>
<th>3-5</th>
<th>6-11</th>
<th>12-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Away From Home</td>
<td></td>
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</tbody>
</table>

Compared to other families you know, how much did your family participate together in activities in the community? (Consider community service groups as well as social activities.) Write the letter preceding the appropriate description given below in each of the age period boxes.

A. A lot (daily)
B. Sometimes (a few times a week)
C. Infrequently (two or three times a month)
D. Almost never (once a month or less)

38. Was any family member usually excluded from this group?
   ___ Yes   ___ No
39. If so, who was excluded and why? ____________________________

40. Age Periods

<table>
<thead>
<tr>
<th>Family Closeness</th>
<th>0-2</th>
<th>3-5</th>
<th>6-11</th>
<th>12-18</th>
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</thead>
<tbody>
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</tbody>
</table>

Compared to other families you know, how emotionally close was your family in each of your age periods. Write the letter preceding the appropriate description given below in each of the age period boxes above.

A. Very close
B. Close
C. Somewhat close
D. Not close

41. Was any family member excluded from this closeness?
   _ _ Yes _ _ no

42. If so, who was excluded and why? ____________________________

43. If any change in closeness occurred during your growing up years, how do you account for this change?

_________________________________________________________________

_________________________________________________________________
### 44. Parental Discipline

<table>
<thead>
<tr>
<th>Age Periods</th>
<th>0-2</th>
<th>3-5</th>
<th>6-11</th>
<th>12-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental Discipline</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Parents made and strictly enforced rules.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Parents set the limits and children were allowed freedom within the limits.</td>
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</tr>
<tr>
<td>C. The family made the rules together. They were enforced with sensitivity to the situation.</td>
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</tr>
<tr>
<td>D. Everyone did their own &quot;thing&quot; and suffered or benefitted from the consequences.</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

What option given below best describes the kind of discipline used by your parents? Write the letter preceding the appropriate description given below in each of your age period boxes.

45. If your family has any special qualities or characteristics that are not indicated by the responses to the previous questions, would you please share those qualities/characteristics with us?

*46. In your own words, describe what it was like to grow up in your family. Be as candid as possible. Use the back of the page, too, if you wish.

* Denotes items used for present investigation
Before turning in your form, please check to see that you have completed all questions.

Thank you for sharing information with us about yourself and your growing-up years.
CONCEPTUAL SYSTEMS TEST
Conceptual Systems Test

Items

Answer choices are: 1 = I agree completely
2 = I agree mostly
3 = I agree and disagree about equally
4 = I disagree mostly
5 = I disagree completely

1. I think I have more friends than most people I know. 1 2 3 4 5
2. Contributing to human welfare is the most satisfying human endeavor. 1 2 3 4 5
3. I like to meet new people. 1 2 3 4 5
4. No man can be fully successful in life without belief of faith in divine guidance. 1 2 3 4 5
5. I feel like telling other people off when I disagree with them. 1 2 3 4 5
6. I like to help my friends when they are in trouble. 1 2 3 4 5
7. I like to give lots of parties. 1 2 3 4 5
8. I like to criticize people who are in a position of authority. 1 2 3 4 5
9. I am a very sociable person who gets along easily with nearly everyone. 1 2 3 4 5
10. In the final analysis events in the world will ultimately be in line with the master plan of God. 1 2 3 4 5
11. I like to start conversation. 1 2 3 4 5
12. Most people can still be depended upon to come through in a pinch. 1 2 3 4 5
13. I like to join clubs or social groups. 1 2 3 4 5
14. Any written work that I do I like to have precise, neat and well organized. 1 2 3 4 5

15. It is safest to assume that all people have a vicious streak and it will come out when they are given a chance. 1 2 3 4 5

16. The dictates of one's religion should be followed with trusting faith. 1 2 3 4 5

17. I like to have my meals organized and a definite time set aside for eating. 1 2 3 4 5

18. I like to do things with my friends rather than by myself. 1 2 3 4 5

19. I like to have a place for everything and everything in its place. 1 2 3 4 5

20. I enjoy very much being a part of a group. 1 2 3 4 5

21. I like to help other people who are less fortunate than I am. 1 2 3 4 5

22. Marriage is a divine institution for the glorification of God. 1 2 3 4 5

23. I like to have my life so arranged that it runs smoothly and without much change in my plans. 1 2 3 4 5

24. I like my friends to confide in me and to tell me their troubles. 1 2 3 4 5

25. I like to have my work organized and planned before beginning it. 1 2 3 4 5

26. I enjoy making sacrifices for the sake of the happiness of others. 1 2 3 4 5

27. I feel like making fun of people who do things that I regard as stupid. 1 2 3 4 5

28. Sin is but a cultural concept built by man. 1 2 3 4 5
29. I like to keep my things neat and orderly, on my desk or workspace. 1 2 3 4 5
30. I prefer to do things alone rather than with my friends. 1 2 3 4 5
31. I believe that to attain my goals it is only necessary for me to live as God would have me live. 1 2 3 4 5
32. I like to treat other people with kindness and sympathy. 1 2 3 4 5
33. I find that a well-ordered mode of life with regular hours is suitable to my personality. 1 2 3 4 5
34. These days a person doesn't really know whom he can count on. 1 2 3 4 5
35. Guilt results from violation of God's law. 1 2 3 4 5
36. Politicians have to bribe people. 1 2 3 4 5
37. I like to keep my letters, bills and other papers neatly arranged and filed according to some system. 1 2 3 4 5
38. I feel like getting revenge when someone has insulted me. 1 2 3 4 5
39. I feel at home with almost everyone and like to participate in what they are doing. 1 2 3 4 5
40. I like to form new friendships. 1 2 3 4 5
41. I like to sympathize with my friends when they are hurt or sick. 1 2 3 4 5
42. I don't like for things to be uncertain and unpredictable. 1 2 3 4 5
43. You sometimes can't help wondering whether anything's worthwhile anymore. 1 2 3 4 5
44. I like to plan and organize the details of any work I undertake. 1 2 3 4 5
45. The way to peace in the world is through religion.

46. Anyone who completely trusts anyone else is asking for trouble.

47. I always like for other people to tell me their problems.

48. I like to make as many friends as I can.

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THE OHIO STATE UNIVERSITY

School of Home Economics
Preschool Teacher Project

OBSERVER RATING SCALES
Code Sheet

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<th>Location</th>
<th>Quarter/Semester</th>
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<td>Time Out</td>
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<td>Date</td>
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# Observation Notes

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<thead>
<tr>
<th>Rater</th>
<th>Subject</th>
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**Warmth**

**Enthusiasm**

**Clarity**

**Variety**

**Individualization**

**Feedback**

**Cognitive Demand**

**Freedom**

**On-Task Activity**
WARMTH

Warmth refers to the degree to which the teacher maintains positive interpersonal relationships with children.

A teacher that is warm is one that is positive to the children, demonstrating friendly and warm behavior. The children show signs of feeling secure and appear to like or enjoy the classroom experience. There is an atmosphere of acceptance of children. This teacher demonstrates sensitivity to children. The teacher is sensitive to the private lives of the children, and concerned about the personal and social growth of each child. Children are praised and reasoning is used rather than punishment. The teacher smiles and uses physical contact and humor in a positive way.

A teacher that is cold is one in which the teacher is demeaning to children. The teacher is critical and stern. The atmosphere is one of apparent insensitivity to children. This teacher seems to think of children as "things" or "objects" to be dealt with. Verbal or physical punishments are given for misbehavior. Sarcastic humor may be used to degrade or ridicule. There may be some differential treatment of children. Children exhibit feelings of insecurity and tension.

1. A cold teacher treats children in a rejecting way. This teacher rejects not only undesirable behavior, but the children as well. By using negative words and harsh tone of voice when correcting children a cold teacher leaves children feeling "bad" or guilty. His/her speech is commanding or scolding. Sarcasm may be used to ridicule or degrade children. If the teacher touches children, it is for disciplinary purposes. This teacher has an angry or cross disposition and a frowning appearance.

2. This teacher is formal and distant in his/her relationships with children. He/she is insensitive to children's feelings. Children do not approach him/her with their problems. This teacher is lesson-centered to the extend that getting the job done takes priority over responding to children in a tactful or considerate way.

3. This teacher is not always aware of children's feelings or may ignore them. While the teacher tries to temper the tone of his/her corrections, the child still senses the negative overtones.
4. This teacher is business like and intent on getting the academic job done. He/she tries to be friendly and is interested in the children. If this teacher disapproves of a child's behavior, he/she is tactful and understanding when correcting the child. In general, he/she uses more praise than criticism.

5. This teacher is sensitive to children's feelings. He/she uses positive words when correcting children, leaving the children feeling secure even when corrected. This teacher is helpful and supportive. Children approach him/her with their problems. He/she frequently praises and compliments.

6. A warm teacher treats all children in an accepting way. He/she responds to each child as a person. When a child's behavior is undesirable, this teacher remains accepting of the child but rechannels the behavior or suggests an alternative behavior in a positive way. He/she uses positive words and his/her tone of voice is gentle. He/she feels free to touch children in a guiding and encouraging manner. This teacher has a pleasant disposition and a smiling appearance.
ENTHUSIASM

Enthusiasm refers to the interest level expressed by the teacher and children during class activities.

The enthusiastic teacher conveys a great sense of commitment, excitement, and involvement in the subject matter. The children seem responsive and appear to enjoy the activity. The teacher seems to expect children to do their best. The teacher's tone of voice varies.

The dull teacher does not appear interested in the subject matter. The children seem nonresponsive and do not appear to be involved in the activity. The teacher doesn't seem to care whether or not children do their best.

1. This teacher does not seem to care about what he/she is teaching. He/she is both apathetic and boring. His/her voice is generally monotonic. This teacher usually remains stationary in the classroom. He/she uses few gestures and has little eye contact with the children. Most children direct their attention elsewhere.

2. This teacher is dry; he/she sticks strictly to the facts. His/her attention is focused principally on the materials rather than on the children. This teacher uses little voice modulation or eye contact.

3. This teacher is poised and controlled. He/she wants the children to learn but his/her presentation lacks sparkle. Most children pay attention but they are not inspired.

4. This teacher is interesting and confident. He/she demonstrates an earnest desire for children to grasp the material. His/her presentation is attractive and most children appear eager to respond to the suggestions and questions posed by the teacher.

5. This teacher is stimulating. He/she uses expressiveness and variety in tone of voice and eye contact. He/she includes facts or ideas which stimulate interest. Children are willing to do more than just answer the teacher's questions. Children offer their opinions to add to the ideas of the teacher. There is much interaction between the teacher and children.
6. This teacher is a dynamic showman. He/she dramatizes the activities and captures the attention of children by facial expression, gestures and voice modulation. There is constant and continual teacher-child interaction and child-child interaction. There is never a dull moment. The children are in the middle of the action. The activity in the Nursery School is lively and it is obvious that both the teacher and children are enjoying the activities.
CLARITY

This dimension refers to the clarity of communication, instructions and expectations conveyed to the children.

The teacher who is clear states or implies goals and objectives of activities in such a way that children can understand them. The teacher's vocabulary is appropriate. The children know what they are supposed to do and why. Children can follow the teacher's explanations. Ample examples are offered, relating new information to past experiences. Instructions and explanations are completed. Presentations and activities are well organized. Children can carry projects to completion without confusion.

The teacher who is vague or who demonstrates a lack of clarity rarely states the goals or objectives of an activity. If he/she does, the children do not understand what they are to do and why they are doing it. Activities are not well organized and children ask questions that suggest confusion or lack of understanding of something that was discussed or directions that have been given.

1. This teacher presents material in a vague and disorganized way. He/she talks in generalities and may use words that children do not comprehend. He/she rarely gives examples and seldom completes instructions or explanations. Children show a low degree of understanding and exhibit much confusion.

2. This teacher has difficulty in getting his/her point across. He/she gives few or poor examples and may use words that children do not comprehend. Many children do not seem to understand and there is considerable evidence of confusion.

3. This teacher may need to repeat his/her point again. He/she is aware of children's difficulty and tries to clarify what he/she has said by repeating the original explanation. This method does not always provide an adequate answer to children's questions. There is some evidence of doubt and uncertainty.

4. This teacher's instructions are mostly clear. He/she tries hard to get his/her point across. When students ask questions he/she usually provides an adequate answer by presenting alternatives or by using a different choice of words. Children seem satisfied. There is more evidence of understanding than uncertainty.
5. This teacher comes across as clear and organized. Although his/her language level is appropriate for most of the children, it may be inappropriate for a few of the children. He/she provides a sufficient number of good examples and usually completes instructions and explanations. There is little evidence of uncertainty.

6. This teacher presents material in an explicit, logical and organized manner. He/she uses an appropriate language level. He/she illustrates generalities with ample specific examples and carries all instructions and explanations through to completion. He/she makes sure that all of the children understand.
VARIETY

This dimension refers to the extent to which the teacher used a variety of materials and activities.

The teacher with variety uses many activities and a variety of materials within the Nursery School. These materials may either be used by the teacher in instruction as well as be available for use by children during the lesson.

The teacher who lacks variety uses few materials within the Nursery School. Children work on the same task for most of the time. The teacher's approach seems to be rigid and predictable.

1. This teacher relies exclusively on printed material. The Nursery School schedule is routine and predictable. Children work on the same task for a long duration of time. The teacher does not vary his/her approach to meet unexpected situations.

2. In addition to printed materials, this teacher uses charts and other visual aids. Children are expected to respond as prescribed by the teacher.

3. This teacher uses printed material and visual aids. Instructional games, or other activities are used to enrich the "question-answer" format.

4. This teacher makes use of specially selected supplementary materials: commercial kits, film strips, movies, games. Children's activities are built on these materials and may include child-child interaction as well as child-teacher interaction.

5. Materials in use go beyond commercially prepared instructional aids. Instruction may be built around field trip materials, special displays, exhibits, activities or experiments. Children may be planning, observing, describing, exploring, experimenting, playing, acting or sharing ideas.

6. This teacher uses a wide variety of activities and a diversity of materials during the Nursery School period. He/she brings unique materials into the Nursery School and makes ingenious use of the physical resources available to him/her. The children work on many different activities and have access to an abundance of materials and equipment. The schedule is flexible and adaptable.
INDIVIDUALIZATION

This dimension refers to the degree to which the teacher provides children with different levels of work that are suited to their particular needs, interests, and abilities, and to the amount of individual assistance provided.

The teacher whose teaching is individualized shows an awareness of individual differences. He/she makes different plans for different ability levels. This teacher makes use of special talents and interests of children in planning activities. Different children or groups of children are working on different activities.

The teacher whose teaching is not individualized uses the entire groups as the primary activity unit. He/she displays little awareness of individual abilities or interests. All children generally work on the same activity for the same period of time. No provisions are made for children at different ability levels. Many children exhibit stress behavior due to time pressure.

1. All children use the same materials and work on identical activities. Time allowed to complete activities is the same for everyone.

2. All children use the same materials and work on identical activities, but some individual assistance is available and time requirements are somewhat flexible.

3. Children are grouped. The same activities and materials are used by all groups, but each group works at a different pace. One group may be far ahead of another.

4. Children are grouped, but each group works with different activities and materials based on the needs of the group. The pace varies between the groups.

5. Children may work individually or in groups. When group work is planned, all children are expected to participate. Individuals within groups receive supplementary enrichment or remedial materials as needed.

6. Usually each child works at his/her own pace on an individual activity designed to meet the needs of each individual child. Some group activities are planned. Individual assistance is available to aid children when needed.
FEEDBACK

This dimension refers to the extent of communication to the children of information about the adequacy, acceptability, completeness, or correctness of his/her response.

**Effective feedback** indicates to the children the specific characteristics of the response that make it adequate or inadequate, correct or incorrect.

**Ineffective feedback** does not provide the children with specific information about his/her response and therefore has little or no effect on improving performance. Feedback is ineffective if it is very general, inconsistent or unclear.

1. This teacher does not frequently respond to his/her pupils' activities/behavior. He/she may keep a record of children's performances for evaluation purposes, but such information is rarely communicated to the children or their parents.

2. This teacher responds to children's activities/behaviors with general response, such as "O.K.," or "Good" without going into detail about what is good or bad about it.

3. This teacher gives a general response, with some specific comments about the overall quality of the work.

4. This teacher lets children know which responses or behaviors are right or wrong without indicating what is right or wrong about them.

5. This teacher lets children know which responses/behaviors are right or wrong and tries to be as specific as possible, pointing out those parts that are well done and those parts that need improving.

6. This teacher uses materials or methods which provide the children with a constant step-by-step check on whether his/her response/behavior are right or wrong.

205
COGNITIVE DEMAND

This dimension refers to the level of intellectual activity that the teacher expects from the child.

The teacher which makes a low cognitive demand asks children to remember, recall or recognize facts or ideas. The child is expected to store certain information in his mind and remember it later.

The teacher who makes a high cognitive demand asks children to understand, comprehend, solve problems, or evaluate.

The rating for cognitive demand should indicate the highest level of intellectual activity that the teacher emphasizes.

1. Knowledge: The teacher emphasizes coverage and retention of material. Children are expected to recall specific bits and pieces of information, events, actions, or materials previously discussed or experienced.

2. Comprehension: The teacher asks children to explain or summarize information in their own words rather than recalling the words of others. The children are not expected to relate the information to other material or understand its fullest implications.

3. Application: The teacher expects children to transfer information, concepts or rules by applying them to specific problems and situations.

4. Analysis: The teacher expects children to identify separate parts of complex ideas and to relate them to other material/experiences. The intent is to clarify information and to indicate how the ideas are organized.

5. Synthesis: The teacher expects children to combine and integrate information to form new ideas or new ways of understanding old information/experiences. The children are encouraged to manipulate materials and pieces of information to develop new arrangements on their own.

6. Evaluation: The teacher encourages children to make judgments of material/activities, information, and behavior through a process which requires children to weigh values and alternatives.
FREEDOM

This dimension refers to the degree to which the teacher provides arrangements which facilitate independence and individual freedom.

A teacher that is open provides an atmosphere in which children can move about freely and interact freely. Few teacher-dictated restraints are placed on the children's behaviors. The child is given maximum responsibility for deciding what and when to do. Children are given verbal freedom in expressing their ideas and are permitted to question or challenge the teacher.

A restricted atmosphere is one in which the children are not given any verbal or physical freedom within the Nursery School. The teacher is the one who determines what activities will take place and when. The teacher makes most of the decisions. Conformity to rules is highly valued.

1. A restrictive teacher strictly controls the child's behavior. The children look to the teacher to direct their every move and may frequently turn to the teacher to ask "What should I do next?" There are an abundance of dictatorial rules. Children must ask permission to perform routine tasks such as going to the restroom, getting supplies, etc. The child is not allowed to express his/her own opinions nor to question the teacher's point of view.

2. Nursery School activities and decisions are structured and dominated by the teacher. If children are allowed to make decisions, they concern matters of minor importance to the teacher. Children are not given the opportunity to diverge from the specified activities. The teacher accepts only expressions of attitudes compatible with her own. Obedience to rules is expected. The Nursery School appears to be "in order."

3. Nursery School activities are structured by the teacher, but children have some verbal freedom of expression and physical freedom of movement. The children may be seen walking freely about the classroom, talking to each other or to the teacher. The atmosphere may seem very relaxed. However, the teacher is clearly in charge of decision making.
4. The teacher sometimes presents opportunities for the children to make major decisions, but the choices are usually limited. The teacher does not refrain from taking the lead if there is a lull or lag in the children's activities or response. The decision-making roles regarding rules and activities are shared between the teacher and the children.

5. The children are consistently offered freedom of choice, but the teacher sets definite limits. For example the activity may be specified in terms of time spent, but the child is allowed to choose what to do from a predetermined list of activities, or how long to spend on a given activity, or the order in which he/she prefers to perform activities. There is limited reference to rules. Rather, the emphasis is on the child's awareness of the appropriateness of his/her own behavior. Children are free to express opinions.

6. An open teacher provides freedom of choice not only in terms of when and how long to participate in an activity but also in terms of the particular activity in which the child wishes to participate. There are learning centers around the room and children are free to move from one activity to another or to create their own learning experiences. There is a noticeable lack of specific assignments or direction giving. The teacher functions primarily as an information resource or sounding board. There may be considerable cooperation and conversation between children. Children are given individual responsibility for their behavior. There is little reference to rules. Free expression of ideas prevails and children are free to challenge the teacher's ideas.
ON-TASK ACTIVITY

This dimension refers to the amount of activity that is directed toward the accomplishment of instructional objectives.

In an environment with high on-task activity, the children are actively engaged in learning activities. Children appear to be accomplishing instructional goals.

In an environment with low on-task activity, most of the children are not engaged in learning activities. There are many instances of day-dreaming and/or disruptive behavior and "goofing-off". Time is not effectively utilized and there is little evidence of productive behavior.

1. In this environment, there is constant aimless activity, disruption, rowdiness, and/or "goofing off." Little if any task accomplishment is evident. Attempts by the teacher to get children to return to learning activities are generally ineffective.

2. In this environment, a considerable degree of inattention is exhibited. Most of the children are not involved in the activities. There is much commotion and chatter, or quiet behavior such as wandering, doodling or day-dreaming, little of which is related to the task/activity.

3. In this environment, some children are busy working on the activities, but many direct their attention elsewhere. Task related behavior may be evident at the start of any activity but attention does not last and restlessness or day-dreaming results.

4. In this environment, many children are participating in the learning activities. Some temporary off-task behavior may be exhibited by a few children, but attention is quickly restored.

5. In this environment, a majority of children are engaged in the learning activities. There are a few children who are searching for "something to do," but the children are task-oriented most of the time.

6. In this task-oriented environment, all children are engaged in the learning activities. Whether they are working in a group or individually, children are actively involved in the task/activity. A high degree of accomplishment is evident.
APPENDIX B

Human Subjects Review Form
ACTION OF THE REVIEW COMMITTEE

The Behavioral and Social Sciences Review Committee has taken the following action:

1. Approve (_____ Waiver of written consent)
2. Approved with conditions
3. Disapprove

with regard to the employment of human subjects in the proposed research entitled: TOWARD THE PREDICTION OF PRESCHOOL TEACHER COMPETENCY: A CORRELATIONAL CHARACTERISTICS AND AFFECTIVE TEACHER BEHAVIORS. Jean D. Dickerscheid is listed as the principal investigator. 131 Campbell Hall 1787 Neil

It is the responsibility of the principal investigator to retain a copy of each signed consent form for at least four (4) years beyond the termination of the subject's participation in the proposed activity. Should the principal investigator leave the University, signed consent forms are to be transferred to the Human Subject Review Committee for the required retention period. This application has been approved for the period of one year. You are reminded that you must promptly report any problems to the Research Committee, and that no procedural changes may be made without prior review and approval. You are also reminded that the identity of the research participants must be kept confidential.

Date: AUG 6 1980
Signed: (Chairperson)

cc: Original-Investigator
Ken Sloan
Development Officer
File

Form PA-025
Rev. 10/79
APPENDIX C

Examples of Essays Written by Student Teachers
Example 1

My parents love children and they love each other which was/is expressed by their actions, respect, consideration, and so forth. I enjoyed my childhood experiences. We traveled frequently and did many family activities.

There were times when small that I hated my parents because of the limits they placed on me but as I grew older I realized the purpose of those limits.

My brother and I were given a lot of opportunity in respects to education.

Overall, I enjoy and love my family despite the average ups and downs!

Example 2

My family has always been close. We've always helped each other with problems (including emotional and physical and financial) and have always been very protective towards each other. Most of my memories have been happy ones. Each member of my family has a good sense of humor and there was always a lot of laughter. My brother and sister moved out and married when I was five or six years old and so it was like having three sets of parents in a way. I was terribly spoiled, even when they began having their own children. Mom was the one who handled all the financial matters as well as the child-rearing (disciplining as well) and still does "run the house". Mom was the stereotypic homemaker and Dad the stereotypic bread-winner. Children always played an important part in the family (grandchildren as well) and were usually thought of first when plans were being made for the family. My brother and sister's families have always been tightly knit to ours even though we live far apart from them.
Example 3

My family was a very close family. We were very concerned with what the other family members were doing. We did lots of recreational activities together. We went ice skating in the winter and my parents also participated. Since we own a cottage in [blank], my family spent much time together up there. About every weekend in the summer was spent there since I was two. Our family enjoyed being with each other and doing things together. Since I have sisters that are close to my age we were able to do lots of things together.

My family was always very close and we are now beginning to not spend as much time together, since my father died a year ago. I feel spending time with your family is important and since our family isn't as close now, I can see the change in my eight year old brother.

Example 4

Our family life was very family-oriented. Meals, church services, and vacations always included the whole family. However, the tension between our parents was felt by us kids. I noticed problems around age eight. We were characterized as nervous. Our parents argued openly but the arguments were always verbal. Overall, we were very close, especially with our mother.