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Using developmental instruction in a preservice teacher education course: A quasi-experimental study

Hart, Patricia Margaret, Ph.D.

The Ohio State University, 1989
USING DEVELOPMENTAL INSTRUCTION IN A PRESERVICE TEACHER EDUCATION COURSE: A QUASI-EXPERIMENTAL STUDY

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the

Degree Doctor of Philosophy in the Graduate

School of The Ohio State University

By

Patricia Margaret Hart, B.A., M.S.

*****
The Ohio State University
1989

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Dr. Nancy Zimpher
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Dedicated to the memory of
my father, Raymond F. Hart,
a man who valued hard
work and higher education.
ACKNOWLEDGEMENTS

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CHAPTER I

INTRODUCTION

Background of the Problem

In 1982, almost one of every six students enrolled in the public schools was from a poor family and almost one of every ten was handicapped. More than one of every four enrolled was a member of a minority. All these data were up from the previous decade. If present trends continue — and there is every reason to believe they will accelerate -- the public schools in 2000 will have substantial numbers of minority, low-income, and handicapped students. (Haberman, 1984, p. 498)

The diversity of educational needs in today's classrooms continues to grow with these cultural and demographic changes. Teachers traditionally have faced the challenges of meeting two or three dozen children's educational and emotional needs; today, however, new political and social pressures make the classroom teacher's job increasingly difficult. Latchkey children, drug and sex education, and administrative pressures for student performance contribute to a classroom environment that challenges even the most skilled educators. Teacher educators need to address the need for higher cognitive levels in teachers who must be able to "read and flex" (Hunt, 1976) with the student population of the
The myriad variables in the classroom environment require teachers to make any number of rapid decisions throughout the day. Research suggests that "on the average, teachers make one interactive decision every 2 minutes. Thus, these data suggest that the decision-making demands of classroom teaching are relatively intense" (Clark and Peterson, 1986). A significant body of research indicates the type of teacher that will be successful in this context depends more on her cognitive abilities than on her academic background (Theis-Sprinthall, 1984). Individuals that operate on higher levels of cognitive development are more flexible and capable of reading their students to determine what approach will be most effective.

Effective teaching is a most complex form of human behavior. In this context, developmental theory and practice from a variety of perspectives have powerful implications for teacher education. Research by Harvey, Hunt, Joyce, and colleagues and that more recently reported by McNerney and Carrier, Sprinthall and Theis-Sprinthall, and others provides a key empirical and theoretical bridge connecting developmental concepts to classroom teaching. They documented through natural-setting research that teachers at higher stages of development function at more complex levels; are more flexible, stress-tolerant, and adaptive; assume multiple perspectives; utilize a wider variety of coping behaviors; and employ a broader repertoire of teaching models. These findings may be linked to similar emerging trends in cognitive-developmental research. (Oja, 1984, p.171)
Sprinthall and Theis-Sprinthall recommend that there be more research with the cognitive-developmental model in teacher education.

For example, in preservice programs, we could foresee the possibility of applying a series of differentiated learning environments and different supervision techniques to groups of student teachers according to their entry developmental level. The initial stage represents that individual's current preferred style and matching the general instruction (both content and process) to this initial level is really nothing more than Dewey's original dictum of starting where the learner is. (Sprinthall and Theis-Sprinthall, 1983, p. 93)

This study presents several ways of looking at cognitive development in preservice elementary education students. In the late sixties, William Perry published his findings on the changes college students experienced as they progressed through their four years of studies. Studying undergraduate students at Harvard and at Radcliffe, he concluded that college students progressed through stages or positions of intellectual development.

One naturally thinks of any scheme of development in terms of its 'Stages' or Positions as we call them in our own scheme. Positions are by definition static, and development is by definition movement. It was therefore the transitions that were so fresh and intriguing. Each of the Positions was obvious and familiar in its delineation of a meaningful way of construing the world of knowledge, values and education. (Perry, 1981, p.34)

Perry's set of cognitive structures describes differential natural epistemologies, or views of knowledge, and their behavioral correlates, all of which affect "how an individual will perceive, organize and evaluate experiences and
events in their life and less directly how s/he will behave and feel in those events” (Rodgers, unpublished manuscript). Persons at different positions have different cognitive skills and consequently may learn more easily in different environments. Perry’s positions are sequential and integrate previous positions in a hierarchical fashion. Each position is a qualitatively different way of making meaning of questions, knowledge, and evaluations; and they focus on “how people think, not the content or what people think” (Rodgers, 1980).

Like Piaget, Perry postulates that individuals seek equilibrium in making meaning of experiences but adds that cognitive challenges can result in disequilibrium, a feeling and perception that one’s way of making meaning is inadequate or fallacious. Perry proposed nine positions of intellectual development for adults. Broadly speaking, Perry categorizes his first three positions as dualistic. Relativism includes positions 4, 5, and 6. Positions 3 and 4 serve as transitions; the emphasis on dualism develops into multiplicity and then relativism. Positions 7, 8, and 9 focus on commitment within an uncertain world of knowing and valuing.

Perry sees his positions linked to a person’s development of psychosocial maturity. “For most students, their address to these challenges as they experienced them... seemed to represent a coherent development in the forms in which they functioned intellectually, in the forms in which they experienced values and in the forms in which they construed their world” (Perry, 1970).

Perry developed his cognitive structures as a result of three sets of longitudinal interviews with college students over a 15-year period. However, interviewing is time-consuming and costly. Since that time researchers have developed written instrumentation, which has proven to be more practical than inter-
viewing largely because it enables group administration.

The Measure of Epistemological Reflection (MER) was designed to meet the measurement criteria to increase specificity and precision in the assessment of intellectual development. Although further validity testing in the form of longitudinal research is still needed, the current data provide a foundation for using the MER in applying theory to practice. The reliability and validity of the MER result in an accurate, practical form of assessment for use in practice. The use of a written instrument also reduces the training and resources needed for data collection. (Baxter Magolda and Porterfield, 1988, p. 21)

Perry’s work has made significant contributions to higher education. If faculty are able to identify the student’s intellectual level, they can adjust their teaching according to the learner’s needs (Widick, Knefelkamp and Parker, 1975). The Perry theory has been translated into an instructional design criteria called Developmental Instruction, which emphasizes the goals of (a) learning content/concept material, (b) being more satisfied with the learning experience, and (c) facilitating an increase in intellectual development as defined by the Perry scheme (Widick, Knefelkamp and Parker, 1975).

Developmental Instruction is a systematic and explicit effort to diagnose and respond to individual differences while taking into account the nature and processes of development (Widick and Simpson, 1978). The Perry scheme can be used as the basis for such an effort. The Developmental Instruction model which was evolved from the Perry scheme (Widick, Knefelkamp and Parker, 1975) identifies four major variables inherent in the classroom learning environment
that either enhance or retard the learning process, depending upon the student’s position along the Perry continuum: (a) degree of structure in the learning environment, (b) amount of diversity in the learning tasks, (c) the degree of abstractness or concreteness in the learning experience, and (d) amount of personalism in the learning environment. These variables "provide the elements of support and disequilibrium that are necessary to foster cognitive developmental growth" (Knefelkamp, 1974).

This model also analyzes the four major components of a classroom: students, content, outcomes, and teaching method. The learning component needs to be examined in relation to the roles of students, teachers, peers, forms of evaluations, and the intellectual stage the students seem to prefer.

The Perry version of Developmental Instruction has been used in specific instructional areas, such as an interdisciplinary course involving literature, psychology, and human identity (Widick, 1975). Widick and Simpson (1978) employed the model in a history course with positive results. The treatment group in their study experienced cognitive growth along the Perry scale, mastered the subject matter, and enjoyed the course using developmental concepts: "These results suggest that attention to student development need not detract from academic learning; indeed such efforts may complement and augment knowledge acquisition" (Widick and Simpson, 1978). Baxter Magolda (1987) used a relativistic design in teaching student development theory that "provided evidence of subject mastery and satisfaction as a result of the design" (Baxter Magolda and Porterfield, 1988).

Parker (1978) suggested improving college instruction by educating faculty on the Perry scheme. If teacher education faculty could use developmental
approaches in their courses, preservice teacher education students could possibly benefit in the following ways: (a) learn more content, (b) be more satisfied with their learning experience, and (c) develop along the cognitive development scale. This evidence provides the framework for this research study, which incorporated Developmental Instruction into a preservice teacher education course. The study attempted to measure cognitive development, content knowledge, and student satisfaction; in addition, the study examined other features, such as students' demographic information, personality type, and conception of teaching. These additional areas of research broaden the context to help better understand the nature of cognitive development in preservice elementary education students.

Essentially, this study presents an in-depth analysis of concerns related to fostering increases in the cognitive developmental levels of preservice elementary education students enrolled in a children's literature methods course. As such, several dimensions related to cognitive development will be analyzed in this study.

1. First, an intervention was designed to increase cognitive development by using Developmental Instruction and measuring the impact using the MER (Taylor and Porterfield, 1982).
2. A second objective of the study was to examine whether the use of the Developmental Instructional model would increase content knowledge acquisition.
3. Another objective was to examine whether Developmental Instruction affected specific indicators of student satisfaction.
4. Assuming that the background, career orientation, and previous experience of students might have some bearing, the study looked at these features vis-a-
... vis-a national probability study. The data also provided evidence of the
"typicality" of the sample.
5. The study explored the relationship of cognitive development to personality
types.
6. Finally, the researcher interviewed students and asked questions about their
conceptions of teaching to determine the relation between cognitive develop­
ment and their views of teaching.

The researcher formulated the first half of the dimensions of the study in
the form of hypotheses and the second half as research questions. The hypothe­
ses relate to an intervention discussed in chapter 3 that attempted to promote
cognitive development among preservice elementary teacher education students.

Thus the central question reflected in this study is: Can using Develop­
mental Instruction (based on the Perry scheme) as applied in an intentionally
designed education methods course foster greater cognitive-structured develop­
ment, content learning, and student satisfaction of teacher education students
compared with students in the same course without an intentional design?

The researcher formulated these three null hypotheses from the Develop­
mental Instruction model incorporated in the intervention.

Hypothesis #1. The Perry post-test levels for the students in the treatment class
will not be significantly different from those of the comparison class, as meas­
ured by the Measure of Epistemological Reflection (Taylor and Porterfield, 1982).

Hypothesis #2. The retention of the students' knowledge of children's literature
for the treatment class will not be significantly different from that of the compari-
Hypothesis #3. The students' satisfaction in the treatment class will not be significantly different from that of the comparison group, as measured by two student evaluation instruments.

The research questions formulated here are exploratory features that provide a broader context for better understanding the nature of cognitive development among preservice elementary education students.

Research Question #1. What is the nature of the students' background, career orientation, and preservice experience in relation to a national probability sample of elementary education students; and what factors are likely to have an impact on cognitive development?

Research Question #2. What is the relation between the students' personality type and cognitive level, and what implications can be drawn from this analysis?

Research Question #3. What is the relation between the students' conception of teaching and cognitive development, and what implications can be drawn from this analysis?
Definition of Terms

For the purposes of this study, the following terms will be used:

Developmental Instruction - A model for college-level instruction that provides elements of support and challenge for the dualistic and relativistic learner in the classroom. It focuses on different degrees of class structure, amount of diversity in the content, type of experiential learning, and amount of personalism in the class. By encouraging the use of higher-order skills this approach creates cognitive conflict and leads to development of more complex ways of thinking (Widick, Knefelkamp and Parker 1975).

Cognitive Structure - The technical name given to a tacit set of assumptions for all cognitive structural theories, including the Perry scheme. These assumptions "act as a filter dictating how the individual will perceive, organize and evaluate events in the environment and, though less directly, how he/she will behave in response to these events" (Widick, 1977).

Position - Term used by Perry for a cognitive structure in his scheme. His nine positions are relatively stable cognitive structures for making meaning of questions on knowledge and evaluations. Perry positions are sequential, hierarchical, and qualitatively different. "The positions are concerned with structure, or 'how' a student thinks and not content, or 'what' they think" (Rodgers, 1980).
Teacher Education Program - A formulation of courses in the professional school of education designed to meet certification standards for candidates in a specified state in the United States.

Methods Course - A term used in teacher education to describe general courses of practical teaching and methods of teaching strategies specific to subjects in the school curriculum.

Teacher Candidate - A student admitted to a preservice teacher education program of study in a four-year college or university.

Limitations and Assumptions of the Study

The procedural limitation of this research study is the sample size drawn from each section of the course. The students were chosen based on a stratification of the sample. Both the comparison and treatment groups were controlled for age, sex, major, and year of study. Given these criterion, there were 18 in the comparison group and 15 in the treatment group. The all-female samples reflect the predominantly female elementary education student population. In the 1988 national survey of students in elementary teacher education programs conducted annually by the American Association of Colleges for Teacher Education (AACTE), 92.3% were female, and 7.7% were male (Garibaldi and Zimpher, 1989).

In this quasi-experimental study, the two samples used for the comparison and treatment groups have been drawn from two different sections of the same
children's literature course required of elementary majors at a medium-sized private institution in the Midwest. The researcher was the instructor for both sections, and the content was the same; however, the instructional format varied. The tendency to teach the same way for both sections was controlled by observations and audio- or videotaping of every class session.

Summary

The study introduced in this chapter proposes to incorporate the Developmental Instruction (Widick, Knefelkamp, and Parker, 1975) model in a preservice teacher education course. The model is based upon the work of William Perry and his research of the cognitive development of college students. This study hypothesizes that students will learn more content, be more satisfied, and display growth on the cognitive development scale. The Developmental Instruction model will be incorporated into the treatment section of the children's literature course in a quasi-experimental study. A highly structured instructional approach will be used in the comparison section. The study will also research the relationship between personality type, background, conception of teaching, and the cognitive developmental levels of the sample.
CHAPTER II

REVIEW OF THE LITERATURE

The Nature of Teacher Preparation Programs

Teacher preparation is a complex process. Many factors contribute to the overall success or failure of this important endeavor. In general, however, research indicates the effectiveness of these programs is hampered by a wide range of factors.

Perhaps the most critical factor is the low funding levels for teacher education programs. Typically, these programs receive only 50% as much funding as other undergraduate programs. In fact, the per pupil expenditure for undergraduate teacher education students is only 65% of what is spent on the average public school pupil (Howey, Matthes, and Zimpher, 1985).

Research studies in this field are also poorly funded; moreover, many of the existing programs typically do not base their curriculum on the research that is available. Teacher education “suffers from a perceived weak knowledge base, continues to be viewed as a non-profession, is weak politically because it serves women and children, and cannot be selective about its clients” (Howey, Matthes, and Zimpher, 1985). Oftentimes even the researchers do not respect the teaching profession. “The prevailing view among most researchers is that teachers have
experience, while academics have knowledge” (Feiman-Nemser and Floden, 1986).

Another concern troubling teacher education is that a number of studies point to the poor academic backgrounds of teacher education majors. A high percentage of students in the bottom quartile of their high-school class pursue teaching as a profession (Howey, Matthes, and Zimpher, 1985). In 1961, Drumheller found that secondary school counselors “were 24 times more likely to recommend students characterized by average ability, limited finances and lower social and economic status to enter a teacher’s college rather than a liberal arts college” (In Howey, 1983, p. 27). Furthermore, the more academically talented students are more likely to leave teaching than students of low ability (Howey, Matthes, and Zimpher, 1985).

Most undergraduate programs require little beyond the minimal state requirements. According to Howey (1984), teacher education programs are “characterized by their brevity” and “commonly involve less instruction than semiskilled trades.”

One area that many teacher education programs have recently expanded is the number of hours of pre-student teaching and student teaching experiences (Howey, Matthes, and Zimpher, 1985). However, some research suggests this experience is often poorly set up and planned and that often student teachers find their preservice training to be at odds with the real-world classroom.

British and American studies seem to provide overwhelming evidence for the position that the impact of the college is ‘washed out’ by school experience. The only debate seems to be over which particular socializing agents or mechanisms play the greatest role in
reversing the impact of the college. Zeichner (1980) has outlined various explanations which have been offered in the literature for the shift in teaching perspectives that occurs with the onset of school experience. Cooperating teachers and others with evaluative power over student teachers and teachers (Edgar and Warren, 1969), the ecology of the classroom (Copeland, 1980), the norms of schools, (Hoy and Rees, 1977), teaching colleagues (McPherson, 1972) and pupils (Spradbery, 1976) all have been seen to play major roles in the reversal of views framed at the university. (Zeichner and Tabachnick, 1981, p. 7-8)

But Zeichner rejects the "social puppet" view of teacher socialization during field-based experiences. "If we want field-based experience to contribute to the development of thoughtful and reflective teachers then we must begin to focus our concerns on the quality of these experiences as they are actually implemented in the field" (Zeichner, 1980).

To supplement the undergraduate and student teacher experiences, some schools have initiated mentoring to ease the transition of the new teacher and integrate her into the school setting, although this concept goes against the unwritten rule about asking for or getting advice on techniques from colleagues. (Feiman-Nemser, and Floden, 1986). According to Griffin (in Howey, 1988) these programs typically have the following problems:

1. Teaching is increasingly contained by narrow conceptions of teacher behavior;
2. Expectations for teachers, typically derived from recent research into teaching effectiveness, are commonly pitched at the level of technique; and
3. Policy mandates for certification, proposals for rewarding meritorious behavior and claims about mastery are currently more often based upon conceptualizations of what might be called 'microbehavior' than they are upon the teacher as a total professional. (In Howey, 1988, p. 14)

Too often, a teacher is evaluated by the average test scores of her class. It is never possible to reduce a teacher’s performance to a set of numbers; but, in the complete classroom of the 1990s, scholastic achievement will be just one of a number of important measures of a quality teacher.

In short, our teacher education programs face poor funding, low prestige, poor academic programs, field experiences that may nullify academic training, and induction programs that over-stress technique and ignore the broader aspects of teaching. These problems plague the programs that prepare our teachers. The changing demographics of our schools, combined with the political and social climate, present new challenges for teacher education programs.

The Role of Cognitive Development in Teacher Education

The context for this study is the question of the value of stimulating cognitive development in a teacher education class. In the next section, additional issues being raised by demographic changes in the schools will be presented.

According to Howey (1983), most graduates of teacher education programs admit they are not trained in the following: “diagnosing student needs, understanding the legal, political and organizational dimensions of schooling, and working with both economically disadvantaged and multi-ethnic students.”
The ability of a new teacher to respond to a diverse class of students is at the root of the issue of the adult development of teacher candidates. Projecting into the next 25 years, it is clear that most teachers face not only the normal intellectual diversity of a public school classroom, but will also face a growing cultural diversity. The challenge will be formidable; and if the structure of teacher education programs can be adapted to assist our future teachers in developing this sensitivity, we must begin to move in that direction.

This question is of particular relevance in this study because children's literature has been a tool for dealing with cultural diversity in the classroom. Textbooks and standard curriculums cannot meet the increasingly diverse educational needs of the American public school population. Literature offers an instructor a much wider variety of resources from virtually every cultural and economic perspective. This instructor/researcher stresses to classes of generally white, middle-class teacher education students that multicultural literature is important regardless of the educational setting in which they will be teaching. This literature can help them meet the needs of children from a variety of backgrounds and sensitize suburban, middle-class children to the diversity that exists within our society.

If present trends continue. . . the public schools in 2000 will have substantial numbers of minority, low income, and handicapped students. An increasing number of cities (and states) will have schools where the majority of students will be characterized by one or more of these attributes (that is, minority, poverty, handicapped). (Haberman, 1984 p. 489)
The demographic data on students contrasts with the trends projected for teachers. "The National Center for Educational Statistics (1983) reported that 91% of recent bachelors degree recipients and those newly qualified to teach were white, non-hispanic: 6% were black and 1.7% were hispanic" (Howey, 1983). Further, the already low percentage of black teachers (12.5%) is "projected to decline" to 5% by 1990 (Howey, Matthes and Zimpher, 1985).

The largely white, monolingual, and parochial background of these beginning teachers appears generalizable. For example, when we asked teacher education students . . . about preferences in terms of the context in which they would like to teach, only one in three suggested they would prefer a multi-cultural setting, with only 12% expressing a preference for an urban setting. Given their background this should not be surprising . . . Research and development into teacher education, which has as its ultimate goal improved practice, cannot ignore changes in the larger society which have obvious implications for the mission of schools and the roles of teachers. (Howey, 1983, p. 28)

These demographics and preservice student attitudes underscore the challenge facing teacher education programs today. Will it be possible to prepare these prospective teachers for the realities that they will be facing? Sharon Oja, who has experimented with Action Research in-service programs, identifies the challenge for overall professional development: "Teachers today are expected to meet the demands of students from diverse backgrounds and students with widely varied learning styles, to cope with increasing numbers of main-
streamed special education students and increased pressure from parents that all students succeed” (1980).

The prospects for education may appear grim when most preservice teachers are entering a market very different from the one they envision or desire. The number that will become disillusioned and leave teaching may increase. In these statistics we can see why academics and pedagogical theory alone will not be able to meet these challenges, as Howey and Strom (1987) explain:

The world in which they (teachers) begin teaching will be in many ways different from that in which they were prepared. These changes will be reflected in schools, in community expectations, in materials, in pupil needs, in subject matter, in curriculum, in instructional equipment and materials, and in school organization among other things. (p. 77)

In this context, it is obvious that knowledge alone is insufficient for effective teaching. What predicts success is what David Hunt refers to as the “three ‘Rs’, responsiveness, reciprocity and reflexivity” (Hunt and Joyce, 1967). The successful teacher learns to “read” the student’s needs and “flex” or adapt to these needs.

According to Hunt and Joyce, “The occurrence of a reflective teaching pattern is directly related to the trainee’s conceptual level, i.e., the higher conceptual level the greater occurrence of a reflective pattern.” As research progresses, skill in nurturing cognitive development will perhaps become a staple of the teaching profession. However, much more research will be required before the role of this endeavor is more clearly defined. Clearly, teacher education pro-
grams need to be heavily involved in this research. Unfortunately, only about 20% of these programs are involved in any formal research (Howey, 1983).

In reviewing past research efforts in teacher education, Zimpher and Ashburn agree that research efforts in general have been inadequate. Citing Turner's (1975) conclusion that "the amount of dependable information available compared to the amount needed to formulate more effective policies and practices in teacher education is miniscule," they go on to quote a number of researchers with similar concerns. Koehler (1984) observes: "A review of teacher education research typically begins with a lament concerning the lack and/or poor quality of studies of preservice teacher education" (In Zimpher and Ashburn, 1985).

Cognitive development is beginning to be explored across the field of professional development for teachers. Zimpher (1988) cites knowledge of cognitive development as a critical factor in any program for teacher leaders. Howey, Matthes, and Zimpher (1985) list Glassberg (1977), Sprinthall & Theis-Sprinthall (1983) and Oja (1984) as "among those that have done research in this still embryonic field of study."

There is some comfort in considering that the study of adult development and the nurturing of cognitive development in an educational setting is a much larger field. Much of the ongoing research in other related fields can be considered complementary, although clearly its relevance for teacher education must be confirmed through appropriate research in preservice training programs.
Theories of Adult Development

The cognitive developmental family of theories can be very helpful in the practice of college student development. Persons at different stages or levels apparently learn in different ways; that is, they learn best in different types of environments. Cognitive developmental theories, especially their information on how change takes place, can help us design appropriate learning environments for different students and they can do so across many content areas (Rodgers, 1980, p. 34).

The "family of theories" Rodgers refers to was developed relatively recently; however, these theories reflect Dewey's influence and also Piaget's.

We have here, I think, the explanation of the success of some teachers who violate every law known to and laid down by pedagogical science. They are themselves so full of the spirit of inquiry, so sensitive to every sign of its presence and absence, that no matter what they do, nor how they do it, they succeed in awakening and inspiring like alert and intense mental activity in those with whom they come in contact. (Dewey, 1904, pp. 23-24)

Thus John Dewey eloquently describes the elusive ability of some teachers to awaken and inspire their students, even in spite of their failure to respect all aspects of their formal training as teachers. In "Relation to Theory to Practice in Education," he argues that teacher education too often suffers from rote following of set principles without paying attention to the actual learning process. This mechanical approach, in attempting to create a formula for success, fails to
appreciate or pay attention to the roots of effective teaching.

By identifying that there is more to effective teaching than following "pedagogical science," Dewey opened the doors to research into the cognitive development process. What motivates students to learn? How do teachers sense what each student needs, and how do they attempt to respond to the various learning styles in their classrooms? If we could define, measure, and even promote these qualities among students in teacher education programs, we would be making real progress towards creating an effective educational system.

What Dewey (1904) recognized in his early work was that successful teaching had much less to do with pedagogical skill than previously thought. He noted, "How often do candid instructors in training schools for teachers acknowledge disappointment in the later career of even their more promising candidates!" But what are these elusive qualities that an individual must possess to become an effective teacher?

According to Dewey, traditional training could lead to effective teaching only when the teacher incorporated this academic background with his or her own common sense. He even advised that when in doubt, the teacher should let his common sense rule.

When a teacher finds such theoretical knowledge coming between him and his own common sense judgement of a situation, the wise thing is to follow his own judgment — making sure, of course, that it is an enlightened insight. For unless the professional information enlightens his own perception of the situation and what to do about it, it becomes either a purely mechanical device or else a load of undigested material. (Dewey, 1933, p. 276)
Looking back with the benefit of a half-century of educational research, we can appreciate the depth of Dewey's insight into the nature of effective teaching. He defined many of the characteristics that research now shows should be integral to an effective teacher's approach. "Flexibility, ability to take advantage of unexpected incidents and questions" presages Hunt's dictum of "read and flex." Dewey stressed drawing from the pupil's own experience in presenting academic material, a point echoed in one of the main components of Developmental Instruction (Widick, Knefelkamp and Parker, 1975). "How can the topic be individualized; that is, how shall it be treated so that each one will have something distinctive to contribute while the subject is also adapted to the special deficiencies and particular tastes of each one?" (Dewey, 1933). Dewey's question here defines the need for cognitive development theory.

Dewey supported the concept that learning is an active process; indeed, learning through doing was at the core of his educational philosophy. Dewey's research laid the basis for the work of Jean Piaget, who is considered to be the "foremost contributor to the field of intellectual development" (Ginsberg and Opper, 1979). Dewey anticipated Piaget's work when he confronted the notion that the child's intellect could be seen as a smaller version of an adult's: "The boy was a little man and his mind was a little mind—in everything but size the same as that of an adult. . . . Now we believe in the mind as a growing affair, and hence as essentially changing, presenting distinctive phases of capacity and interest at different periods" (Dewey, in Sprinthall and Sprinthall, 1987, p. 20).

Again, Dewey's insight was on the mark, but it took the research of Jean Piaget to explain the process of intellectual growth in children. After years of painstaking observation, Piaget identified specific stages of intellectual develop-
ment. Like Dewey, Piaget also noted that progress through these stages are the result of an active learning process. In essence, Piaget's research concluded that activity produces cognitive growth, or simply, intelligence equals activity.

Piaget believed that the teacher's role is to "present the subject to be taught in forms assimilable to children of different ages in accord with their mental structures" (Piaget, 1970). He defined four stages of growth: the sensorimotor (birth to 2 years), preoperational (2 to 7 years), concrete operational (7 to 11 years), and formal operational (11 years and above). Each stage represents a broad period of growth. Growth occurs as the result of a process Piaget dubbed equilibration. A child assimilates information that offers continuity with previous experience and accommodates new information that requires a revision of previous perceptions. The act of balancing assimilation and accommodation is the process of equilibration.

It is of interest here that Piaget did not believe it was desirable to use education in an attempt to speed up development. Perhaps it should be noted that he referred to this issue as "the American Question." "The first question I am always asked in the United States is, 'Can one accelerate these stages?'" In Piaget's opinion, the answer is, no, you can't; the child will move on when he or she is ready for the transition (Sprinthall & Sprinthall, 1987).

Nevertheless, Piaget clearly believed the educational environment should offer opportunities for cognitive growth.

Certainly the major implication of Piaget's framework is that the curriculum should not take cognitive development for granted. On the contrary, the curriculum should provide specific educational experiences, based on the children's developmental level, to foster
growth. This is particularly true for the final stage, formal operations. These experiences should offer the child a slight mismatch or learning by exposure to a moderately discrepant environment . . . . The end result of such experiences is the gradual development of more complex cognitive structures, or learning sets. First growth occurs within a particular stage as a result of small discrepancies and slow equilibration. Then there is movement to the next stage, followed again by a new set of mismatches and the slow incorporation for growth within the new stage. (Sprinthall & Sprinthall, 1987, p. 113)

The groundbreaking work of Dewey and Piaget has been the basis of a number of theories of adult development that have been researched over the last 30 years. The field has broadly reported that high cognitive development in adults is a reliable indicator of a student’s future ability to achieve success and to cope with the pressures of life. According to Sprinthall and Theis-Sprinthall, "Traditional measures of academic/scholastic aptitude do not predict success while estimates of cognitive development do" (1980).

A large sample study of preservice teachers found that the "level of psychological development as measured on the Erikson system of identity formation was by far the most powerful predictor of multiple measures of effective classroom teaching" (Theis-Sprinthall, 1984).

A review of a number of studies using Hunt’s conceptual systems theory, Kohlberg’s moral development theory, Loevinger’s ego development theory, and others show "that persons judged at higher stages of development function more complexly, possess a wider repertoire of behavioral skills, perceive problems
more broadly, and can respond more accurately and empathetically to the needs of others” (Sprinthall, Theis-Sprinthall, 1980). After reviewing thousands of studies, Kohlberg concluded that "academic achievement made no independent contribution to successful life adjustment” (Sprinthall, Theis-Sprinthall, 1980).

On the other hand, "there appears to be a direct relation between how a teacher understands the subject matter he teaches and his teaching” (Parsons and Holt, unpublished manuscript). Cognitive development is a major factor in determining the effectiveness of a teacher. If a teacher understands his world on a high cognitive level, then he will be able to explain his knowledge on a low cognitive level (a set of rules) or on a high cognitive level (a way of thinking about problems). Teachers on a high cognitive level are able to adapt their approach to the student’s needs. If the student feels more comfortable with rules, then the material can be presented in this manner. As mentioned before, effectiveness depends on the teacher’s ability to “read and flex” with his students.

In choosing an adult developmental theory for a research study, several criteria should be taken into consideration: (a) the validity of the scheme based on multiple research studies, (b) the applicability of the theory to the intended area of study, and (c) the availability of valid and practical measuring instruments.

Although there are schemes based on moral development (Kohlberg), ego (Loevinger), conceptual (Hunt), cognitive (Perry), and variations on each, two stand out as the basis of a substantial body of research. No adult development scheme has been as thoroughly researched as Kohlberg’s Stages of Moral Development (Kegan, 1979). Kohlberg began to do research on how adults think at Harvard in the late 1950s, basing much of his research on Piaget’s work in the
Moral Judgement of the Child (1979). William Perry’s work in cognitive development paralleled Kohlberg’s, also taking place at Harvard and culminating in the publishing of Forms of Intellectual and Ethical Development in the College Years in 1970. Although Perry is the focus in this study, Kohlberg’s research on moral development and its implications for teacher education will be discussed later in the chapter.

In the late sixties, William Perry published his findings on the changes college students experienced as they progressed through their four years of studies. His population was drawn from Harvard and Radcliffe undergraduate students. He originally postulated that changes in their development in thinking over this period were due to personality differences. As he accumulated more data, however, he began to see similarities in development and changed his analysis. What he was observing were further stages (positions) in intellectual development. Perry, then, developed a set of cognitive structures that explain “how an individual will perceive, organize and evaluate experiences and events in their life and less directly how s/he will behave and feel in those events” (Rodgers, unpublished manuscript).

Perry’s positions are cognitive structures that represent different ways of perceiving, organizing, and evaluating knowledge and values. They assume persons at different positions have dissimilar ways of learning and consequently may learn more easily in different environments.

Perry’s positions are sequential (following an order) and hierarchical (building on each other). As in Kohlberg’s stages, regression is considered extremely rare. However, when faced with a stressful environment, such as a freshman arriving at college, a temporary regression to dualism may occur.
Like Piaget, Perry postulates that people seek cognitive equilibrium in each position; but when the scheme no longer works, the disequilibrium puts them in a state of transition onto the next position of development.

Perry proposed nine Positions of Intellectual Development for people. Broadly speaking, Perry categorizes his first three positions as dualistic, particularly Positions 1 and 2; and the second three (4, 5, and 6) as relativistic.

In Position 1, the student views the answers to questions as known; that is, there are right answers that the authority knows. The student's position is to receive this truth. Position 2 opens the window to allow other opinions and a slight consideration of doubt. A person in Position 3 sees the world of truth and the authority as dominant but acknowledges some uncertainty and openness to multiple answers, thus signaling the transition to Relativism.

Relativism broadly encompasses Positions 4, 5, 6 and views knowledge as contextual. Absolutes of right and wrong are questioned. In Position 4, truth is still a part of the person's intellectual development. Where uncertainty prevails, it is clear that people's opinions differ. In the pivotal phase, Position 5, all questions of value and knowledge are seen relatively within the context of the situation, although in unique cases, dualism surfaces as the structure chosen to make a decision. In the transition to Commitment in Relativism, Position 6, the "dualistic framework does not assimilate the expanding generalization of Relativism" (Perry, 1970). We make a "commitment to commitment itself but not to anything particular yet" (Moore, 1982).

Perry sees his positions as necessary for a person to develop maturity. "For most students, their address to these challenges as they experienced them . . . seemed to represent a coherent development in the forms in which they
functioned intellectually, in the forms in which they experienced values and in the forms in which they construed their world” (Perry, 1970).

Perry developed measures to identify the dominant tendency within which a person chooses to operate. A person’s growth is generally steady, occurring in surges along the Positions. The alternatives to growth are temporizing (pauses) and retreat and escape, which result in a delay in maturational development.

Perry’s work makes a significant contribution to education. If faculty were able to identify the level at which students were operating, they could adjust their teaching according to the learner’s point of view. The individual learner is the source of the meaning of the content.

Developmental Instruction

Lee Knefelkamp, Carole Widick, and Clyde Parker designed a model for Developmental Instruction that attempted to define a set of goals for classrooms organized around promoting growth along the Perry scheme. These goals can be summarized as follows: (a) to achieve a similar level of content/concept understanding as in more traditionally designed classrooms, (b) to achieve a higher level of student satisfaction through providing the material in a more accessible-format, and (c) to achieve some growth along the Perry scheme.

Widick and Knefelkamp resisted developing a manual of Developmental Instruction. Rather, they saw the Developmental Instruction model as a: sort of road map that restricts the description of the instructional effort to directions and pathways but omits the topography and the
give and take of a classroom. The use of theory requires a parallel artistry: a counselor's intuitive sense and capacity to listen, empathize and respond at many levels. (Widick and Simpson, 1978)

Obviously, one hopes that whatever other objectives are achieved using this model, the content/concept understanding will be enhanced. However, improving understanding in these areas is not a primary goal. As mentioned earlier, the success of students is more directly related to their ability to respond to the complexities of their environment, and this capability is not dependent on academic achievement.

On the other hand, it is expected that an instructor's ability to match the individual learning needs of each student will result in a greater level of student satisfaction. Widick (1978) states that a course designed around a Developmental Instruction model "was a positive experience for most of the students." In her treatment group, the students seemed "almost excited" about coming to class. Of more significance, the highest number of positive responses came from students in the matched treatment.

Touchton (1978) found that students in the sections taught using Developmental Instruction "consistently showed higher satisfaction levels" in the areas of instructor competence and a feeling of their own competence. They also responded positively to the structure of the course and ranked the course as valuable. Baxter Magolda (1987) cautiously confirms that in her research the students were "more satisfied with course designs that match their cognitive developmental level." Trent and Cohen (1977) cite among the key criteria for an effective classroom the encouragement of class discussion and the presentation of diverse points of view. Seldin (1988) also identifies class discussions as a positive factor
in achieving a higher level of student satisfaction. He recommends a qualitative evaluation to measure this satisfaction: "Pay particular attention to students' written comments to open-ended questions, so that raters can respond to the questions in their own words" (Seldin, 1988).

The creators of the Developmental Instruction model (Widick, Knefelkamp, and Parker, 1975) name four areas of the classroom environment that can affect the learning process, depending upon the student's position along the Perry continuum: (a) degree of structure in the learning environment, (b) degree of diversity in the learning tasks, (c) type of experiential learning, and (d) amount of personalism in the learning environment.

In examining the learning environment one needs to look at the roles of students, teachers, peers, evaluations, and the intellectual stage the student prefers. Utilizing Perry and the Developmental Instruction Model, an instructor would obviously teach differently to different students. The Developmental Instruction Model "provides a powerful tool for college faculty to understand better 'who' their students are from a cognitive perspective as well as to analyze the learning environment of their classrooms" (Moore, 1982).

Touchton et al. (1978) explain how a teacher would adapt the method of instruction to the dualistic learner, for example: "For a dualistic student you would challenge the student through increasing the diversity and the amount of experiential learning in the classroom. The support would be provided by the high degree of structure in the classroom and the personal atmosphere provided to the students" (p. 158). Widick (1975) cites Perry, who "found that the advancement of dualists resulted from confrontation with diversity; whereas relativists needed a sense of community support in moving to commitment." Wid-
ick explains how these differences can be accommodated: "If we are aware of the general patterns associated with different stages; then it should be possible to design specific strategies which more adequately 'match students' developmental needs." Perry sees underlying structures in his scheme that tie the different cognitive development structures together. Issues such as which structure is most useful for a particular application or more refined questions such as whether Kohlberg as revised by Gilligan or Perry as revised by Kitchener and King will continue to be debated. As we move toward resolution of these issues, research into fostering cognitive development and its impact on teacher education must go on nonetheless. There appears to be little question that higher cognitive development correlates with more effective teaching, but studies such as the one proposed by Parsons and Holt will help to define the practical relationship between the cognitive level of a preservice teacher and her future effectiveness on some specific area of teaching.

The study of the Perry scheme itself appears to benefit teachers in developing more flexible curriculums to match the variety of needs in their classes. Sprinthall and Theis-Sprinthall (1983) point out that good teachers have been doing that all along:

Good teachers have probably known all these ideas at least intuitively for over 2000 years. To start where the learner is and gradually challenge and support after all is at the heart of effective instruction. Recent theory and research studies present us with a more articulated version of this ancient truism. (p. 94)

The specific research that relates to teachers' openness to change, their coping mechanisms in classroom incidents, and their openness to cultural differ-
ences points to the value of fostering cognitive development. As the measuring instruments continue to be developed and refined, consideration should be given to using these tools as a means of evaluating and recruiting teacher education students. As our society becomes increasingly diverse, the ability to deal with cultural differences will be an essential quality for successful teaching.

Theis-Sprinthall and Sprinthall (1987) present arguments on the value of developmental research in the education of preservice teachers. They correlate Hunt’s conceptual development stages A, B, and C with Kohlberg’s stages 3, 4, and 5. Kohlberg’s research concludes that young adults in the 20-22 and 26-28 age range test out as 40% stage 3 (Mode A), with an equal number at stage 4 (Mode B) (Theis-Sprinthall and Sprinthall, 1987). Hunt and Joyce, Murphy and Brown, and others have shown that “effective classroom teachers must be able to function at least at a Mode B level” (1987). The challenge then is to prioritize developmental growth as a goal of teacher education programs. Currently there is very little consciousness of this need reflected in existing programs. Theis-Sprinthall and Sprinthall state that “it is most doubtful that our current potpourri of politically organized teacher education programs and randomly supervised beginning teachers really demonstrate any growth.” They cite Howey’s assertion that “there is very little logic and apparently no research evidence to support the current highly general approaches now common to teacher education” (Sprinthall and Theis-Sprinthall, 1980).

Perry (1980) sums up the goal of this research when he suggests that “the teaching and curriculums be optimally designed to invite, encourage, challenge, and support students in such development.”

The focus of this study is on a children’s literature course. Perry’s Positions
of Intellectual Development were chosen for use in the course because they deal specifically with the complexities that any teacher will face in meeting the academic needs of her students. Literature offers a teacher the ability to meet a variety of student needs. Currently in American education, there is a growing movement to incorporate literature and process writing in the classroom. This "whole language" approach to teaching offers freedom from the traditional structure of a textbook and tremendous potential in many subject areas. Implementing such a flexible curriculum requires a highly skilled teacher who has the ability to respond to a diversity of needs. In the context of available research, it can be assumed that a teacher with a high cognitive developmental level will have more success in this type of complex instructional setting.

The Perry scheme and the Developmental Instruction Model have been used in a number of content areas and have been adapted to courses or curricula in peer training (Clement, 1977), career education (Touchton, 1978), history (Widick and Simpson, 1978), math (Buerk, 1981), engineering (Culver and Hackos, 1981), science teaching (Allen, 1981) and English drama (Sorum 1978).

Stimulating and Measuring Development

Until recently, measuring a person's position on the Perry scheme was problematic. Achieving an accurate assessment required lengthy interviews and evaluation by trained raters. A new instrument, the Measure of Epistemological Reflection (MER), has helped to alleviate the cost of expensive testing systems previously used to measure cognitive development. The MER (Taylor & Porterfield, 1982) "was developed to provide specific stimuli and a standard scoring
procedure to reduce the degree of inference necessary to assign a Perry level” (Baxter Magolda, Porterfield, 1988). Further, Baxter Magolda points out that the correlation of .93 between MER and interview scores “clearly indicates that assessment of intellectual development with the Measure of Epistemological Reflection is consistent with assessment with a more open-ended interview format” (1987). According to Baxter Magolda and Porterfield, the designers of the MER, “Collectively the studies . . . provide strong support for the MER as a reliable and valid measure of intellectual development on the Perry scheme. Exact domain agreement, the most stringent test of reliability, varied from moderate to high across samples” (Baxter Magolda and Porterfield, 1988).

Perry’s work on intellectual and ethical development and the subsequent creation of the Developmental Instruction Model provide educators with specific evaluative tools that explain the needs of students at different intellectual levels. The addition of the MER makes research into the efficacy of these approaches more feasible. Perry (1981, p. 102) reports that teachers “who have simply tuned their ears to the distinctions among modes of thought . . . have found themselves able to distinguish students in the major levels of development in vivo.” Perry adds that by following Knefelkamp’s model, “they have been able to create two or three combinations of different supports and challenges appropriate to the major groupings in the class.” Presumably, the teachers Perry refers to would be on a high cognitive level themselves. Being able to “tune their ears to the distinctions among modes of thought” appears to be precisely the type of skill teacher educators hope to foster in the professional development of teachers.

Perry originally did not see his work as a means to stimulate student’s cognitive development, however:
I felt a deep aversion to 'application' in the sense of transforming a purely descriptive formulation of student's experience into a prescriptive program intended to 'get' students to develop . . . Lee Knefelkamp took the initiative in challenging me on both these matters and I joined in a battle that I have found edifying to lose. (Perry, 1981, p. 107)

Perry explains that such a program "is helpful to the extent that it contributes to the ability of planners and teachers to communicate with students who make meaning in different ways and to provide differential opportunities for their progress" (Perry, 1980). Perry's concern is that the instructor might become a slave to theory. He sees a danger in getting lost in the abstract theory and believing that "theories govern events." Some researchers, he believes, think "that the higher and more abstract the concept, the greater the truth, which leads him (the researcher) upward toward eternal verities" (Perry, 1978).

Perry cautions those in the field of cognitive development to avoid taking the attitude that they are mechanically affecting a student's growth. Hunt (1976) echoes his caution about overdependence on theory. "Contrary to what I expected, the theory is much less important than the teacher's capacity to adapt to students through what I have called 'reading and flexing.'"

Joyce suggests that rather than concentrating specifically on promoting cognitive growth, we "concentrate on teaching teachers to acquire a broader repertoire of teaching skills which are then 'on call' rather than on attempting to modify the conceptual development level" (Hunt and Joyce, 1967).

One reason some researchers are uncomfortable with promoting cognitive growth is that a natural distance exists between an abstract theory and the real
world. Theories are a synthesis of reality and necessarily result in a simplification of it. The above researchers seem to fear the intellectual will become caught up in the theory and will fail to notice the subtleties that exist in any human environment. As Parker states, "It is highly unlikely that any given body of research and theory can fully account for what happens to students in the college environment" (1978).

Although an important caveat, obviously none of the researchers is questioning the utility of theory in achieving practical ends; yet part of this reluctance to use theory as a tool for change stems from the resistance to its inherent paternalism. Perry recoils at the idea of applying such theories, "perhaps because [he] had good old nineteenth-century 'character development' applied to [him]" (Perry, 1978). Perry provides what is perhaps a good middle ground when he says, "I may hope to 'foster,' but I will remember that this is a very different matter from 'getting you' to grow" (Perry, 1978).

The need for this sort of effort is underscored by the fact that 80% of teachers continue to use lecturing as their primary teaching method (Oja, 1980). All the educational needs of today's classrooms cannot be met with a lecture-based approach. Indeed, lecturing as a primary method of instruction was rejected by Dewey and Piaget in favor of more active forms of teaching.

The traditional concept of the teacher as the purveyor of knowledge is giving way to the more dynamic view of the teacher as facilitator: "As managers of the learning process, teachers require specifically designed theory and training, which is qualitatively different from that traditionally offered in preservice and inservice teacher education programs" (Oja, 1980).

At least some evidence points to literature as a promising place to start in an
effort to nurture developmental growth. Widick (1975) notes that Perry "found that students were able to use relativistic reasoning in approaching the humanities before they could do so in relation to the sciences."

In reviewing the literature, it is important to note that the proliferation of theories of various forms of development has been shown to have surprising parallels. Consequently, what we learn from study in one area may be useful in other areas.

Parsons and Holt are beginning to conduct some research into designing teacher education curriculums that build the cognitive level of student teachers (unpublished manuscript). Their research will draw upon four development schemes to test whether growth in these areas can be stimulated. The four schemes will include Moral Development (Kohlberg), Ego Development (Loevinger), Reflective Judgement (King and Kitchener), and Aesthetic Development (Parsons).

One of the interesting aspects of this proposal is the question of how these various theories interrelate. With the field of adult development still relatively young and quite diverse, there is a need to establish which cognitive developmental structures are most useful in predicting teacher effectiveness. Parsons and Holt feel that each of these four has a particular relevance to the teaching profession. The King and Kitchner model chosen for use in this study is based on Perry's work and is most relevant to "the organization and presentation of subject matter" (Parsons and Holt, unpublished manuscript).

Considering the wide variety of cognitive structures, attempts to focus research in teacher education on appropriate models are welcome. Hunt's conceptual levels A, B, and C correlate well with Kohlberg's stages 4, 5 and 6. Con-
ceptual thinking and Perry's work are also closely related. While "none of these concepts are synonymous, all of them assume that an individual's actions are governed by an internal mediating cognitive process which will vary by age and stage of development" (Glassberg and Sprinthall, 1980).

Indeed, there is some suspicion that the various measures of cognitive development, despite their individual merits, have similar messages regarding the significance of the developmental process. Perry (1980) believes these theories can be compatible and not merely parallel:

I find hope in the confluence of developmental studies. I do not mean parallelism in their 'stages' which would be a dubious virtue in theories that should be complementary. I mean that whether the investigator starts from empirical observations made largely from outside (as Loevinger and Kohlberg did) or starts with empathic participation in the phenomenal experience of individuals (as we did in this study) the end products tend to converge... This confluence suggests that the centrality of the individual learner as a maker of meaning may be a radical notion but quite likely congruent with the facts. (p. 108)

Loevinger and Wessler point out that for the most part, "ego, moral and intellectual development occur simultaneously..." (1970). It is not surprising then that so much of the research using a variety of theories tends to correlate on many levels.

From a researcher's viewpoint, the validity of a theory is based on the body of research that supports it. In adult development theory, Kohlberg's and Perry's work dominate the field in terms of the volume of research conducted and the
general validation of their developmental schemes. Although some questions remain, particularly about the upper stages (5 and 6) of Kohlberg's theory and the relativistic positions (7, 8, and 9) of Perry's scheme, the developmental levels that apply to most college students are well defined, perhaps because both researchers began their work studying the development of college students.

Given the large number of studies based on Kohlberg's scheme, it may be useful to look now at how Kohlberg's research on moral development and the tools developed to measure it can be adapted to teacher education. Kohlberg's research was derived from an undergraduate setting, and numerous studies have examined the moral development of college students in classroom settings. These studies have contributed much to the development of instructional design methodology in encouraging moral development in the classroom. Research shows there are many similarities between the approaches that encourage moral development and the approach that Dewey suggested in his questions for teachers in 1933.

Originally, Kohlberg and others experimented with posing a series of "dilemmas" to challenge the reasoning of students. Moshe Blatt showed that after a semester of discussions, "one third of the students moved up one stage as compared to a control group which did not change in the same period (Kuhmerker et al., 1980).

Blatt's findings offered a breakthrough in an area where previous intervention efforts had met with little success (Rest, 1974). The approach Blatt used has since been greatly improved upon. James Rest remarks that Blatt's approach lacked creativity: "A regimen of dilemma after dilemma is a rather dull academic diet." Rest and subsequent models suggest that "films, simulation games, st-
ries, historical documents, role playing and so forth" can increase the effectiveness of an educational model.

Straub and Rodgers designed a complex curriculum, drawing upon several modalities to test its impact on the moral development of a class of college women. The course focused on women's issues and used techniques Kohlberg developed to create a +1 stage environment. As Straub and Rodgers (1978) explain, "Kohlberg believes restructuring is stimulated if the environment's challenge is one stage above the person's stage of reasoning." Kohlberg and associates "found that students understand but reject examples of thinking lower than their own, fail to comprehend examples more than one stage above their own and prefer reasoning one stage above their existing level" (1978).

According to Kohlberg, the +1 stage environment can be created by using techniques such as "role playing, involving individuals with diverse levels of reasoning, using 'just' classroom structures and focusing on reasoning in all activities" (Straub and Rodgers, 1978). Straub and Rodgers used these techniques and structured the class in four phases developed by Blocher and Schaffer (1971) to "establish relationships, to develop communications, to restructure cognition, and to change overt behaviors." They chose this four-phase structure because of its compatibility with the course objectives and Kohlberg's methods. Each phase built an atmosphere for growth, culminating in the fourth phase, which involved each student's agreeing to a contract for experimenting with his or her behavior. Seventy-two percent of the students showed an upward shift in this study using the Defining Issues Test as a measuring tool (Straub and Rodgers, 1978).

Straub and Rodgers' results support Rest's (1974) findings that movement is
not always in an upward direction. One subject showed a downward shift, and another had a bi-directional shift (Straub and Rodgers, 1978). Kohlberg (1973, 1971) claimed that movement is always in one direction. However, one or two students showing downward movement may be the result of factors such as the psychological state of the particular students at the times the instrument was administered and may not indicate true downward movement.

Theis-Sprinthall (1984) did a study with supervising teachers that used a curriculum combining aspects of Kohlberg's research and others in the field of moral development and conceptual development. Explaining that the curriculum contained the "conditions needed to promote psychological growth," she used both Rest's Defining Issues Test and the Hunt Conceptual Systems Test to improve the validation of her results. Hunt's test measures conceptual thinking in the same vein as Perry's Positions, that is, "dualistic/concrete thinking through three stages to abstract, multiple frame of reference concepts" (Theis-Sprinthall, 1984).

Theis-Sprinthall conducted a pilot study training course with 10 supervising teachers. She used role playing and strived to create an "optimal mis-match," which can be described as a +1 environment in which the participants are challenged, but not beyond their level of comprehension. The study incorporated careful and continuous guided reflection, a balance between real experience and discussion/reflection, and personal support and challenge. The course lasted two terms, since "studies by Howey, Yarger and Joyce (1978) clearly document the ineffectiveness of brief episodic short course learning" in the stimulation of cognitive growth (Theis-Sprinthall, 1984).

Despite its careful design, the pilot study did not show any significant
improvement in the cognitive levels of the supervising teachers. The participants' feedback indicated that lower-cognitive level students were missing the material, while higher-cognitive level students requested more theoretical readings. The follow-up study revised the curriculum according to these defined needs. With a revised curriculum, a second group of 12 supervising teachers did show significant improvement in their cognitive levels (Theis-Sprinthall, 1984).

Of interest here is the attempt to optimize a curriculum approach from the body of research by "flexing" the course after "reading" students' feedback and then evaluating success with two different assessment instruments. As one student commented, "She (Theis-Sprinthall) modeled the things we were learning to give us a real feel for the methods. She even listened actively when we complained and used some of our suggestions in the next class" (Theis-Sprinthall, 1984).

To illustrate concretely how developmental level affects classroom teaching styles, Witherall and Erickson (1979) measured the cognitive level of a group of teachers and then studied their disciplinary approaches to identify how they corresponded. Witherall used Loevinger's theory of ego development to study the teaching styles of five teachers. Two of the teachers, referred to as Karen and Joyce, were chosen as representative of the differences to be found in developmental growth and the corresponding approaches to teaching.

Using the "Sentence Completion Test" (Loevinger and Wessler, 1970), the researchers rated Karen as significantly higher than Joyce in ego development. Their attitudes about cultural differences were borne out through careful analysis of videotapes of their teaching and personal interviews regarding their approaches to teaching. According to these measures, Karen received the following
rating: Individualistic level (1-4/5), Individualistic level (1-4/5), and Autono-
mous stage (1-5). Joyce was rated as follows: Conscientious-Conformist (1-3/4),
Conformist (I-3) and Conformist (I-3). Explaining Karen, ‘’the more you come
into contact with all the differences we have as people, the more you realize
we’re all the same. We shape our humanness and our feelings—our happiness
and our sadness’’ (Witherall and Erickson, 1979).

Joyce, on the other hand, categorized her students into three groups:

Group A: “These kids are gonna make it—no matter what.”
Group B: “These are the kids you will see in and out of jail.”
Group C: “These are in the middle—they could go either way.”

Beyond the rigidity of this classification, it was observed that all the indi-
viduals from Group A were white, while all but one in Group B were minority
students. When questioned about whether she was conscious of this pattern,
Joyce became uncomfortable and acknowledged that her problems with minority
students “could be due in part to her own fears and expectations” (Witherall and
Erickson, 1979).

This difference between Karen and Joyce dramatically demonstrates the
need for teachers with high levels of ego development. Joyce’s inability to deal
with diversity created a hierarchy of failure in her classroom. In this context the
importance of stressing cognitive development over mere content acquisition
could not be more clear.

Barnes (1989) reports, “The challenge for teacher educators is to create
programs of initial preparation that develop the beginner’s inclination and ca-
capacity to engage in the sort of intellectual dialogue and principled action required for effective teaching." She continues:

Teaching expertise is thus the capacity for principled thought about the particulars of a situation that leads to action. The capacity to reflect on one's judgments and actions in light of their potential consequences for learning is also critical to this expertise. (Barnes, 1989, p. 19)

Feiman-Nemser and Floden (1986) propose one approach to changing teacher preparation based on theories of cognitive development: "Teacher development is considered a form of adult development and effective teaching a function of higher stages."

Although teaching is not unique in the type of personal qualities it demands, a confining interaction with relatively large numbers of students over long periods of time in relatively confined spaces places a premium on the ability to withstand stress, change set, remain open to new ideas, and use information creatively. A variety of observational and laboratory experiences could be provided which vividly portray the dynamic, changing nature of teaching and the need for multidimensional thinking in teachers. (Howey and Strom, 1975, p. 15)

These changes that Howey and Strom recommend are based upon the integration of cognitive development into preservice teacher education programs.
Psychological Types

Perry’s belief that cognitive structures represent different ways of perceiving, organizing, and evaluating knowledge and values (Perry, 1970) fits very well with Isabel Briggs-Myers’ representation of different learning components for the variety of psychological types. Perry’s emphasis on the dissimilar ways of learning (i.e., some students learn more easily in different environments) relates to Myers’ (1986) views on the teacher-student communication modified by type as well as student “liking” or satisfaction.

Myers (1986) states that “growing up” is much easier if the individual has adequate perception and judgement. Types seem to differ fundamentally in the kind of perception and judgement that may be developed. There are differences in interests, values, needs, response to rewards, and satisfaction. Through the position schema, Perry categorizes how people think. The focus for the first three dualistic positions involves the relationship of authority, “correctness,” doubts, and the contextual relationship of knowledge. The ability of a judging psychological type to attend to these thinking facets is different from the ability of a perceiving psychological type. Myers (1986) also states that the development of auxiliary preferences or opposites is important.

Perry’s Position 4, which involves thinking about thinking, can be approached from a linear or a global perspective, depending on the psychological type of the individual. Position 5 involves the relative nature of knowledge within a situation. Introspection as well as detachment is needed. The introverted bipolar component of psychological type fits well with the introspective expectation of Position 5. The detachment focus is more easily accomplished by
the thinking psychological type. Perry states that Position 6 involves infinite contexts, a presupposition easily entertained by the intuitive, who is always looking at possibilities. On the other hand, the extrovert is one who seeks commitment, another component in Perry's Position 6.

The importance of learning content can be seen in the application of Perry's theory, Developmental Instruction. Satisfaction with the learning experience may be related to the teacher-student communication process and liking of the subject. Both of these components may be related to instructional strategies and requirements, which in turn are related to the sixteen psychological types.

Knefelkamp (1974) and Widick (1975) related Developmental Instruction to structure, diversity of learning tasks, types of learning experiences, and the amount of personalism in the learning situation. Each of these aspects of Developmental Instruction has a corresponding relationship to the 16 personality types.

One other aspect of Developmental Instruction, the relationship of content material to increased cognitive complexity, can be related to the developmental issues of psychological types. The movement from a more structured to a less structured situation is related to a sense of control, identification of alternatives, and an ability to move beyond the context of a problem. Certain psychological types find these functional levels easier.

Integrating psychological type theory and Perry's views on Developmental Instruction reveals a relationship between the requirements for structure, interest, satisfaction and instructional methodology. Different psychological types need different instructional strategies and outcomes to meet the prerequisites of Developmental Instruction satisfactorily.
The Myers-Briggs Type Inventory is the most thoroughly researched instrument for determining an individual's personality type. Based on the theory of Carl Jung and developed by Katharine Briggs and her daughter Isabel Briggs Myers, the MBTI tests for four basic preferences:

- **Extroversion/Introversion**
- **Intuition/ Sensing**
- **Feeling/Thinking**
- **Judging/Perceiving**

Each individual is rated on a continuum according to the degree of his or her preference for one trait over the other. There are 16 possible combinations of preferences that make up the basic personality types:

- **E** = Extrovert
- **I** = Introvert
- **N** = Intuition
- **S** = Sensing
- **F** = Feeling
- **T** = Thinking
- **J** = Judging
- **P** = Perceiving

<table>
<thead>
<tr>
<th>ISTJ</th>
<th>ISFJ</th>
<th>INFJ</th>
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<tr>
<td>ESTJ</td>
<td>ESFJ</td>
<td>ENFJ</td>
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The concept of personality type has been controversial in the field of psychology. Jung disagreed with the twentieth-century notion that people are fundamentally alike, but for many years Jung's as well as others' theories were virtually ignored in favor of "dynamic" and "behaviorist" schools of psychology: "Behavior was now to be explained as due to unconscious motives or to past experience or both. The idea of temperament was abandoned" (Keirsey and Bates, 1984).

"The question of whether these preferences are 'inborn' or developed fortuitously in infancy and youth remains unsettled" (Keirsey and Bates, 1984). Keirsey and Bates interpret Jung as believing that they are inborn. Myers, however, believes a preference is established in early childhood. "As soon as children exercise a preference between two ways of perceiving, a basic difference in development begins" (Myers, 1986). The neglected trait becomes "rusty" from lack of use. An individual's type is not a stage of development, although it may change somewhat over time.

The thrust of type theory is that people are different and that recognizing this can improve self-understanding of others. "Jung saw his theory as an aid to self understanding, but the application of theory (like the theory itself) extends beyond the point where Jung was content to stop" (Myers, 1980) "The type concepts are useful whenever one person must communicate with another or make decisions that affect another's life" (Myers, 1986).

In choosing a career, type may be used to help individuals better understand themselves and the type of work they may enjoy. SF (Sensing/Feeling) and NF (Intuitive/Feeling) types are far more likely (81%) to prefer education as a career than ST (Sensing/Thinking) or (Intuitive/Thinking) types. According
to Myers, people “should carefully consider how much use the job would make of their own preferred kind of perception and kind of judgement.”

In making a career change, type may provide a rich source of information or feedback on what occupations may be most compatible for an individual. School administrators are predominantly (86%) TJs (Thinking/Judging) or FJs (Feeling/Judging). Remarkably, counselor education students (79%) fit into only 4 of the 16 possible types (INFJ, INFP, ENFP, ENFJ). (Myers, 1986).

A study of type may be useful in helping educators understand and appreciate the differences among their students. “The translation of sound-symbols is easiest for the introverts with intuition (IN). In contrast the extroverts with sensing (ES) may find the symbols so confusing that they become discouraged with the whole business of going to school” (Myers, 1986). Meyers adds that “their failures may be blamed on IQ or perhaps an emotional difficulty” when the issue is rather the teacher’s poor understanding of the ES type’s differing thought process (1986).

Intuitives tend to perform better on timed tests than sensing types. This tendency includes IQ tests and scholastic aptitude tests. Sensing students tend to reread questions to insure their understanding while intuitives assume their understanding, on the first reading. Consequently, there is a half a standard deviation difference in IQ test scores between intuitive and sensing types (Myers, 1986). Although relying on the test score would lead to an assumption of higher intelligence among intuitive types, Myers concludes that “much of the sensing student’s disadvantage is due simply to their test-taking technique.”

In one study by Mary Budd Rowe at the University of Florida, detailed analysis of tape recordings of science classes were designed to provoke inquiry
about nature. In the first stage of the study, the students' participation was deemed minimal, and it was determined that the teachers had not allowed significant time for students to respond. In a follow-up study, teachers were encouraged to extend the average time they paused for responses from one second to three seconds. The results were remarkable; the number of words in student statements quadrupled, and the frequency of relevant statements tripled:

One result that teachers had not foreseen was that they had a more favorable evaluation of the least promising students. . . . From the standpoint of type, these changes are wholly explicable. The five poorest students would be sensing students who need more time to assimilate the substance of what they have heard. (Myers, 1986)

The study of type and the use of type-testing in a classroom provides a tool and a general philosophy of personality that encourages a tolerance of diversity. Understanding and appreciating differences can provide the basis for greater harmony. In fact, the impetus for Myers' work was the "suffering and tragedies" of World War II. She wanted "to do something that might help people understand each other and avoid destructive conflicts" (Myers, 1986).

Central to this understanding is an acceptance of the existence of type, which continues to be an issue among some professionals in the field of psychology. Part of this resistance is due to Meyer's lack of credentials. However, the research behind the Myers-Briggs Type Inventory clearly establishes it as a credible tool and proves that the 16 types do exist.

Personality type is a description of preferences, not a value judgement, as Meyers makes clear: "Identifying and remembering people's types shows respect not only for their abstract right to develop along lines of their own choos-
ing, but also for the concrete ways in which they are and prefer to be different from others” (Myers, 1986). Since all types are deemed of equal value, there is no concept of stage growth in personality. However, the study of type promotes a complex understanding of human nature that increases the potential for understanding others. The theory underlying the MBTI states that once an individual establishes a personality type, it remains relatively stable over time (Myers, 1971). Mature type development, according to McCauley (1977), includes the following characteristics or attributes: (a) knowledge of one’s personal preferences; (b) development of one’s preferred functions so they are trustworthy and reliable (i.e. sensing, feeling, etc.); (c) respect for as well as development of less preferred functions; (d) ability to appropriately use perception and judgement; (e) ability to effectively function with both extroverted and introverted attitudes; and (f) continued growth and development in all temperament areas.

Each individual needs to be aware of his/her own preferences, since these preferences influence career choices, satisfaction with tasks, and communication with others. Myers (1986) feels that a wider understanding of the gifts of diversity illustrated through the 16 psychological types represents a format to increase an individual’s use of all potentials without the loss of opportunity.

There is a longitudinal research study on the relationship between personality types and cognitive developmental growth (Rodgers, personal communication). The results are speculative at this date, but early results seem to indicate there is differentiated movement according to personality type.
Related Factors

Other factors that could possibly impact on the need for cognitive development models in teacher education programs are the students' background, career orientation, and conceptions of teaching. Howey (1983) addresses this concern: That the great majority of these future teachers are largely unfamiliar with cultures other than the one in which they grew up is reflected in their responses about the types of students they would prefer to teach. Only about 25% of these future teachers indicate they would prefer to teach in an instructional setting where the students would be multi-ethnic.

Lortie's report of his research into teachers in 1975 concludes that they are conservative, largely supportive of the current structure, organization and purpose of school and prefer to do things the way they have done them in the past. He further suggests that teaching is seen by many as but a partial profession into which entry is relatively easy and the methods of teaching largely similar. Many teachers view their role as but a temporary occupation and appear to obtain much of their psychological reinforcement from the day's interactions with students in the classroom. (In Howey, 1983, pp. 30)

Howey's concern is warranted. Most teachers are not prepared to deal with the pressures to change and to cope with the incredible human diversity in a classroom with 30 or more students. The challenge to promote cognitive growth could begin by adopting a developmental focus in preservice programs. What is perplexing—and disturbing—is that teaching is often seen as a temporary job that
can be picked up or dropped at will, when actually it is a craft that takes several years to learn, and more to excel.

Barnes reports that currently (1989) some teacher education programs based on both cognitive science and social learning theories offer alternatives to conventional programs:

Through thoughtful confrontation, programs encourage prospective teachers to question the assumptions and beliefs they have developed as a result of their 13-year 'apprenticeships of observations' in schools. Thus the curriculum is conceptualized and designed to challenge unexamined assumptions about children, learning, subject matter and teaching and to promote new understanding of learning and teaching. (Feiman-Nemser et al., 1987)

Summary

The literature search began with an analysis of some of the problems facing teacher education. Developmental learning focusing on the work of Dewey and Piaget led to a discussion of the theories of adult development, particularly the research of William Perry and Lawrence Kohlberg. The incorporation of these and other theories of adult development into teacher education were reported. The increased importance of teachers with a high developmental level in the context of the changing demographics of the general student population was also discussed. The researcher described the model of Developmental Instruction based on William Perry's positions of cognitive development. Discussion followed about the Myers-Briggs Personality Inventory and its applications to the
Factors that may affect cognitive development, such as the student's background, career orientation, and conception of teaching, were raised as considerations for this research study. The review of literature led into the posing of the three hypotheses and three research questions for this particular study, as stated in the following chapter.
CHAPTER III

PROCEDURES

Review of the Research Questions

This study presents an analysis of issues related to encouraging cognitive development of preservice elementary education students enrolled in a children's literature methods course. Several aspects related to cognitive development were analyzed in this study.

Three hypotheses speculated on the effects of using the Developmental Instruction (Widick, Knefelkamp and Parker, 1975) model in the intervention group: (a) increased cognitive development along the Perry scale as measured by the MER (Taylor and Porterfield, 1982), (b) increased content knowledge acquisition as measured by content tests developed for the study, and (c) increased student satisfaction as measured by two specific student evaluations.

This study also examines three other areas of research to provide a broader context for a better understanding of the nature of cognitive development among preservice elementary education students: (a) The nature of the student's background, career expectations, and preservice experiences relative to a national probability sample of elementary teacher education students and relative to factors that are likely to have an impact on cognitive development; (b) the relation of student personality type to cognitive level and the implications that can be drawn from this analysis; and (c) the relation of the students' conceptions of...
teaching and their cognitive levels.

Setting

The study takes place in a medium-sized (approximately 6,500 undergraduate student population with 650 undergraduate elementary majors), liberal arts university, where the researcher works with elementary education students in the teacher education department. If the question of cognitive development for elementary preservice education students is important in the field of teacher education, then it will also be important for the students enrolled in the children's literature methods courses that the researcher teaches.

Research Design

This is a quasi-experimental, nonequivalent-comparison group design. Both groups (classes) were given pretests and post-tests. The groups consisted of teacher education students at the University of Dayton. These students had registered to take children's literature in two different sections during winter term 1989 and thus were not randomly assigned.

The assignment of X to one group is random and under the control of the experimenter.
The independent variable is the use of the Developmental Instruction (Widick, Knefelkamp and Parker, 1975) model to teach the treatment section of the children's literature course.

The dependent variables are intellectual development as defined by the Perry model and measured by the MER, content knowledge as measured by pre-and post-tests, and student satisfaction as measured by two different student evaluations.

Confounding variables are that the courses are held at two different times of the day, the comparison in the morning and the treatment in the late afternoon. The treatment class meets once a week for two and a half hours (4:30 - 7:00 p.m.), and the comparison group meets twice a week for one hour and fifteen minutes (9 - 10:15 a.m.). Both of these confounding variables will be identified as such in the results.

Internal validity concerns of history, maturation, testing, and instrumentation are controlled, since the effects of these variables would affect both the comparison and the experimental groups. Selection and mortality are controlled for by pretest data.

Since the groups are similar, an internal validity concern of interaction of selection and maturation is unlikely. There were 18 female undergraduate teacher education students in the comparison group, and fifteen in the treatment group. Both groups had the same proportionate numbers of traditional college-age (20-23) students (87% for the treatment and 89% for the comparison group) and non-traditional college-age students (13% for the treatment group and 11% for the comparison group), creating a stratified sample. The analysis of the demographic data for similarity of the comparison and treatment groups in
relation to certain variables (age, academic performance, etc.) is in chapter 4.

The other possible internal validity threat to a quasi-experimental study is regression, which was controlled, since the two groups have similar pretest scores. (See chapter 4 for this data.) An independent t-test analyzed the difference between the student satisfaction ratings for the comparison and treatment sections. The nonparametric Mann Whitney U-test measured the ordinal level of statistical data from the rating scales of the MER.

The external validity threats of interaction of selection and treatment cannot be controlled because the sections were predetermined, not randomly assigned; but the more similar the comparison and treatment groups are on their pretests, the more this threat is tempered. This threat will be evaluated after the pretests have been taken and its potential impact acknowledged in the results.

The students were not aware that they were participating in a research study because the pre- and post-tests were embedded in the course requirements; thus the external validity concern for reactive arrangements was controlled.

Subject Selection

The target population for this study is female, undergraduate, elementary teacher education students at private, religious-affiliated colleges and universities. The experimentally accessible population is drawn from elementary teacher education students at the University of Dayton.

The sample is made up of 15 female, undergraduate, elementary teacher education students in the treatment group and 18 female, undergraduate, ele-
mentary teacher education students in the comparison group who are enrolled in the undergraduate children's literature course, winter term 1989. Five members of both the comparison and treatment groups were randomly selected for interviews to determine the relationship between their cognitive level of development as measured by the MER (Taylor and Porterfield, 1982) and their conception of teaching and learning. The researcher was interested to see whether questions posed about the schools, students, teaching, and learning would elicit responses that would reflect the students' level of cognitive development.

A demographic profile was drawn on this sample to determine its typicality compared with a national sample of elementary teacher education students. In this study, the students were controlled for age; two from both the comparison and treatment groups were nontraditional college-age students, but the others were between the ages of 20-23. Because cognitive development can be affected by age, age was controlled to approximate similarities between the comparison and treatment groups. (See Table 1.)

Table 1

<table>
<thead>
<tr>
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<th>National Average</th>
<th>Treatment Average</th>
<th>Comparison Average</th>
<th>Sample Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Age of</td>
<td>25.1 Years Old</td>
<td>22.7 Years Old</td>
<td>22.1 Years Old</td>
<td>22.4 Years Old</td>
</tr>
<tr>
<td>Elementary Teacher</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education Students</td>
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Gender was controlled in the study because there were no male undergraduate students in either section of the course. In the national sample, 92% of the elementary education students were female; 8% were male (Garibaldi and Zimpher, in press, 1989). See Table 2 for the information on gender.

Table 2

Gender of Elementary Teacher Education Students

<table>
<thead>
<tr>
<th>Gender</th>
<th>National</th>
<th>Treatment</th>
<th>Comparison</th>
<th>Sample</th>
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<tbody>
<tr>
<td>Female</td>
<td>92%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Male</td>
<td>8%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
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</table>

Table 3 explicates the marital status for the national population and this sample population. The sample for this study was limited to undergraduate students, not initial certification students. This could explain the difference between the national population (65% single) and this sample (91% single). Initial certification students often are more nontraditional college-age women returning for training after getting married and having a family. These were included in the national survey, but not in this study.
Table 3

**Marital Status of Elementary Teacher Education Students**

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>National</th>
<th>Treatment</th>
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<tbody>
<tr>
<td>Single</td>
<td>65%</td>
<td>87%</td>
<td>94%</td>
<td>91%</td>
</tr>
<tr>
<td>Married</td>
<td>33%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
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</table>

Tables 4-8 indicate the sample is similar to national teacher education students in racial/ethnic identification (Table 4), students' status (Table 5), students' home community (Table 6), preferred teaching setting (Table 7), and grade point average (Table 8). With these stated criteria, the results of the study could be generalized to a national population of undergraduate teacher education students.
Table 4

**Racial/Ethnic Identification of Elementary Teacher Education Students**

<table>
<thead>
<tr>
<th>Race</th>
<th>National</th>
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<th>Comparison</th>
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</thead>
<tbody>
<tr>
<td>White</td>
<td>93%</td>
<td>80%</td>
<td>94%</td>
<td>88%</td>
</tr>
<tr>
<td>Black</td>
<td>4%</td>
<td>7%</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>Asian</td>
<td>1%</td>
<td>7%</td>
<td>0%</td>
<td>3%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>2%</td>
<td>7%</td>
<td>0%</td>
<td>3%</td>
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Table 5

**Full-Part-Time Students in Elementary Teacher Education**

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<th>Type</th>
<th>National</th>
<th>Treatment</th>
<th>Comparison</th>
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<tbody>
<tr>
<td>Full-Time</td>
<td>93%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Part-Time</td>
<td>7%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Table 6

**Elementary Teacher Education Student's Home Community**

<table>
<thead>
<tr>
<th>Type</th>
<th>National</th>
<th>Treatment</th>
<th>Control</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>15%</td>
<td>20%</td>
<td>6%</td>
<td>12%</td>
</tr>
<tr>
<td>Small Town</td>
<td>35%</td>
<td>33%</td>
<td>22%</td>
<td>27%</td>
</tr>
<tr>
<td>Suburban</td>
<td>28%</td>
<td>33%</td>
<td>50%</td>
<td>42%</td>
</tr>
<tr>
<td>Urban</td>
<td>12%</td>
<td>7%</td>
<td>17%</td>
<td>12%</td>
</tr>
<tr>
<td>Major Urban</td>
<td>8%</td>
<td>7%</td>
<td>6%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Table 7

**Elementary Teacher Education Student's Preferred Teaching Setting**

<table>
<thead>
<tr>
<th>Type</th>
<th>National</th>
<th>Treatment</th>
<th>Control</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>24%</td>
<td>13%</td>
<td>11%</td>
<td>12%</td>
</tr>
<tr>
<td>Small Town</td>
<td>57%</td>
<td>60%</td>
<td>72%</td>
<td>66%</td>
</tr>
<tr>
<td>Suburban</td>
<td>15%</td>
<td>20%</td>
<td>11%</td>
<td>15%</td>
</tr>
<tr>
<td>Urban</td>
<td>4%</td>
<td>0%</td>
<td>6%</td>
<td>3%</td>
</tr>
<tr>
<td>Major Urban</td>
<td>0%</td>
<td>7%</td>
<td>0%</td>
<td>3%</td>
</tr>
</tbody>
</table>
Design of the Study

The researcher taught two sections of children’s literature in the winter 1989 term. The Developmental Instruction (Widick, Knefelkamp and Parker, 1975) model was incorporated into the treatment section for the intervention. The following four major variables were identified by Widick (1975) and Knefelkamp (1974) as the components in the learning environment that either encourage or delay the learning process: (a) degree of structure in the learning environment, (b) degree of diversity in the learning tasks (both in terms of quantity and complexity), (c) type of experiential learning (from concrete to vicarious), and (d) amount of personalism in the learning environment.

If a majority of students are dualistic, then the design prescription is high-structure; at most two to three viewpoints are presented, concrete experiences should move into abstraction, and the course is characterized by high personalism. If a majority of students are relativistic, then the design prescription is low-structure; five to six viewpoints can be presented, experiences are abstract, and...
the course is characterized by high personalism.

In order to control for the difference in level of instruction for the comparison and the treatment groups, every class session was either audio- or videotaped, or an outside observer took notes for feedback to the researcher. The researcher reviewed these materials to insure that the structure, diversity of the content, experiential component, and personalism were maintained for the treatment and comparison groups.

**Researcher's Present Instruction**

The format for the comparison group will follow the traditional format that the researcher uses for college instruction. It is a highly structured teaching approach with assignments clearly delineated and due dates defined.

The class period consists of a lecture on literature, examples of the genres, and small-group discussions. The researcher serves as the "authority" figure, dictating the learning, with the students as passive learners. There is rarely time for whole-group discussions.

The personalism in the researcher's classes is high, but there is always pressure to adhere to the schedule of the syllabus. There is a lot of information to cover, so the class time is tightly controlled. Introduction and personal sharing is part of the beginning of the semester; specific "teasers" help people share parts of themselves (pet peeves, most embarrassing moment, etc.). When the class meets in small groups, the focus is on literature sharing and presentation planning, with little or no time for personal exchanges. Office hours are available for student contact. A small percentage of individual students with personal con-
cerns (not subject concerns) do make use of the office hours.

Experiential learning at this time is limited to the discussions, small-group presentations on the uses of literature in the classrooms, a visit to the materials center, and a field trip to the public library.

The assignment of reading four books per type of literature is still highly structured. The students write up specific informational data, including written comments on the literary merit of the books chosen.

The format for the comparison group and treatment group is summarized in Table 9.

<table>
<thead>
<tr>
<th>Component</th>
<th>Comparison-Dualists</th>
<th>Treatment-Dualists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Diversity of content</td>
<td>One viewpoint</td>
<td>Two or three viewpoints</td>
</tr>
<tr>
<td>Experiential learning</td>
<td>Concrete</td>
<td>Concrete-&gt;Abstract</td>
</tr>
<tr>
<td>Personalism</td>
<td>High (Instructor-students)</td>
<td>High (Student-student) (Instructor-students)</td>
</tr>
</tbody>
</table>

As shown in Table 9 (above), the Developmental Instruction model for the children's literature course can be analyzed in terms of four components:
(1) structure, (2) diversity of content, (3) experiential learning, and (4) personalism.

Degree of Class Structure

In general, the comparison section had a lecture presentation on the type of literature, and actual books were shared that represented the particular genre. The subsequent class meeting had small groups in which the students shared their examples of the particular genre of literature. The instructor/researcher was clearly the "authority."

All assignments for the comparison group were clearly delineated (Appendix G). Students in the comparison group used the high-structure format of index cards to record specific information and reactions to all the books they read over the semester. Cards were turned in every session as required.

A requirement for every student in the comparison groups was an objective test taken at the end of the semester covering questions from the content covered. Part B was an essay test that evaluated the subject matter for higher levels of thinking, such as analysis and synthesis.

Attendance was taken in both the comparison and the treatment groups.

The intervention changed the teaching for the treatment group to challenge and support the dualistic learners. The Developmental Instruction (Widick, Knefelkamp, and Parker, 1975) model provided the framework for the necessary balance of support and structure for the dualistic thinkers. (See Tables 10 and 11.)
The treatment group experienced a more inductive approach to learning; emphasis was placed on inviting the students to discover the type of literature. Chapter summaries and guidelines for the chapter information (White, 1987) were provided the week prior to the particular lecture so that students could prepare for a thoughtful discussion. These advanced organizers were support for the dualistic learners.

Each session began with the instructor/researcher sharing books from the particular genre of literature. Then the group moved into active learning: large and small discussions, debates, diads, role playing, reflective writing, and peer assistance and support. These activities were highly structured by the researcher and the students together to encourage high personalism from student to student and instructor to student. Two viewpoints were presented in the large and small discussions, debates, and role plays. The experiential learning activities were structured to move the student’s thinking beyond the concrete into the abstract.

The sample members in the treatment group were directed towards two types of suggested assignments from the “menu” listed in Appendix G. They were to attend one outside-of-class experience (conference or workshop) and reflect on the experience with class discussions and a written paper turned in to the instructor. They were also required to participate in one in-class active assignment; namely, a debate or role play that was structured to generate small-group discussions and then individual written reflections.

The more open assignments listed in Appendix G were for the graduate students in the treatment class and those not in the sample for the study. The details of each session of the course are also listed in Appendix G.

Every student in the treatment group was required to take an objective
test at the end of the semester. Part B was an essay test that evaluated the subject matter for higher levels of thinking of analysis and synthesis.

Students in the treatment group were encouraged to use a journal format for their reactions to the books read for the course. The journal assisted them in processing the books and other aspects of the course since they used it to reflect on their thoughts from discussions, class sessions, and chapter readings. They were encouraged to write observations, questions, reflections, emotions, and other reactions. The researcher wrote comments back in a type of "dialogue journal" (White, 1988). The journals were turned in to be read six times a semester and were brought to each class session.

Four times throughout the semester the researcher incorporated the reflectivity practice of "The Minute Papers" (Materials for the TA Workshop, 1987).

Students took time at the end of the class to answer two questions written on the board at the beginning of class.

1. What is the most significant thing you learned today?
2. What question is uppermost in your mind at the end of this class session?

The answers provided excellent feedback to the researcher and also modeled a technique for students to emulate in their classrooms. This was practiced only in the treatment section to facilitate processing and reflecting on the particular instructional methodology used that class session.
Diversity of Content:

The comparison group experienced little diversity in the content. The instructor presented her own viewpoint; but the lecture necessarily accommodated and elaborated upon the authors' viewpoints.

The treatment group compared and contrasted two or three viewpoints on particular issues in children's literature. The instructor deliberately did not provide closure or a "right answer" during these class sessions so that students would be encouraged to consider several perspectives. When discussion of points of view was presented in the treatment group, the researcher followed Rodger's suggestions for teaching dualistic thinking:

If intellectual development is a goal, then the task is to design and then create environments which invite right-wrong thinkers to change themselves: (a) to accept as legitimate and to appreciate multiple points of view; and (b) to learn to compare and contrast, to explain their answers, and to do basic analytic tasks. Therefore:

a. Have students experience 2 or 3 conflicting paradoxical, or alternative points of view. The experiencing should be as concrete (as contrasted to abstract) as possible.

b. Use high degree of structure to present each point of view and to break up a point of view into smaller more digestible units if need be.
c. Reinforce that alternative points may be legitimate.

d. If a point of view is rejected by a student, have the student be concrete about the basis for the rejection.

e. Respond to blanket appeals to an authority and overgeneralizations by asking students about instances when authority's opinion might be challenged or the generalization might not be true.

f. Draw out the students' own personal views or experiences. Reinforce their legitimacy.

g. When evidence and a rational argument are presented, reinforce that it is possible to change one's mind."

(Rodgers, unpublished manuscript)

The above was followed during discussions about topics such as poetry, uses of multiethnic literature, the use of picture books in the upper grades, African-American Literature, literature about death for children, and the whole language approach. Discussions were generated from the role playing and debates in the treatment group.

Experiential

Students in the comparison group participated in two field trips (the public library and a Whole Language classroom) and participated in small-group dis-
cussions on their books. They also presented alternative approaches to presenting genres of children's literature.

The treatment class also went on two field trips, one to the public library and one to a whole language school (without children in attendance.) Students in the treatment section were encouraged to attend the Ohio State University Children's Literature Conference, February 2-4, 1989, for a class assignment; and all who attended wrote a paper on the experience and reported back to the rest of the class.

The Montgomery County library system presented their annual program on Saturday, February 25, 1989, entitled "Pizazz," which some of the students in the treatment class chose to attend for an assignment. This program is organized to help teachers with ideas for incorporating literature in their classrooms. Students in the sample in the treatment section participated in either the workshop or the conference.

With the instructor's direction, the treatment group participated in active experiences such as role playing or debates. These activities were done in diads or small groups to encourage the student-to-student personalism in the class. The students, with the researcher's support, planned for student feedback after the experiences. After choosing any of these experiential activities either in class or out of class, the treatment group processed the experience using journals and small-and large-group discussions.

Personalism

The personalism in the comparison group focused on instructor to stu-
dent. Because the comparison group met with the same small group all semester, there was some student-student interaction.

The instructor provided some of the necessary balance of challenge and support for the dualistic learners in the treatment group. The instructor was available before and after class and encouraged appointments and personal contact.

The treatment group had "home base" groups but also rotated in different groups to expose students to different class members. The instructor joined different groups throughout the class time and shared with the students. It is hoped that the trust development between student and instructor encouraged risk taking on the part of most class members of the treatment group.

In summary, the differences between the comparison and treatment groups were clearly delineated. The controversial issues, the varied assignments, and the active learning on the part of the students perhaps moved students to accommodate new perspectives. Students may have grown to appreciate diversity so they could establish their own thoughts and opinions in a safe environment.

This model created an "integrative approach to college teaching, an approach that fosters both subject matter mastery and student development" (Widick and Simpson, 1978).

For the purpose of this intervention, the content diversity, experiential activities, role playing, and journal writing were the core of the Developmental Instruction. (Widick, Knefelkamp and Parker, 1975) The atmosphere in the classroom was nonthreatening and supportive for the dualistic students. Personalism was modeled by the instructor by reinforcing student reactions and interactions. During discussions, the instructor listed possible ways of viewing the diverse
perspectives, encouraging students to broaden their perspectives beyond a
dualistic approach to decisions. The discussions ended without closure to leave
questions open to reflection by the students. (See Table 10.)

Table 10

<table>
<thead>
<tr>
<th>Structure for Comparison and Treatment Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparison</td>
</tr>
<tr>
<td>Lecture on genre of literature.</td>
</tr>
<tr>
<td>Instructor shares examples of quality literature.</td>
</tr>
<tr>
<td>Small group-structured sharing of students' books</td>
</tr>
<tr>
<td>Sharing of literature, small group discussions.</td>
</tr>
<tr>
<td>Preparation for Class</td>
</tr>
<tr>
<td>Student will have read chapter in text.</td>
</tr>
<tr>
<td>Student will have read books of that genre of literature.</td>
</tr>
<tr>
<td>Guidelines for chapter discussions</td>
</tr>
</tbody>
</table>
## Table 11

**Intervention Challenge and Support Components**

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Experiential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diversity</td>
<td></td>
</tr>
<tr>
<td>Content of curriculum</td>
<td>Discussions</td>
</tr>
<tr>
<td>Challenge, Debates</td>
<td>Course readings</td>
</tr>
<tr>
<td>Discussions</td>
<td>Role playing</td>
</tr>
<tr>
<td>Peer sharing</td>
<td>Written assignments</td>
</tr>
<tr>
<td></td>
<td>Instructor input</td>
</tr>
<tr>
<td></td>
<td>Field trips</td>
</tr>
<tr>
<td></td>
<td>Multi-age grouping</td>
</tr>
<tr>
<td></td>
<td>Interviews</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Support</th>
<th>Personalism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure</td>
<td></td>
</tr>
<tr>
<td>Syllabus with assignments</td>
<td>Self disclosure among students</td>
</tr>
<tr>
<td>Lecture notes</td>
<td>Self disclosure from instructor</td>
</tr>
</tbody>
</table>
Table 11 (Continued)

<table>
<thead>
<tr>
<th>Instructions for assignments</th>
<th>Small group interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contracts for assignments</td>
<td>Large group presentations</td>
</tr>
<tr>
<td>Instructor</td>
<td>Individual interviews with instructor</td>
</tr>
<tr>
<td></td>
<td>Instructor responses in journals</td>
</tr>
<tr>
<td></td>
<td>Private conversations with instructor</td>
</tr>
</tbody>
</table>

Data Analysis

The demographic data were analyzed to document the similarity between the comparison and treatment groups. These two groups were compared to the national demographic data.

The nonparametric Mann-Whitney U-test was used to measure the ordinal level of statistical data from the rating scales of the MER.

The dependent t-test was used to analyze the difference between the pre- and post- tests for content knowledge. An independent t-test was used to determine the difference between the results of student satisfaction between the treatment and the comparison groups.

The Myers-Briggs personality types of the sample are identified and documented in chapter 4.
Transcripts of the interviews were documented and rated, and similarities between the cognitive levels of the sample using the MER scores and interview scores are noted and analyzed in chapter 4. Examples of students conceptions of teaching and how they compare with national research are noted.

The outcome measures generated for the study are shown in Table 12, which lists the hypotheses for the study.

Table 12
Outcome Measures

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>MER</th>
<th>Pre and Post Content Tests</th>
<th>Two Student Satisfaction Instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Development</td>
<td>(H_1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content Knowledge</td>
<td>(H_2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Satisfaction</td>
<td>(H_3)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*H-Hypothesis
1. Cognitive Development

One of the pretests and post-tests used was the Measure of Epistemological Reflection (MER) (1982, Taylor-Porterfield).

The MER is an hour-long written series of questions to address each of six content domains of the Perry scheme including decision making; the role of the learner, instructor, peers and evaluation in the learning process; and the nature of knowledge. The questions require the respondents to produce responses in short answer form, focus their thinking on each content area and specifically elicit justification for their thinking. (Baxter-Magolda, 1987)

The designers of the MER instrument followed the measurement criteria set up for accurate assessment of developmental theories, the "separation of content areas in data acquisition, production of response and focus on justification of reasoning" (Baxter-Magolda & Porterfield, 1988). The six content areas identified in research as relevant to intellectual development include decision making, the role of the learner, the role of the instructor, the role of peers, evaluation, and the nature of knowledge. These six content areas demonstrated qualitative differences in underlying cognitive structures described by Perry positions (Baxter-Magolda & Porterfield, 1988):

Collectively the studies reported in this chapter provide strong support for the MER as a reliable and valid measure of intellectual development on the Perry scheme. Exact domain agreement, the most stringent test of reliability, varied from moderate to high across samples. Only in one domain in one sample was there a nonsignifi-
cant chi-square. Levels of domain accuracy suggest that domain ratings are not strong enough to be used alone. Exact agreement in all samples with varied educational levels demonstrated that the MER can be rated consistently. Internal consistency coefficients also support the reliability of the MER.

Validity data from the follow-up studies also provide strong support for the MER. In the three cross-sectional studies that contained a range of educational levels, significant differences among educational levels emerged as expected. Means for various educational levels in most studies were consistent with those in previous research. The high correlation of the MER with the open-ended interview reduces the concern that increased structure of stimuli reduces accuracy. These data collectively suggest that the MER accurately measures intellectual development on the Perry scheme.

Although further validity testing in the form of longitudinal research is still needed, the current data provide a foundation for using the MER in applying theory to practice. The reliability and validity of the MER result in an accurate, practical form of assessment for use in practice. The use of a written instrument reduces the training and resources needed for data collection. The standardization and degree of specification of the rating manual facilitate its use by practitioners and researchers. (Baxter-Magolda and Porterfield, 1988, pp 48-49)

The MER is scored by certified trained raters. The same two certified raters scored the pre- and post-MER test for this study. They scored each domain sepa-
rately and then gave a total protocol rating or TPR. TPRs can be calculated in two different ways. A modal TPR is determined by finding the dominant domain rating of the six domain ratings. Baxter-Magolda and Porterfield compare the two methods:

The continuous TPR is more comprehensive and is calculated by determining the arithmetic average of all domain ratings and dividing it by the total number of ratable domains. Although averaging developmental levels is not always recommended, the continuous TPR does give the reader of the data more perspective than does the modal TPR in understanding a particular respondent’s thinking pattern. (1988, p 92).

The interrater reliability was calculated on the scoring of the MER (see Appendix B), as reported in Table 13. Using the Pearson coefficient of correlation, the reliability for the pre-MER was .624 for the comparison and .785 for the treatment. The post-MER Pearson coefficient of correlation was .802 for the comparison and .218 for the treatment.

Table 13

<table>
<thead>
<tr>
<th></th>
<th>Pre Comparison</th>
<th>Pre Treatment</th>
<th>Post Comparison</th>
<th>Post Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson</td>
<td>.624</td>
<td>.785</td>
<td>.802</td>
<td>.218</td>
</tr>
<tr>
<td>t</td>
<td>3.192</td>
<td>4.571</td>
<td>5.366</td>
<td>.806</td>
</tr>
<tr>
<td>Sig. at (.05)</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>
The interrater agreement for the TPR was calculated on the scoring of the MER and is reported in Table 14. The following agreements are seen for the TPR:

Table 14

**Interrater Agreement for Pre and Post Testing of MER**

<table>
<thead>
<tr>
<th>Dates of Test Administration</th>
<th>Exact Rating Match</th>
<th>Chi Sq</th>
<th>p Value</th>
<th>Within One Rating Match</th>
<th>Chi Sq</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>January Treatment</td>
<td>87%</td>
<td>39.27</td>
<td>.001</td>
<td>100%</td>
<td>13.99</td>
<td>.001</td>
</tr>
<tr>
<td>January Control</td>
<td>50%</td>
<td>.98</td>
<td>not significant</td>
<td>100%</td>
<td>16.75</td>
<td>.001</td>
</tr>
<tr>
<td>April Treatment</td>
<td>67%</td>
<td>18.4</td>
<td>.001</td>
<td>100%</td>
<td>13.99</td>
<td>.001</td>
</tr>
<tr>
<td>April Control</td>
<td>67%</td>
<td>22.84</td>
<td>.001</td>
<td>100%</td>
<td>13.99</td>
<td>.001</td>
</tr>
</tbody>
</table>

2. Content Knowledge

Two pre- and post-tests were designed for this study to reflect the students' content knowledge in children's literature. Appendix C contains the pre- and post-versions of these tests. Test A was structured from the Instructor's Manual.
to Accompany Children's Literature in the Elementary School (White, 1987).
This consisted of 35 multiple-choice questions that represented the content from each chapter in the text and were designed to match the course objectives as written in the course outline. Both the matching of Test A’s questions to the content and to the course objectives are identified in Appendix C. Test A measured lower levels of cognitive thinking, namely, the objectives of knowledge, comprehension, and application.

Test B consisted of two essay questions that represented the content taught and were designed to match the course objectives as written in the course outline. This subjective test reflected higher levels of thinking by measuring analysis and synthesis. Question 1 of Test B asked the students to discuss and detail their plans to incorporate children’s literature into their language arts curriculum, thus measuring their ability to analyze and synthesize. Question 2 of Test B challenged the students to discuss the literary elements using examples from a particular children’s book. They compared and contrasted these elements as they prioritized them for this analysis and synthesis of the information.

Three people graded the essay tests, with the result being the mean of the three numbers. Interrater reliability was determined on these ratings and described in chapter 4. Two experts in the field of children’s literature reviewed the tests and judged that they adequately represented the content of the children’s literature course and reflected the course objectives. The text had not been previously used by the researcher, so the content test could not be field-tested.

One must judge if the content and objectives measured by the test are representative of those that constitute the content domain. One should determine whether the items in the test represent the course
and objectives as stated in curriculum guides, syllabi and texts. In order to obtain an external evaluation of content validity, the test maker should ask a number of experts or other teachers to examine the test content systematically and evaluate its relevancy to the specified universe. If all agree the test items represent the content domain adequately, the test can be said to have content validity. (Ary et. al., 1985, p. 215)

3. Student Satisfaction

Students were required at the end of the semester to fill out two student satisfaction forms. The first was the standard course evaluation form (used in all courses at the University of Dayton). This quantitative measure was scored at the University of Dayton Computer Center for overall student satisfaction and broken down according to the components of structure and personal atmosphere. Questions from the quantitative form that fit into the specific categories of Developmental Instruction were extracted. Questions 7, 8, 9, 11, 12, 14, 16, 17, 18, 19, and 21 were questions that referred to the structure of the course: organization, goals, objectives, assignments, format, and preparation, and evaluation. Questions 10, 13, 15, 20 and 22 addressed the personal atmosphere in the class: the instructor's warmth, openness, feelings of respect, and the students' attainment of personal goals. A copy of the instrument is in Appendix D.

A second measure of student satisfaction was written as a field test for this study. In researching the literature, the researcher could not locate a specific student satisfaction form designed to match the criteria of Developmental In-
struction as it related to this study. The questions asked in the developed questionnaire were adopted from the Perry Assessment, 1970, and the MER (Taylor & Porterfield, 1982) and addressed student feedback in relation to decision making, role of peers, evaluation, the nature of knowledge, structure of the course, experiential learning, personal atmosphere, and diversity of content.

The designed instrument reflected the Perry criteria in relation to the inherent elements of the course. Out of these answers the researcher rated and calculated the positive and negative responses as they were addressed via this instrument. The qualitative evaluations were rated for overall satisfaction and then broken into the Developmental Instruction components of structure, experiential, personal atmosphere, and diversity of content to determine the student satisfaction of the comparison and the treatment groups. A global satisfaction rating was determined with the results of the quantitative and qualitative student satisfaction instruments. The qualitative evaluation and the categories from the evaluations that reflected the components are in Appendix D.

4. Demographic Data

A demographic data form was drafted for this study. The form was adapted from the American Association of Colleges of Teacher Education, Research About Teacher Education (RATE) 1987 study. The RATE project collected data from a national sample of institutions of higher education about their teacher education programs, faculty, and students. The questions chosen for this study were those that either contributed information about demographics or were judged relevant to students' cognitive development and programmatic
experiences. The demographic information was used to document first the similarities between the treatment and the comparison groups and then the sample to a national teacher education sample. The demographic information is reported in Tables 7-8 in this chapter; the actual form and other explanatory tables are in Appendix A.

5. Myers-Briggs

The Myers-Briggs Personality Inventory was another instrument taken by the members of this sample to see whether there was any relation between personality type and the cognitive level. The Myers-Briggs Form G was scored by an independent person trained to score this instrument. The results for the personality inventory were examined in relation to possible differentiated cognitive movement by personality types. A possible hypothesis may be generated for further study based on these field-tested components.

The Myers-Briggs Type Indicator is designed to make the theory of Jung's personality types understandable as well as useful. The random variation of behavior exhibited by people is actually, according to Myers (1986), a reflection of the systematic differences of perception of types. The purpose of the Myers-Briggs Type Indicator is to identify from self-report answers the basic preferences of a respondent's perception and judgment.

According to Briggs and McCaulley (1986), the MBTI differs from other personality instruments in the following ways: (a) it is designed to implement a theory; (b) the theory postulates dichotomies; (c) based on the theory, there are dynamic relationships that lead to the expression of the 16 types; (d) these type
descriptions are nested in a developmental model that is life-long; and (5) the scales are concerned with the basic functions of perception and judgment utilized in daily living. The main objective of the MBTI is to identify four basic preferences: Extrovert/Introvert, Sensing/Intuitive, Thinking/Feeling, and Judging/Perceiving. The intent of the forced-choice items is to identify habitual choices between these preferences. Choices are structured between seemingly inconsequential everyday events. All choices reflect the two poles of the scales, that is, a choice between Extrovert and Introvert. The final determination of type is made by the number associated with the responses for the preferent; for example, E of 10 and E of 20 indicate a preference for Extrovert, but the E of 20 indicates a stronger preference.

The MBTI was designed to implement Jung’s theory of psychological types. The validity of the instrument is determined by the ability to demonstrate relationships and outcome predicted by the theory (Myers and McCaulley, 1986). The use of type tables represents a measure for comparing the Myers-Briggs with other personality measures. In Chapter 11 of the Manual: A Guide to the Development of the Myers-Briggs Type Indicator by Myers and McCaulley, a number of instruments are compared with the MBTI through correlation matrices. The match between the MBTI and these other instruments is based on the characteristics of the 16 MBTI types and the appropriate characteristics measured on the second instrument. Some of the instruments reviewed were the Adjective Check List, Edwards Personality Preference Survey, Sixteen Personality Factor Questionnaire, FIRO-B, Strong Vocational Interest Blank, Kuder Occupational Interest Survey, and several inventories based directly on Jung’s work. There was a wide variation between correlational comparisons that seemed to be dependent on the
degree of appropriateness between the MBTI preference and the characteristics/categories in the other personality or vocational report forms.

Reliability is concerned with the internal consistency of the MBTI as well as the replication of results over time. An assumption that Myers and McCaulley (1986) report is that people with a good command of perception or judgment (i.e., good type development) are more likely to be clear about their own preferences and therefore will report their own preferences more consistently. The results of split-half reliabilities reported by Myers and McCaulley indicate higher reliabilities in college and university samples than in high-school samples. They state that the split-half reliabilities are acceptable for most adult samples; the focus is on the scales. Using the test-retest reliability estimates, the focus is on the probability that on a retest a person will come out the same MBTI type for each of the four preferences. Again, the problem of age and strength of preference emerges. The older the individuals surveyed, the more likely they were to retain at least three elements in their four-type choice.

Some of the caveats given by Myers and McCaulley (1986) on the interpretation and use of the MBTI are as follows: (a) No questions can ever accurately explain all human complexity; (b) choices between preferences are difficult, since both options may be desirable, (c) the MBTI is an indicator, not a test, since it has no right or wrong answers; (d) people do use both sides of the preference but not with equal liking; and (e) typically, people use the process/preference they like as opposed to one they do not like. Scores were designed to show the direction of the preference rather than the intensity. Categories such as "very clear preference" versus "moderate preference" are tied to the numerical number for the preference but indicate strength rather than intensity.
The MBTI is used in education to understand students and teachers, as well as the educational system (Myers and McCaulley, 1986). Three aspects of the educational setting can be tied to the MBTI: aptitude, application, and interest. Aptitude is concerned with the relationship of type preference integrated with the individual's ability to deal with ideas, concepts, theories, symbols, and imagination. Application is related to the Judging (J) and Perceiving (P) aspects of MBTI choices. Interest is related to career choices, since one of the most important motivations for career choice is the desire for work that is intrinsically interesting and satisfying. The use of the Myers-Briggs Personality Type Inventory ranges from the perspective of the student to that of the "educational system." In an application setting, the type focus of judging is more useful than the perceiving. Certain educational settings may favor success of one type or a cluster of types, such as those types favoring sensate and thinking individuals over other types.

6. Interviews

A random sample of five members of both the comparison and sample groups was asked to participate in an interview that focused on their conception of teaching in relation to their cognitive development.

The interview questions were designed by the researcher for the purpose of this study. The questions reflect the particular domains of Perry's theory as reflected in the Perry Assessment (Perry, 1970) and the MER (Taylor and Porterfield, 1982). This study is a field test of this instrument, and is intended to be used again in future studies. The interview questions and a breakdown of how
it corresponds to the Perry theory are in Appendix F.

The interviews were conducted mid-way through the semester and were intended to address two questions: (a) Are the students' developmental levels reflected in their conception of teaching? and (b) How closely do the interviews reflect the students' MER scores?

The interviews were tape recorded, transcribed and then rated by a person trained to rate the MER. Scores for each of the interviewees were figured and compared to the students' MER scores. The transcriptions of the interviews were also read and evaluated to see how the students' cognitive developmental levels were reflected in their thoughts on teaching, the schools, students, and learning.

**Conditions of Testing** (See Table 15.)

The proposal for the research study was reviewed and approved by the chairperson of the teacher education department at the University of Dayton.

The MER was administered on the same day, January 10th, 1989 for both the treatment and the comparison groups. One hour and 15 minutes was allowed for the administration of the MER.

The pretests for the content knowledge were given in the same week of classes: January 10, 1989, for the treatment group and January 12, 1989, for the comparison group. Forty-five minutes was allotted for this measure.

The demographic data were collected as part of the student introductions in the second (treatment) and fourth (comparison) class sessions. Time allowed for the demographic data sheet was thirty minutes.

The random sample of students for the interviews was chosen within the second week of classes and was set up for the week of March 13-17, one hour per
interview. These were conducted out of class, audiotaped, transcribed, and rated.

The Myers-Briggs personality inventory was administered in both sections on Tuesday, February 14, 1989. Forty-five minutes was allowed for the administration.

The post-measures were conducted at the end of the semester. Evaluations (qualitative and quantitative) were taken during the last week of classes on Tuesday, April 18, 1989, for the treatment group and Thursday April 20, 1989, for the comparison group.

The post-MER was given Tuesday, April 11, 1989, for both the comparison and treatment groups.

The post-tests on content were administered during the last class session, Tuesday, April 18, 1989. The comparison group took the test in the morning; the treatment group, in the evening.
Table 15

**Timeline for Treatment and Comparison**

<table>
<thead>
<tr>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
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<td>31</td>
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</tr>
</tbody>
</table>

- MER Pre-test
- Myers-Briggs Rated*
- MER Post-test Eval.
- [-----] [-----] [--------]

- MER Rated* M/B Students Rated** Interviewed Rated*
- [----] [-------] [----]

- Pre-test Demographics*** Data Analysis scored**** Post-test***** scored
- [--------]
- Evaluations*** analyzed
- [-----] [-----]
- Interviews rated * & ***** Transcribed****

* MER Raters:
  - W. Porterfield
  - M. Armstrong

**M/B Scored By
  - D. Klabunde

***P. Leahy, Ph.D.

****Secretarial Assistance

*****Researcher
Table 16

Measurements Utilized

<table>
<thead>
<tr>
<th>Pre-tests</th>
<th>Post-tests</th>
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<tbody>
<tr>
<td>Demographic data</td>
<td>MER</td>
</tr>
<tr>
<td>MER</td>
<td>Post-test (content)</td>
</tr>
<tr>
<td>Pre-test (content)</td>
<td>Test A</td>
</tr>
<tr>
<td>Test A</td>
<td>Test B</td>
</tr>
<tr>
<td>Interview</td>
<td>End of term evaluations</td>
</tr>
<tr>
<td>(random sample outside</td>
<td>qualitative</td>
</tr>
<tr>
<td>class time)</td>
<td>quantitative (UD)</td>
</tr>
<tr>
<td>Myers-Briggs</td>
<td></td>
</tr>
</tbody>
</table>

Summary

This was a quasi-experimental, nonequivalent control group in which one section of the children's literature course incorporated the Developmental Instruction (Widick, Knefelkamp and Parker, 1975) model. This was the intervention, or the independent variable, for the study. The other section of the course served as the comparison group. The dependent variables for the study were cognitive development along the Perry scale, content knowledge as measured by pre- and post-tests, and student satisfaction as measured by end-of-semester student satisfaction instruments. The Myers-Briggs personality inventory, demo-
graphic data, and qualitative interviews were reported for the sample populations. Structure, diversity of content, experiential learning, and personalism were reported for both the comparison and treatment groups. Statistical measures used to analyze the data were reported.
CHAPTER IV

ANALYSIS AND DISCUSSION OF THE DATA

Introduction

This study examined multiple dimensions that relate to fostering increases in the cognitive developmental levels of preservice elementary education students enrolled in a children's literature methods course.

The central question of this study is: Will using the process of Developmental Instruction (based on the Perry scheme) in an elementary preservice education course foster greater cognitive structure development, content learning, and student satisfaction of teacher education students in an intentionally designed course than in the same course without an intentional design?

The three hypotheses relate to the intervention (discussed in chapter 3), that was designed to affect the cognitive development of the sample in the study. The three hypotheses are as follows:

Null Hypotheses

Hypothesis #1. The Perry post-test levels for the treatment class will not be significantly different from those of the comparison class, as measured by the Measure of Epistemological Reflection (Taylor and Porterfield, 1982).
Hypothesis #2. The retention of knowledge of children's literature of the treatment class will not be significantly different from that of the comparison class, as measured by post-content tests developed for this study.

Hypothesis #3. Student satisfaction in the treatment class will not be significantly different from that of the comparison group, as measured by two student evaluation instruments.

The research questions are explanatory features that provide a broader context for better understanding the nature of cognitive development among preservice elementary education students. They are as follows:

Research Questions
Research Question #1. What aspects of the student's background, career orientation, and programmatic experience in relation to a national probability sample of elementary education students are likely to affect cognitive development?

Research Question #2. What is the relation of the student's personality type to cognitive level, and what implications can be drawn from this analysis?

Research Questions #3. What is the relation between the student's conception of teaching and his or her cognitive development, and what implications can be drawn from this analysis?

A detailed explanation of the findings and a discussion of the hypotheses follows:
Cognitive Development

Findings

Cognitive development levels were determined by the completion of the Measure of Epistemological Reflection, (MER) (Taylor and Porterfield, 1982). The MER is an instrument that obtains cognitive development information according to the Perry scheme. (See Appendix B.) The MER asks the student to answer questions in relation to these issues: decision making; role of the learner; role of the instructor; process of evaluation; role of peers; and knowledge, truth, and reality.

For this study, dualism was defined as any score that contained positions 1 through 2 (3). Multiplism includes positions 3 (2) through 4 (5), and relativism, positions 5 (4) through 6 (7).

On the pretest, the mean cognitive developmental position of the comparison group was 2.63 and for the treatment group 2.93. All the students in the sample fell into the late dualistic/early multiplistic category, which is typical for undergraduate students. The MER mean for freshmen was 2.57, while MER positions for seniors was 3.23 (Baxter Magolda, 1988). The TPR scores are reported in both continuous and modal form. (See Table 17).

For students in the total sample of 33 on the MER pre-test, 8 scored between 2.00 and 2.25, 24 had MER pretest scores between 2.50 - 3.33, and 1 had a MER score of 4.00.

The post-tests on the MER were similar to the pre-tests. The average score for the comparison group was 2.70, which was a slight increase but was not statistically significant. The treatment group's mean score was virtually unchanged. The ranges were very similar to those of the pre-test; seven of the post scores were below 2.50 and the remaining 26 were between 2.50 and 3.25. Again, these
scores were typical for juniors in an undergraduate program. (See Table 18 to 21.) The documentation of all the domain scores in modal and continuous forms are in Appendix B.
Table 17

Pre-test MER Scores

<table>
<thead>
<tr>
<th>Comparison</th>
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<th>Treatment</th>
<th>R1/R2 AVG</th>
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</thead>
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<td>N2</td>
<td>3.07 3-3</td>
</tr>
<tr>
<td>02</td>
<td>2.67 2(3)</td>
<td>N3</td>
<td>2.83 3(2)</td>
</tr>
<tr>
<td>03</td>
<td>2.75 2(3)</td>
<td>N4</td>
<td>3.00 3-3</td>
</tr>
<tr>
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<td>N7</td>
<td>3.08 3-3</td>
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<td>3.25 3(4)</td>
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<tr>
<td>07</td>
<td>2.42 2(3)</td>
<td>N12</td>
<td>3.17 3-3</td>
</tr>
<tr>
<td>08</td>
<td>2.92 3-3</td>
<td>N13</td>
<td>2.00 2-2</td>
</tr>
<tr>
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<td>2.17 2-2</td>
<td>N14</td>
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<tr>
<td>012</td>
<td>2.67 3(2)</td>
<td>N15</td>
<td>3.05 3-3</td>
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<td>N16</td>
<td>4.00 4-4</td>
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<td>N19</td>
<td>2.58 3(2)</td>
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<tr>
<td>016</td>
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<td>N20</td>
<td>2.50 2-3</td>
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<tr>
<td>018</td>
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<td>N22</td>
<td>3.33 3(4)</td>
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<tr>
<td>020</td>
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<td>N23</td>
<td>3.08 3-3</td>
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<tr>
<td>021</td>
<td>2.25 2(3)</td>
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<tr>
<td>022</td>
<td>2.75 3(2)</td>
<td>Mean</td>
<td>2.93 3(2)</td>
</tr>
<tr>
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<td>2.67 3(2)</td>
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Mean 2.63 2-3
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<th>Treatment</th>
<th>R1/R2 AVG</th>
</tr>
</thead>
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<td>01</td>
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<td>N2</td>
<td>2.83 3(2)</td>
</tr>
<tr>
<td>02</td>
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<td>N3</td>
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</tr>
<tr>
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<td>N4</td>
<td>2.83 3(2)</td>
</tr>
<tr>
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<td>N7</td>
<td>2.42 2(3)</td>
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Mean 2.70 2-3
Table 19

Comparison of Pre-and Post-Scores

Continuous Variables

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<th>Treatment</th>
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<tr>
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<td>Change</td>
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Discrete Variables

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Table 20

Comparison of Pre-and Post-Results on MER for Comparison and Treatment Groups

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<td>Post</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
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<td>2.70</td>
<td>2.93</td>
<td>2.90</td>
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<td>.335</td>
<td>.480</td>
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<td>sig. at (.05)</td>
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Table 21

**Comparison Between Comparison and Treatment Groups Pre- and Post-MER Tests**

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<th>Post</th>
</tr>
</thead>
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<tr>
<td>sig. at (.05) level</td>
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**Discussion**

As has been reported, the cognitive developmental levels of the members of this sample did not increase throughout this study. There could be a number of factors that may be responsible for this lack of movement, including the following: (a) The period of the study was too short in length and may have contributed to an ineffective program of Developmental Instruction; (b) developmental growth may not be stimulated by a program of instruction; and (c) a class in children's literature is not the best place to focus on cognitive development because of the nature of the content.
In chapter 2, several studies are cited regarding the length of time necessary for a program of Developmental Instruction to be effective. Some studies, such as those by Straub and Rodgers (1978) and Widick and Simpson (1978), succeeded in showing a significant growth within the duration of a single course. However, many researchers feel a period of less than 6 - 12 months would not be sufficient to stimulate significant growth (Theis-Sprinthall, 1984, Baxter-Magolda, 1987). It seems reasonable to suspect that this would be true. Most developmental theorists from Piaget on assert that a change in position is the result of a period of personal preparation. One hopes the course would have nurtured that process, but the actual transition may require specific stimuli that would not normally occur in a large group of students at the same time over a period of 16 weeks.

Teaching a course using the techniques of Developmental Instruction is not an easy task. The preparation required is significantly greater than for a traditionally taught course; and, as Widick says, we can find "few instructional shortcuts" (1978). Whether the researcher adequately applied the theory is a difficult question to discuss objectively. From a theoretical standpoint, Perry and others have said that a skilled teacher can "tune in" to her students' levels and intuitively meet their needs (Perry, 1978). Widick (1978) on the other hand, feels that a period of training may be required to learn the techniques adequately.

Whether growth can be stimulated in a college course is still open to debate. Although some courses have shown growth, the amount of research is still quite limited and inconclusive. From a theoretical standpoint, Piaget felt that stimulating growth was not possible. Rather, the child would experience a transition on his own schedule. However, this point raises the question of
whether we seek to cause growth or merely facilitate it. This may be a fine distinction, but one that may have some relevance in educational practice.

As mentioned in chapter 2, children's literature does appear to be a good subject for challenging students. Discussion of literature inevitably leads to a variety of opinions and provides fertile ground for complex thinking; nevertheless, meeting course objectives and nurturing cognitive growth may be too great an undertaking. If we expect to implement the model of Developmental Instruction, it may be necessary to design required courses that have as their primary purpose the nurturing of cognitive growth. Although Perry believes that some instructors teach this way instinctively, structuring an entire curriculum around Developmental Instruction may be unrealistic.

Content Knowledge

Findings

Two pre-and post-tests were drawn up to reflect the course objectives outline in the course syllabus. (See Appendix C.) The objective test portion consisted of multiple-choice questions drawn from White's (1987) Instructor's Manual to Accompany Children's Literature in the Elementary School. These questions reflected Bloom's (1956) taxonomy of the three lowest levels of thinking: knowledge, comprehension, and application. (See Appendix C.)

The two groups had very similar scores on the pre-test for content knowledge. The comparison's average was 19.11; the treatment's average was 20.20. The average for the comparison group's post-test score was 25.72, an increase of 6.610; and the treatment's was 25.67, an increase of 5.67. (See Table 22 for complete breakdown of these scores.)
Table 22

Results of Pre-and Post-Tests for Content Knowledge (Multiple Choice)

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
<th></th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>23.00</td>
<td>27.00</td>
<td>N2</td>
<td>22.00</td>
<td>27.00</td>
</tr>
<tr>
<td>02</td>
<td>19.00</td>
<td>25.00</td>
<td>N3</td>
<td>25.00</td>
<td>28.00</td>
</tr>
<tr>
<td>03</td>
<td>26.00</td>
<td>31.00</td>
<td>N4</td>
<td>21.00</td>
<td>28.00</td>
</tr>
<tr>
<td>04</td>
<td>19.00</td>
<td>27.00</td>
<td>N7</td>
<td>15.00</td>
<td>24.00</td>
</tr>
<tr>
<td>05</td>
<td>15.00</td>
<td>18.00</td>
<td>N10</td>
<td>23.00</td>
<td>28.00</td>
</tr>
<tr>
<td>06</td>
<td>18.00</td>
<td>24.00</td>
<td>N11</td>
<td>17.00</td>
<td>29.00</td>
</tr>
<tr>
<td>07</td>
<td>19.00</td>
<td>26.00</td>
<td>N12</td>
<td>21.00</td>
<td>31.00</td>
</tr>
<tr>
<td>08</td>
<td>19.00</td>
<td>24.00</td>
<td>N13</td>
<td>18.00</td>
<td>26.00</td>
</tr>
<tr>
<td>010</td>
<td>23.00</td>
<td>26.00</td>
<td>N14</td>
<td>14.00</td>
<td>20.00</td>
</tr>
<tr>
<td>012</td>
<td>19.00</td>
<td>26.00</td>
<td>N15</td>
<td>22.00</td>
<td>23.00</td>
</tr>
<tr>
<td>013</td>
<td>13.00</td>
<td>26.00</td>
<td>N16</td>
<td>26.00</td>
<td>28.00</td>
</tr>
<tr>
<td>014</td>
<td>17.00</td>
<td>27.00</td>
<td>N19</td>
<td>24.00</td>
<td>24.00</td>
</tr>
<tr>
<td>016</td>
<td>17.00</td>
<td>22.00</td>
<td>N20</td>
<td>16.00</td>
<td>28.00</td>
</tr>
<tr>
<td>018</td>
<td>23.00</td>
<td>25.00</td>
<td>N22</td>
<td>19.00</td>
<td>20.00</td>
</tr>
<tr>
<td>020</td>
<td>23.00</td>
<td>26.00</td>
<td>N23</td>
<td>20.00</td>
<td>24.00</td>
</tr>
<tr>
<td>021</td>
<td>13.00</td>
<td>26.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>022</td>
<td>18.00</td>
<td>26.00</td>
<td>Ave.</td>
<td>20.20</td>
<td>25.87</td>
</tr>
</tbody>
</table>

The difference in the increase between the comparison and treatment groups may be related to the method of instruction. The comparison group's
instruction was more structured and followed the text more closely, while the objective test was designed around the text. The slightly higher average increase by the comparison group may have been anticipated because the treatment group's instruction was less tied to the structured review of the text. A dependent t test was used to compare the comparison and treatment pre-and-post multiple-choice tests to document content knowledge. Statistically significant differences were found between pre-and post-test results for both the comparison and treatment groups. These comparisons are presented in Table 23. The same form of the test was used as the pre-test and post-test.

Table 23

**Comparison of Comparison and Treatment Pre-and Post-Test Results for Multiple-Choice Items**

<table>
<thead>
<tr>
<th></th>
<th>Comparison</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>19.11</td>
<td>20.20</td>
</tr>
<tr>
<td><strong>St. Dev.</strong></td>
<td>3.5</td>
<td>3.65</td>
</tr>
<tr>
<td><strong>t Value</strong> (dependent)</td>
<td>-8.35</td>
<td>-4.91</td>
</tr>
<tr>
<td>Significant at .05 level or less</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>
The independent test was used to compare the tests for the comparison and treatment groups to verify the similarities between the two groups. No statistically significant differences were found in the multiple-choice pre-test comparison of the treatment and comparison groups. Correspondingly, there were no significant differences between the treatment and comparison groups on the multiple-choice post-test. The comparisons are presented in Table 24.

Table 24

Comparison of Comparison and Treatment Pre-and Post-Test Results for Multiple-Choice Items

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Comparison</td>
<td>Treatment</td>
</tr>
<tr>
<td>Mean</td>
<td>19.11</td>
<td>20.20</td>
</tr>
<tr>
<td>St. Dev.</td>
<td>3.5</td>
<td>3.65</td>
</tr>
<tr>
<td>t Value (independent)</td>
<td>-.866</td>
<td>-1.34</td>
</tr>
<tr>
<td>Significant at .05 level or less</td>
<td>no</td>
<td>no</td>
</tr>
</tbody>
</table>

Since the pre-test/post-test instrument was field-tested in the project, an item examination was completed on the post-test result. Item difficulty and item discrimination were computed for the treatment and the comparison groups.
The results are presented in Appendix C. These items identified will not be used if the content knowledge test is used again.

The researcher developed a subjective content test consisting of two essay questions, both questions reflecting analysis and synthesis. These matched the course objectives for the two higher levels of thinking based on Bloom’s (1956) taxonomy. See Appendix C for the essay questions, Test B. The first question asked the student to develop a plan that she would use in her classroom to incorporate children’s literature into the language arts curriculum. The question was testing for analysis and the synthesis of the relationship between the use of literature and the language arts curriculum and would encourage divergent thought.

The second question required the student to examine the literary elements of a children’s book and prioritize the elements by their appeal to the student. This question encouraged students to combine ideas and develop their own thinking, utilizing analysis and synthesis.

The comparison group had an average score of 7.73 on question 1 and 7.66 on question 2. The treatment group had an average score of 8.53 on question 1 and 9.04 on question 2.

The average pre-test scores for the comparison group was .83 for question 1 and .06 for question 2. The treatment had pre-test scores of .67 for question 1 and .13 for question 2. (See Table 25.)
Table 25

Results of Pre-and Post-Test for Content Knowledge (Essays)

<table>
<thead>
<tr>
<th>Comparison</th>
<th></th>
<th></th>
<th></th>
<th>Treatment</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Q₁</td>
<td>Q₂</td>
<td>Q₁</td>
<td>Q₂</td>
<td>Q₁</td>
<td>Q₂</td>
<td>Q₁</td>
<td>Q₂</td>
</tr>
<tr>
<td>01</td>
<td>0</td>
<td>0</td>
<td>8.00</td>
<td>5.67</td>
<td>N2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>02</td>
<td>0</td>
<td>0</td>
<td>6.00</td>
<td>7.83</td>
<td>N3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>03</td>
<td>4</td>
<td>0</td>
<td>9.33</td>
<td>9.83</td>
<td>N4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>04</td>
<td>2</td>
<td>0</td>
<td>9.33</td>
<td>9.67</td>
<td>N7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>05</td>
<td>0</td>
<td>0</td>
<td>5.00</td>
<td>4.67</td>
<td>N10</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>06</td>
<td>0</td>
<td>0</td>
<td>6.67</td>
<td>7.17</td>
<td>N11</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>07</td>
<td>0</td>
<td>0</td>
<td>8.33</td>
<td>8.17</td>
<td>N12</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>08</td>
<td>4</td>
<td>0</td>
<td>9.00</td>
<td>9.67</td>
<td>N13</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>010</td>
<td>1</td>
<td>1</td>
<td>8.67</td>
<td>8.83</td>
<td>N14</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>012</td>
<td>0</td>
<td>0</td>
<td>6.00</td>
<td>9.83</td>
<td>N15</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>013</td>
<td>0</td>
<td>0</td>
<td>8.50</td>
<td>9.67</td>
<td>N16</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>014</td>
<td>0</td>
<td>0</td>
<td>9.00</td>
<td>6.67</td>
<td>N19</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>016</td>
<td>0</td>
<td>0</td>
<td>7.67</td>
<td>9.00</td>
<td>N20</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>018</td>
<td>0</td>
<td>0</td>
<td>6.33</td>
<td>4.53</td>
<td>N22</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>020</td>
<td>2</td>
<td>0</td>
<td>7.00</td>
<td>5.33</td>
<td>N23</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
| 021 | 0 | 0 | 7.00 | 5.83 | | | | | ===----------------------===
| 022 | 0 | 0 | 9.67 | 9.33 | Avg. | .67 | .13 | 8.53 | 9.04 |
| 023 | 2 | 0 | 7.67 | 6.17 | | | | | ===----------------------===

Avg. .83 .06 7.73 7.66
An independent *t* test was used to compare the comparison and treatment groups on the results of essay Questions 1 and 2. No significant differences were found between the comparison and the treatment groups on the essay pre-test for Questions 1 and 2. Post-test comparisons of the treatment and comparison groups showed no significant differences for Question 1 and a significant difference at the .02 level for Question 2. The treatment mean was 9.04, as compared to the control mean of 7.66.

Table 26

**Essay Question 1 Comparison of Comparison and Treatment Groups**

<table>
<thead>
<tr>
<th></th>
<th>Pretest</th>
<th>Post test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Comparison</td>
<td>Treatment</td>
</tr>
<tr>
<td>Mean</td>
<td>.883</td>
<td>.667</td>
</tr>
<tr>
<td>St. Dev.</td>
<td>1.38</td>
<td>1.11</td>
</tr>
<tr>
<td>t Value (independent)</td>
<td>.384</td>
<td>-1.184</td>
</tr>
<tr>
<td>Significant at .05 or less</td>
<td>no</td>
<td>no</td>
</tr>
</tbody>
</table>
Table 27

Essay Question 2 Comparison of Comparison and Treatment Groups

<table>
<thead>
<tr>
<th></th>
<th>Pretest</th>
<th>Post test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Comparison</td>
<td>Treatment</td>
</tr>
<tr>
<td>Mean</td>
<td>.056</td>
<td>.113</td>
</tr>
<tr>
<td>St. Dev.</td>
<td>.236</td>
<td>.352</td>
</tr>
<tr>
<td>t Value</td>
<td>.261</td>
<td>-2.525</td>
</tr>
<tr>
<td>Significant at .05 or less</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

Three people scored the essay portion of the tests with the average calculated to be the final score. The interrater reliability on the scoring for the treatment group for questions 1 and 2 is .67. For the comparison group for both questions, the reliability is .43, as measured by the Pearson Product Moment Coefficient of Correlation.

Discussion

The data from this study indicate that the comparison group's objective knowledge was slightly greater than the treatment group's. However, the treatment group's level of cognitive thinking did appear to be operating on a higher level, as measured by the analysis and synthesis level of Question #2.
This data confirms that the developmentally structured course did improve high-level content knowledge but may have had a slightly negative impact on low-level objective knowledge; however, the improvement in high-level knowledge was statistically significant in comparing the two groups. Also, it seems reasonable to expect that the measuring tool for the objective knowledge was the measurement of one aspect of knowledge (information from text) and would more accurately reflect the structure for the comparison group.

Student Satisfaction

Findings

Student satisfaction was determined by two instruments. The first was a quantitative measure used by the faculty of the University of Dayton to evaluate student satisfaction. (See Appendix D.) The results were tallied for each question, with no significant difference between the control and treatment groups, except for Question 14: “Examinations related well to the material emphasized in the course.” The treatment group’s answers were significant at the .05 level for that particular question. Developmental Instruction encourages higher-level thinking, and the objective test in particular did not accurately reflect the method of instruction for the intervention. (See Table 28, for questions 14, the complete analysis in Appendix D.)
Table 28

Student Satisfaction - Quantitative Instrument

Question 14 - “Examinations related well to the material emphasized in the course.”

<table>
<thead>
<tr>
<th></th>
<th>Comparison</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.61</td>
<td>2.93</td>
</tr>
<tr>
<td>St. Dev.</td>
<td>.61</td>
<td>1.03</td>
</tr>
<tr>
<td>t. Test</td>
<td></td>
<td>2.24</td>
</tr>
<tr>
<td>two tail prob.</td>
<td></td>
<td>0.034</td>
</tr>
<tr>
<td>Sig. (.05) level</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Mann Whitney U</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>Sig. (.05) level</td>
<td>yes</td>
<td></td>
</tr>
</tbody>
</table>

The quantitative measure for student satisfaction was analyzed by grouping the questions to match components of Developmental Instruction: Structure (questions #7, 8, 9, 11, 12, 14, 16, 17, 18, 19, and 21) and personal atmosphere (questions #10, 13, 15, 20, and 22). A t test with a two-tail probability was figured with results of no statistical significance at the .05 level.

A qualitative evaluation (see Appendix D) was designed for this study to reflect William Perry’s cognitive development theory. This study was a field test of this instrument. Results of the evaluation were tabulated into categories to
reflect the following components of the Developmental Instruction: diversity of the content, structure of the course, personal atmosphere, and experiential learning. (See Appendix D.) By focusing on domains in the MER, questions reflected students' perceptions of how the course affected the nature of their knowledge, relationships to peers within the course, decision making, evaluation, role of the instructor, and role of the learners.

The themes mentioned in the qualitative evaluations were noted, and the number of times a student mentioned those areas were tabulated with the correspondence of both comparison and treatment groups. The Spearman rho was used to compare the ranking differences of the categories between the comparison and the treatment groups. Rho values of .542 were obtained. There was a significant difference between the treatment and the comparison groups in category ranking. These results are presented in Table 29.
Table 29

Comparison of Comparison and Treatment Groups Ranking by Categories

<table>
<thead>
<tr>
<th>Question No.</th>
<th>Comparison Group Rank</th>
<th>Treatment Group Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Info, Love of Books</td>
<td>8.5</td>
<td>4.0</td>
</tr>
<tr>
<td>2. Use of Lit</td>
<td>3.0</td>
<td>6.5</td>
</tr>
<tr>
<td>3. Value of Reading</td>
<td>13.0</td>
<td>15.00</td>
</tr>
<tr>
<td>4. Attendance</td>
<td>21.5</td>
<td>22.5</td>
</tr>
<tr>
<td>5. Assignments</td>
<td>21.5</td>
<td>18.5</td>
</tr>
<tr>
<td>6. Lecture</td>
<td>14.0</td>
<td>22.5</td>
</tr>
<tr>
<td>8. Exposed New Books</td>
<td>2.0</td>
<td>18.5</td>
</tr>
<tr>
<td>9. Small-Group Work</td>
<td>5.5</td>
<td>8.0</td>
</tr>
<tr>
<td>10. Large-Group Work</td>
<td>21.5</td>
<td>5.0</td>
</tr>
<tr>
<td>11. Value of Library</td>
<td>16.0</td>
<td>22.5</td>
</tr>
<tr>
<td>12. Teacher Career</td>
<td>15.5</td>
<td>17.0</td>
</tr>
<tr>
<td>13. Evaluation</td>
<td>10.0</td>
<td>10.5</td>
</tr>
<tr>
<td>14. Exam</td>
<td>21.5</td>
<td>22.5</td>
</tr>
<tr>
<td>16. Whole Language</td>
<td>8.5</td>
<td>9.0</td>
</tr>
<tr>
<td>17. Multiethnic</td>
<td>18.0</td>
<td>16.0</td>
</tr>
<tr>
<td>18. Open-Mindedness</td>
<td>18.0</td>
<td>12.0</td>
</tr>
<tr>
<td>19. Class Structure</td>
<td>7.0</td>
<td>10.5</td>
</tr>
<tr>
<td>20. Experimental</td>
<td>15.5</td>
<td>1.0</td>
</tr>
<tr>
<td>21. Personal Atmosphere</td>
<td>4.0</td>
<td>6.5</td>
</tr>
<tr>
<td>22. Diversity of Content</td>
<td>18.0</td>
<td>20.0</td>
</tr>
<tr>
<td>23. Text</td>
<td>12.0</td>
<td>14.0</td>
</tr>
<tr>
<td>25. Presentations</td>
<td>1.0</td>
<td>2.0</td>
</tr>
<tr>
<td>26. Instructor</td>
<td>5.5</td>
<td>3.0</td>
</tr>
<tr>
<td>29. Peers</td>
<td>11.0</td>
<td>13.0</td>
</tr>
</tbody>
</table>
There were several categories of comments that were present only in the treatment group's responses. The following comments were positive responses to particular discussions or presentations about these topics: death, chapter summaries, community resources, bibliotherapy, speeches, journals, and the value of creativity.

The comparison between treatment and comparison using the metacategory of structure was statistically significant at the .05 level. (See Table 30.) This category included the items related to text, structure of the class, exams, evaluations of assignments, lecture, class presentations, assignments, and attendance.

Table 30

**Comparison Between Treatment and Comparison Groups Using Metacategory of Structure**

<table>
<thead>
<tr>
<th>Question #</th>
<th>Treatment</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>Raw Score</td>
<td>%</td>
</tr>
<tr>
<td>4. Attendance</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>5. Assignments</td>
<td>10.6</td>
<td>5.0</td>
</tr>
<tr>
<td>6. Lecture</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>13. Evaluation</td>
<td>13.9</td>
<td>15.0</td>
</tr>
<tr>
<td>14. Exam</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>19. Structure</td>
<td>31.98</td>
<td>15.0</td>
</tr>
<tr>
<td>23. Text</td>
<td>22.5</td>
<td>12.0</td>
</tr>
</tbody>
</table>
Table 30 (Continued)

<table>
<thead>
<tr>
<th>Rho Value = .835</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>one tail</td>
<td></td>
</tr>
<tr>
<td>.05 = .714</td>
<td>yes</td>
</tr>
<tr>
<td>.01 = .893</td>
<td>no</td>
</tr>
<tr>
<td>two tail</td>
<td></td>
</tr>
<tr>
<td>.05 = .786</td>
<td>yes</td>
</tr>
<tr>
<td>.01 = .929</td>
<td>no</td>
</tr>
</tbody>
</table>

The other components of, experiential learning, personal atmosphere, and diversity of content found on the qualitative evaluations were unable to be statistically analyzed because of the small numbers of questions related to each of these categories.

Discussions

From the results of this study, it appears that the students in the treatment section were more satisfied overall than the students in the comparison group. This is consistent with the research findings on student satisfaction within the Developmental Instruction model. Use of the model resulted in higher satisfaction, subject mastery, and intellectual development than among students in the comparison section of the same course (Knapp, 1974; Widick, 1975; Widick and Simpson, 1978; Baxter-Magolda, 1987). Except on the question about examinations, the quantitative evaluations did not show a difference in student satisfaction. The qualitative evaluations indicated the students in the treatment group were more satisfied than those in the comparison group at a statistically significant level for the structure component. The students in the treatment section had been encouraged to develop their thinking on particular issues and
experiences raised as part of the course curriculum. Allowed the freedom of the open-ended questions in the qualitative instrument, they expressed their thoughts about particular areas incorporated in the Developmental Instruction model: structure, diversity of the content, reflectivity in the journals and papers, peer interaction, and experiential learning.

The following data addresses the additional factors related to the cognitive developmental levels of preservice elementary education students as they are addressed in the research questions.

Demographic Data on the Sample

Findings

A demographic questionnaire (see Appendix A) was taken by both the treatment and comparison groups. The specific results are outlined in chapter 3 and in Appendix A. A summary profile was drawn from the results of the questionnaire. The sample average age for this study was 22.4 years old; the national average was 24.7. The population was made up of 100% females in the study, compared with the national elementary education population of 92% female, 8% male. About one third of the national population was married, while only 9% of this sample was married. As mentioned in chapter 3, the difference in the marriage statistic may be due in part to the fact that in this study, the sample was limited to undergraduate students, not any initial or re-certification students.

Ninety-three percent of the national sample was white, compared with 88% in the sample population. About 50% of the sample in the study attended school less than 100 miles from their home, compared with 73% in the national study; 33% were less than 50 miles from home, compared with the national
sample of 54.2%. Forty percent of the study's sample grew up in rural or small towns, 42% in suburbs, and 18% in urban or major urban areas. The Garibaldi, Zimpher 1989 national data were similar, with 50.2% growing up in rural or small towns and almost 20% coming from urban and major urban areas. The suburban population for the national study was only 15% versus the 42% of the sample in this study. Students in the sample for this study pay approximately $12,000 to attend college; all were full-time students, and 82% were residential students. Students in the national sample paid $7,324 to attend college; 92.9% were full time, and there were about equal numbers of commuters and residents. The majority of college financial assistance for the students in the study came from family support; the rest came from loans, grants, employment, personal savings, scholarships, work-study, and other sources, all of which followed the national breakdown.

Seventy percent of the study sample spoke no language other than English, compared with 60% for the national sample.

Discussion

The demographic data indicated the similar nature of the comparison and treatment groups for age, gender, ethnic background, marital status, full-time status, community background, grade point average and preferred teaching setting. This information controlled the internal validity concern of selection and maturation, since the groups are comparable. (See Tables 1-8 in chapter 3.)

This information also validated the typicality of this sample to a national teacher education probability sample. This insures the generalization of the study to a national population.

The demographics of this sample indicate a somewhat provincial group.
Backgrounds, present experiences, and future aspirations seem to be similar. There appears to be minimal exposure to cultures and thinking different from their own. The challenges and support necessary to move out of dualism are not necessarily a part of their lives. These demographics again point to the necessity to embed cognitive developmental models into preservice teacher education programs. The preservice elementary teacher education students need the structure of challenge and support within their entire preservice training to encourage them to move toward higher cognitive thinking. As Oja (1984) says, "Teachers at higher stages of development function at more complex levels; are more flexible, stress tolerant, and adaptive; assume multiple perspectives; utilize a wider variety of coping behaviors; and employ a broader repertoire of teaching models." A developmental teacher education program can attempt to foster this type of teacher in their programs. This is an appropriate goal, considering many of the current challenges facing teachers today.

Personality Type

Findings

The Myers Briggs personality inventory was taken by all members of the sample. See Appendix E. Table 31 indicates the personality type of members of the sample.
Table 31

Myers-Briggs Personality Type in Sample

<table>
<thead>
<tr>
<th></th>
<th>Comparison</th>
<th>Treatment</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISTJ</td>
<td>ISTJ 1</td>
<td>ISTJ 1</td>
<td>ISTJ 1</td>
</tr>
<tr>
<td>ISFJ</td>
<td>ISFJ 1</td>
<td>ISFJ 1</td>
<td>ISFJ 1</td>
</tr>
<tr>
<td>INFJ</td>
<td>INFJ 3.5</td>
<td>INFJ 3</td>
<td>INFJ 3.5</td>
</tr>
<tr>
<td>INTJ</td>
<td>INTJ 0</td>
<td>INTJ 1</td>
<td>INTJ 1</td>
</tr>
<tr>
<td>ISTP</td>
<td>ISTP 2</td>
<td>ISTP 2</td>
<td>ISTP 2</td>
</tr>
<tr>
<td>ISFP</td>
<td>ISFP 2</td>
<td>ISFP 2</td>
<td>ISFP 2</td>
</tr>
<tr>
<td>INFP</td>
<td>INFP .05</td>
<td>INFP 1</td>
<td>INFP 1</td>
</tr>
<tr>
<td>INTP</td>
<td>INTP 1</td>
<td>INTP 1</td>
<td>INTP 1</td>
</tr>
<tr>
<td>ESTP</td>
<td>ESTP 3</td>
<td>ESTP 3</td>
<td>ESTP 3</td>
</tr>
<tr>
<td>ESFP</td>
<td>ESFP 3</td>
<td>ESFP 3</td>
<td>ESFP 3</td>
</tr>
<tr>
<td>ENFP</td>
<td>ENFP 3</td>
<td>ENFP 3</td>
<td>ENFP 3</td>
</tr>
<tr>
<td>ENTP</td>
<td>ENTP 1</td>
<td>ENTP 1</td>
<td>ENTP 1</td>
</tr>
<tr>
<td>ESTJ</td>
<td>ESTJ 1</td>
<td>ESTJ 1</td>
<td>ESTJ 1</td>
</tr>
<tr>
<td>ESFJ</td>
<td>ESFJ 1</td>
<td>ESFJ 1</td>
<td>ESFJ 1</td>
</tr>
<tr>
<td>ENFJ</td>
<td>ENFJ 5</td>
<td>ENFJ 5</td>
<td>ENFJ 5</td>
</tr>
<tr>
<td>ENTJ</td>
<td>ENTJ 1</td>
<td>ENTJ 1</td>
<td>ENTJ 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Discussion

In Table 32, the national sample norms reported in Gifts Differing (Myers, 1986) are presented in percentages to be compared with the treatment and comparison groups in the sample for this study.

Table 32

Comparison of Comparison and Treatment to Gifts Differing (Myers, 1986) National Sample of Education Students

<table>
<thead>
<tr>
<th></th>
<th>ST</th>
<th>SF</th>
<th>NF</th>
<th>NT</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Sample %</td>
<td>13%</td>
<td>42%</td>
<td>39%</td>
<td>6%</td>
</tr>
<tr>
<td>Comparison %</td>
<td>17%</td>
<td>42%</td>
<td>39%</td>
<td>0%</td>
</tr>
<tr>
<td>Treatment %</td>
<td>0%</td>
<td>40%</td>
<td>40%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Table 33 compares the treatment and comparison groups for this sample with norms for elementary teachers, as reported by Lawrence (1982) in People Types and Tiger Stripes.
Table 33

Comparison of Comparison and Treatment to People Types and Tiger Stripe (Lawrence, 1982) Sample Norms for Elementary Teachers

<table>
<thead>
<tr>
<th></th>
<th>E</th>
<th>I</th>
<th>S</th>
<th>N</th>
<th>F</th>
<th>T</th>
<th>J</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norm %</td>
<td>52</td>
<td>48</td>
<td>61</td>
<td>39</td>
<td>69</td>
<td>31</td>
<td>66</td>
<td>34</td>
</tr>
<tr>
<td>Comparison %</td>
<td>61</td>
<td>39</td>
<td>50</td>
<td>50</td>
<td>83</td>
<td>17</td>
<td>65</td>
<td>35</td>
</tr>
<tr>
<td>Treatment %</td>
<td>53</td>
<td>47</td>
<td>40</td>
<td>60</td>
<td>80</td>
<td>20</td>
<td>13</td>
<td>87</td>
</tr>
</tbody>
</table>

The small sample size in this study did not lend itself to the generating of hypotheses on the relationship between the personality type results and student satisfaction. The nature of Developmental Instruction suggests that a future study of this relationship may expose personality type preferences related to the student's need for structure and organization, peers, and experiential learning. With a larger sample, these relationships between student satisfaction and personality types may be significant.

Interviews

Findings

Interviews were conducted with a random sample of students representing the comparison and treatment groups. The interview form is in Appendix E. The interviews addressed two separate questions: (a) Are the students' developmental level reflected in their conception of teaching? and (b) How closely do the interviews reflect the students' MER scores?
The questions were closely tied in with the MER domains and reflect decision making; role of the learner; role of the instructor; relationship with peers; evaluation; and the nature of knowledge, truth, and reality in relation to teaching and education.

Results of the interviews are in Table 34. The MER scores are next to them. Breakdown of the scores by domain are in Appendix F.

Table 34

Comparison of the MER scores and the Qualitative Interviews

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Total Interview MER Average</th>
<th>Student Number</th>
<th>Total Interview MER Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>3.15</td>
<td>N3</td>
<td>2.94</td>
</tr>
<tr>
<td>04</td>
<td>2.85</td>
<td>N12</td>
<td>3.15</td>
</tr>
<tr>
<td>010</td>
<td>3.4</td>
<td>N16</td>
<td>3.0</td>
</tr>
<tr>
<td>012</td>
<td>3.3</td>
<td>N19</td>
<td>2.22</td>
</tr>
<tr>
<td>023</td>
<td>2.8</td>
<td>N23</td>
<td>3.25</td>
</tr>
<tr>
<td>Mean</td>
<td>3.1</td>
<td>2.7</td>
<td>2.91</td>
</tr>
<tr>
<td>St. Dev.</td>
<td>.267</td>
<td>.283</td>
<td>.406</td>
</tr>
</tbody>
</table>

Nine of the students interviewed were dualistic; the tenth was an early multiplist. Only three of the ten still plan to be teaching in fifteen years; this im-
plies that the majority see teaching as more of a job than a career. Future alternatives to teaching include marriage, families, or other opportunities, such as opening a daycare center. Seven of the ten see teaching as both a science and art, three as an art. All ten prefer their first teaching position to be suburban or rural; none of the students favored an urban placement. Nine of the ten preferred primary placements. The multiplist preferred the lower junior-high level. Three mentioned wanting a small class; two students noted they wanted their first placement to be in a Catholic school. Nine of the ten wanted their first teaching position to be in their home communities; one dualist mentioned she would relocate anywhere.

When asked to comment on the teacher who served as a role model for them in their professional development all the dualists mentioned personal attributes of the teacher, such as "warm," "caring," "personable," "patient," and the like. The multiplist talked about her role model in relation to instructional approaches and teacher behaviors.

These data from the interviews accurately reflect the thinking of dualistic learners in relation to issues of educational interest. See Table 35 for the date compiled.
Table 35

Qualitative Interviews

<table>
<thead>
<tr>
<th>15 years teaching</th>
<th>Science/Art</th>
<th>Urban/Rural/ Suburban</th>
<th>First teaching position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparison</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>No-married with children</td>
<td>Both</td>
<td>Suburban</td>
</tr>
<tr>
<td>04</td>
<td>Own a daycare center</td>
<td>Both</td>
<td>Suburban</td>
</tr>
<tr>
<td>010</td>
<td>Yes</td>
<td>Both</td>
<td>Suburban or rural</td>
</tr>
<tr>
<td>012</td>
<td>Probably not</td>
<td>Both</td>
<td>Rural</td>
</tr>
<tr>
<td>023</td>
<td>Not sure</td>
<td>Art</td>
<td>Suburban</td>
</tr>
<tr>
<td>Treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N3</td>
<td>No-CCD</td>
<td>Both</td>
<td>Rural</td>
</tr>
<tr>
<td>N12</td>
<td>possibly if not business</td>
<td>Both</td>
<td>Suburban</td>
</tr>
<tr>
<td>N16</td>
<td>Yes</td>
<td>Both</td>
<td>Rural</td>
</tr>
<tr>
<td>N19</td>
<td>Own a daycare center</td>
<td>Art</td>
<td>Rural</td>
</tr>
<tr>
<td>N23</td>
<td>No-married with Children</td>
<td>Art</td>
<td>Suburban</td>
</tr>
</tbody>
</table>
Table 35 (continued)

**Qualitative Interviews Teacher Role Model**

**Comparison**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>relaxed, warm</td>
</tr>
<tr>
<td>04</td>
<td>personable, high expectations</td>
</tr>
<tr>
<td>010</td>
<td>positive, warm, interesting</td>
</tr>
<tr>
<td>012</td>
<td>high expectations, warm</td>
</tr>
<tr>
<td>023</td>
<td>work for her, she would be authority, warm, caring, patient</td>
</tr>
</tbody>
</table>

**Treatment**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N3</td>
<td>Bright, open, personable</td>
</tr>
<tr>
<td>N12</td>
<td>Open, facilitator</td>
</tr>
<tr>
<td>N16</td>
<td>Combination instructional process</td>
</tr>
<tr>
<td>N19</td>
<td>Personable, enthusiastic</td>
</tr>
<tr>
<td>N23</td>
<td>Patient, caring</td>
</tr>
</tbody>
</table>

**Discussion**

It was interesting to note how similar the scores were for the students. A dependent t and the nonparametric Wilcoxon Signed Rank Test were computed between the MER score and the interview rating. The results were not statistically significant at the .05 level. The small sample size affected the results of this sample.
The interviews looked at the students' conception of thinking in relation to national research on teachers' thought processes and the need for teachers to have high cognitive development. "The emerging picture of the teacher as a reflective professional is a developmental one that begins during undergraduate teacher education (or even earlier) and continues to grow and change with professional experience" (Clark and Peterson, 1986).

These interviews attempted to listen to the students' thoughts on teaching at the junior level of the undergraduate program. Barnes eloquently describes how beginning teachers need to be thoughtful, reflective people:

Teaching is seen as ambiguous and complex work requiring judgment, action, and the capacity to reflect and revise decisions on the basis of one's observations and insights. Sound teacher judgments, therefore, must be rooted in deep understandings of teaching, learning, learners, and subject matter, and how these factors interrelate in the teaching-learning process. (Barnes, 1989, p.13.)

Some general conclusions emerge from the random sample interviewed. There is a parochialism about their thinking; most do not approach teaching as a life-long career, most want to return to their home communities, and none of the students want an urban placement. Most of the students view their role models according to personal attributes, not professional characteristics, a tendency that supports the concept of the "artistic" approach to teaching. This approach works from the faulty assumption that students naturally adopt many of the characteristics of an effective teacher just by being a student for so many years and that preservice teacher education programs merely add technical skills to this basic knowledge of teaching.

These data reinforce the need for developmental preparation in teacher
education programs. Effective teaching is a function of higher stages of cognitive development. Higher stages are characterized by "increased flexibility, differentiation of feelings, respect for individuality, tolerance for conflict and ambiguity, the cherishing of interpersonal ties and a broader social perspective" (Witherall and Erickson, 1978).

Summary

This study investigated several dimensions related to fostering increases in the cognitive developmental levels of preservice elementary teacher education students enrolled in a children’s literature methods course.

The first three were formulated as hypotheses and will be reported in that order.

1. Cognitive development - As hypothesized, there was no difference in cognitive growth as measured by the MER (Taylor and Porterfeild, 1982) between the treatment and comparison groups. Several factors could have contributed to this, but time is probably the major factor. "Since research on stage change seems to indicate that a full stage change may take 1 to 5 years and repeated developmentally appropriate intervention to accomplish, it would be unrealistic to set a full stage or position change as a goal" (Rodgers & Widick, 1980).

2. Content Knowledge - Pre-and post-tests were used in this study for content knowledge; both were field tests of the instruments. One was a multiple-choice test devised to measure the lower-level thinking of knowledge, comprehension, and application. There was significant difference between the
pre-and post-tests for both the comparison and treatment groups, but no statistical significance for the post-test scores between the comparison and treatment groups.

Part two of the test consisted of two essay questions designed to reflect the higher-order thinking of analysis and synthesis. There was significance for pre- and post-tests for both the comparison and treatment groups. There was no significance between the two post-tests on question 1, but there was statistical significance between the comparison and treatment groups on question 2. In the treatment section using Developmental Instruction, the students were encouraged to consider two or three new points, reflect on their practice, and experience more personalism between instructor and students and student to student. The structure of the intervention encouraged discussions which, may along with the before-mentioned items, have contributed to the students development of higher-level thinking on the content tests.

3. Student Satisfaction

Two instruments were used in this study to measure student satisfaction. The quantitative measure did not indicate a statistical difference between the comparison and treatment groups, except on the item for testing. The treatment group did not think the test accurately measured the course content, which would be an accurate observation in light of the way the treatment section was taught. The comparison group’s instruction more closely followed the textbook from which the test was formulated.

The qualitative student satisfaction instrument was designed for this study. It was a more open-ended format and encouraged students to share their thoughts about the class. Because of the intervention, the treatment class had
been encouraged to express themselves. They were also encouraged and challenged to consider more than one viewpoint. These experiences were clearly reflected in the results of the qualitative instrument. The treatment group's positive responses to the metacategory of structure were statistically significant. There were too few classifications in the other categories for statistical significance, but overall, the comments elicited from the student satisfaction instruments indicated higher satisfaction in the treatment group.

The three research questions formulated for this study are explanatory features that provide a broader context for understanding the nature of cognitive development among preservice elementary education students.

1. Demographic Data

The demographic data documented the similarities between the comparison and treatment groups and the typicality of this sample to a national sample of elementary teacher education students.

Several demographic features of the sample indicate a parochialism about them that would indicate their backgrounds and life experiences would not be ones that would challenge and support cognitive development. They are mostly white and English-speaking; they attend a university fairly close to their home communities and want to return to their home communities to teach; their career aspirations are limited; and, at least in their preservice training, most of their acquaintances have similar backgrounds. There does not appear to be any exposure to differences in cultures, thinking, or experiences outside their own limited lives.
This is obviously still speculative at this point, but teacher education pre-service programs need to incorporate a developmental focus into their programs to move students beyond their limited horizons. A Developmental Instruction model incorporated over all four years of training could possibly move students from seeing the world so dualistically to seeing it in a broader context. As described earlier in the study, the problem of the changing student population and the mostly white teaching population could possibly be assisted by teachers with high cognitive development, those who can “read and flex” (Hunt, 1976) with the students.

2. Personality Type

The small sample size in this study did not lend itself to the generation of hypotheses about the relationship of personality type to cognitive development. Further research is needed in this area to see whether implications can be drawn from the data. Speculative information is available about different types of personality and movement along developmental scales, but more research findings need to be documented before further analysis can be formulated.

3. Interviews

The cognitive developmental scores as measured by the MER (Taylor and Porterfield, 1982) were reflected in student responses to qualitative interviews about issues of relevance in education, teaching, learning, and students. Ten students selected at random from the sample were interviewed; thus, the numbers were too small for statistical significance.
After analyzing the specific comments within categories, it appears the one multiplist interviewed did respond on a higher cognitive level than the other nine dualists. Her thoughts were broader in perspective. The dualists' answers were more simplistic in approach, without the necessary reflective thought put into the responses.

The interviews confirmed similar findings to the demographic data. Excluding the one multiplist, a fairly parochial picture can be drawn. The students appear to want to keep their futures similar to their pasts and do not want life experiences that challenge their cognitive thinking. Again, the data supports the need for preservice teacher education programs to incorporate the structure of challenge and support needed to move the students along the developmental path.
CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter includes a summary of the study, a statement of conclusions, and a discussion of their implications for practice. It concludes with recommendations for further research.

Introduction

The state of teacher education is in crisis. Researchers have identified a number of problems with the current teacher education process. Among the problems characteristic of these programs are low funding, low prestige, poor academic backgrounds of the incoming students, a weak theoretical base, and academic programs that are known for their minimal requirements. Graduates of these programs face a changing social climate that has intensified the demands on teachers to deal with diverse student populations and to take responsibility for moral, sex, and drug education.

How can preservice teacher education programs overcome these problems and develop a competent product? There is a large body of research in support of the developmental framework (Sprinthall and Theis-Sprinthall, 1983) that indicates persons functioning at higher stages of development perform more effectively in complex human interactions such as teaching. In other words, they
can "read" their students' needs and "flex" their approach to meet them (Hunt, 1976).

This study examined the impact of developmental instruction in a children's literature preservice methods course to determine the effectiveness of instructional strategies on student satisfaction, content knowledge, and upward movement on the Perry scheme. "Good and even great teachers are neither born nor made. They may be developed" (Theis-Sprinthall and Sprinthall, 1987).

Summary of the Study

This study presents an analysis of concerns relating to fostering increases in the cognitive development level of preservice elementary education students enrolled in a children's literature methods course. As such, several dimensions related to cognitive development were analyzed in this study.

First, the intervention was designed to increase cognitive development through the use of Developmental Instruction (Widick, Knefelkamp, and Parker, 1975) and to measure its impact via the MER (Taylor and Porterfield, 1982). Second, the researcher sought to find out whether using Developmental Instruction (Widick, Knefelkamp and Parker, 1975) would foster increased content knowledge acquisition. Third, the study was planned to see whether the use of Developmental Instruction (Widick, Knefelkamp and Parker, 1975) would impact on specific indicators of student satisfaction.

The background, career orientation, and programmatic experience of students were identified and compared with a national probability study that also provided a "typicality" of the population. The researcher attempted to
explore the relationship of cognitive development to personality type. Finally, students were interviewed about their conception of teaching to determine the relationship between cognitive development level and their view of teaching.

The first three of these were formulated into hypotheses and are related to the intervention discussed in chapter 3. The three hypotheses are as follows:

Hypothesis #1. The Perry post-test levels for the treatment class will not be significantly different from those of the comparison class, as measured by the Measure of Epistemological Reflection (Taylor and Porterfield, 1982).

Hypothesis #2. The retention of knowledge of children’s literature for the treatment class will not be significantly different from that of the comparison class, as measured by the post-content tests developed for this study.

Hypothesis #3. Student satisfaction in the treatment class will not be significantly different from that of the comparison group, as measured by the two student evaluation instruments.

The three research questions provided a broader context for the better understanding of the nature of cognitive development among preservice elementary education students. The three research questions are as follows:

Research Question #1. What is the nature of the student’s background, career orientation, and preservice experience in relation to a national probability sample of elementary education students; and what factors are likely to affect cognitive development?

Research Question #2. What is the relation of the student's personality type to cognitive level, and what implications can be drawn from this analysis?

Research Questions #3. What is the relation between the student’s conception of teaching and her cognitive development, and what implications can be drawn
from this analysis?

In chapter 1, a proposal was made to incorporate Developmental Instruction (Widick, Knefelkamp and Parker, 1975) in a preservice teacher education children's literature methods course. The Developmental Instruction model is based upon the work of William Perry and his research on the cognitive development of college students. This instructional model hypothesizes that by using this approach, students will learn more content, be more satisfied, and display growth on the cognitive development scale. The Developmental Instruction model was incorporated into the treatment section of the children's literature course in a quasi-experimental study. A highly structured instructional approach was used in the comparison section. The study also examined the relationship between personality type, background, and conception of teaching for a better understanding of the nature of cognitive development among preservice elementary education students. The sample was made up of female, undergraduate, preservice elementary education students in a medium-sized, midwestern university.

The review of literature in chapter 2 began with research about some of the problems facing teacher education today. Significant factors include the changing demographics and the social and political pressures on teachers. Public school students on the average are increasingly poor and nonwhite, while the teacher education students are on the average increasingly white, suburban, and rural. Handicapped students are being mainstreamed. Teachers are being saddled with drug education, sex education, and moral issues.

Obviously, coping with this complex environment can not be taught as a list of how-tos and rules. Certain skills that embody flexibility and open-mindedness are required, skills that are reflected in the higher positions on
Perry's developmental scheme. It was postulated that perhaps incorporating developmental models into preservice teacher education may move students to higher positions on Perry's cognitive development scheme. Research shows that persons operating at higher levels of thinking are better able to teach the diverse student population and respond to other demands confronting them in the schools (Oja, 1983; Theis-Sprinthall, 1984; Kohlberg, 1984).

Chapter 2 placed developmental theories in a historical context, focusing on the work of William Perry and college students. The literature about Developmental Instruction (Widick, Knefelkamp and Parker, 1975) was reviewed. The literature review ended with the formulation of three hypotheses and the research questions that the study examined.

Chapter three described the methodology for the study, which consisted of a quasi-experimental, non-equivalent control group in which one section of children's literature incorporated the Developmental Instruction (Widick, Knefelkamp and Parker, 1975) model and the other section of the course served as the comparison group. The independent variable was the Developmental Instruction (Widick, Knefelkamp and Parker, 1975) model; the dependent variables were cognitive development along the Perry scale, content knowledge as researched by pre- and post-tests, and student satisfaction as measured by two specific instruments. Three features of personality type, demographic data, and conception of teaching via student interviews were studied for their impact on the cognitive development of the sample for this study. The statistical measures used to analyze the data in the study were reported.

Chapter 4 analyzed and discussed the results of the study in terms of different areas of interest: the relation of Developmental Instruction and pre-
service teacher education students' cognitive developmental level; Developmental Instruction and preservice teacher education students' content knowledge; and Developmental Instruction and preservice teacher education students' satisfaction. Also documented were the students' personality types, demographics and their cognitive development in relation to their conceptions of teaching.

Findings

1. Cognitive Development

In this study, the teacher education students were closely distributed in the late dualistic to early mutiplistic stages (mean for both groups was 2.73), according to the MER score. These students fall where most undergraduate students fall on this continuum. This figure helps validate the study. There was no movement along the development scale during the course of time for the study.

In the context of existing research, this study supports the conclusion that a 16-week course is not a sufficient length of time to stimulate movement on the Perry scheme (Theis-Sprinthall, 1984, Baxter Magolda, 1988). Although some studies have demonstrated that growth is possible in a short time frame (Straub and Rodgers, 1987; Widick and Simpson, 1978; Blatt, 1980), it is unclear why growth is demonstrated in some studies and not in others. More research will be necessary to resolve whether longer time periods will make a significant difference, and what length of time is optimal. Developmental growth from one position to the next is a complex process; all the factors that affect these changes occur inside and outside the classroom. More research is necessary to resolve
what role school environment can play in a student's overall development.

Although this study did not report any significant growth through the use of Developmental Instruction, some of the other benefits of Developmental Instruction were confirmed. These include higher levels of thinking about the course content and a significantly higher level of student satisfaction in the course.

2. Content Knowledge

The treatment and the comparison groups had very similar results on the quantitative test that measured the lower-level thinking skills of knowledge, comprehension, and application. There was no significant difference between the two groups on the test of this measure.

There was a significant difference in the pre- and post-tests for the subjective portion of the tests, which measured the higher-level thinking skills of analysis and synthesis. The treatment group scored significantly higher than the comparison group on this instrument.

These higher-level intellectual skills support the hypothesis that Developmental Instruction does have an impact on how students think. The increased abilities of the treatment group to analyze and synthesize are indicative of the type of thinking characteristic of higher levels of cognitive development. If these abilities are nurtured, the beginnings of movement along the Perry Positions can be supported. This would support the assumption that a sustained effort would result in a higher level of cognitive growth in the treatment group.
3. Student Satisfaction

Student satisfaction for the sample was documented by two different measures. Except on the item about testing, there was no significant difference in the sample on the quantitative measures. The treatment group indicated more frequently that the testing did not adequately measure what was taught.

There was statistical significance on the qualitative measure for student satisfaction. The members of the treatment group had positive responses to the structure of the intervention. There was also statistical significance on the categories mentioned in the open-ended format of this instrument. Several categories of comments were mentioned only in the treatment group's evaluations.

4. Background Information

The demographic data were compiled on the students in the sample. The comparison and treatment groups were found to be similar to each other for age, gender, marital status, ethnic identification, student status, home community, preferred teaching setting and grade point average. These data also determined the typical nature of these preservice elementary education students as compared with a national study on elementary teacher education students.

5. Personality Type

Personality type was documented in this study. The small sample size restricted the generating of relationship hypotheses between Myers-Briggs per-
sonality type preferences and other measures, such as student satisfaction (i.e., need for structure, desire to relate to peers, preference for experiential learning, etc).

6. Interviews

The qualitative interviews appeared to reflect the students' cognitive development level and their conception of teaching. The small sample size of 10 precluded a significant statistical analysis. When the interviews were analyzed on a qualitative basis, the students' conception of teaching reflected their largely dualistic positions; however, one multiplist indicated a higher stage of cognitive thinking in relation to some issues.

Conclusions

Hypotheses

1. There was no difference between the comparison and treatment groups in cognitive development growth using the Perry scale, as measured by the MER (Taylor and Porterfield, 1982).

2. There was significant difference between the comparison and the treatment groups on one test measuring content knowledge. There was no significant difference for the test items measuring knowledge, comprehension, and applications.

3. Overall, the students in the treatment group were more satisfied than the students in the comparison group. This was demonstrated at a statistically
significant level for the structure component.

**Research Questions**

1. Personality type for the sample was reported, but no relationship was postulated between type and cognitive development because of the small sample size.

2. The demographic information in relation to students' background, career orientation, and programmatic experience did appear to reflect the students' cognitive development levels. Most students were fairly parochial in their background, present lives, and preferred teaching placements; they experienced limited diversity, had limited career aspirations, and related to their preservice training in more simplistic, technical terms. This was indicative of their dualistic stages of cognitive development.

3. The interviews revealed the students' conception of learning and reflected the dualistic thoughts of the students. One multiplist indicated a higher level of thinking on some questions. Some of the issues analyzed in the interviews included teaching as an art or science, the student's role model for teaching, preferred first placement, and interest in teaching in an urban/suburban/rural school district.

**Implications Drawn from this Study**

If the student population continues to change heterogeneously at the rate cited in Howey's (1983) and Haberman's (1984) reports, and the preservice teaching population remains a homogeneous one, then the need for preservice teacher
education programs with high cognitive levels will be even more important. It has been shown (Hunt and Joyce, 1967) that the higher the cognitive development of a teacher, the more flexible the teacher is in a classroom. Even though students in this sample did not show growth on the cognitive development scale as a result of the intervention, it was evident in this study that the intervention did significantly increase the cognitive thinking skills as measured on the pre- and post content tests. This point could be of benefit to teacher educators.

The significance of conducting research in the use of Developmental Instruction in teacher education is related to its impact on the professional development of teachers. The promise it holds for education is clear. Teachers with high cognitive levels are better able to meet the demands of today's classrooms.

Nevertheless, many questions remain about what can or should be done to promote these qualities in professional development programs. The environment for many new teachers may be overwhelming. Cognitive growth alone is not a panacea, but its role could be a significant part of a more comprehensive effort to improve our schools.

It is assumed from this study that time is a critical factor in whether growth occurs or not. Although some researchers have successfully achieved measurable upward movement within a single course, many researchers now believe that longer periods are required. This should be no surprise. Changing how a student processes information is really quite a feat. The fact that it is possible at all is gratifying to the teaching profession.

However, given that it takes a more comprehensive effort to succeed, teacher education programs have to begin to look at this issue across the curriculum. Can it be incorporated in all classes? This is a difficult question.
For all faculty to adopt these methods would be optimal, but problematic. Developmental Instruction requires commitment. It is not a technical change but a new approach. Willingness to invest the time would be critical to success. In fact, it may be preferable to have a psychologist skilled in Developmental Instruction team teach the class as in Widick and Simpson's study (1978). Whether these scenarios are practical is open for discussion but it is always useful to define the ideal situation and work toward it.

Although many disciplines are researching the use of Developmental Instruction, teacher education is the logical place to start. Success in this field would create a ripple effect that would be passed from university professor to college student, from college student to school child. Reflecting on the current state of public education leaves one with a sense of urgency that these techniques be adapted.

It is distressing given the change in public school student populations cited above, that our pool of teacher education students are so homogeneous. Developmental Instruction may help bridge the cultural gap between the suburban white teacher and the urban black or handicapped child, but more needs to be done. Active recruiting efforts need to be initiated to make the teacher education student population more heterogeneous and more academically proficient. To do so, it would be necessary for teacher education programs to receive a fair share of economic resources within the university. (Howey, Matthes and Zimpher, 1985)

The higher level of student satisfaction indicated in the study reflects the respect for individual needs inherent in Developmental Instruction. It makes logical sense that making an effort to match instruction to developmental level would result in greater satisfaction. The students in this study identified the
multiple viewpoints and the journals as highlights of the course indicating satisfaction with certain components of Developmental Instruction. In any study of teaching methods, student feedback has to be a primary criteria for evaluation.

It does not necessarily follow that emphasizing "how students think" instead of "what they think" should result in increased content knowledge. It did in this study and this fact alone justifies adopting this method of instruction. It was interesting in researching the literature that cognitive development was a better predictor of life success than academic achievement. Obviously no one would recommend neglecting academics, but as this study indicates, this should not be a primary concern with Developmental Instruction.

Due to the small sample size, personality type did not play a major role in this study, in relation to cognitive development.

Research has come a long way in identifying the stages of adult development. Educators are determining what tools are useful to nurture the development in classrooms and what sort of effort is required to achieve measurable student growth. It is evident that additional research with more sustained time periods has the greatest potential for identifying what approaches we must take.

Recommendations for Further Research

Recognizing that a single class is not sufficient, it is recommended that larger environments be studied. Some possibilities may include measuring different academic environments, such as a teacher education program with a large percentage of adult students, as opposed to one with predominantly college-age students. The +1 environment that might be created by a mix of ages
over a long period of time may be significant.

Whenever possible, teacher education should attempt to team with people trained in developmental theories. The teacher educator can focus on content taught; the other team member can pay heed to the format of Developmental Instruction.

A student satisfaction instrument that reflects the development theories needs to be refined to be reliable and valid. This third measure of Developmental Instruction needs to reflect this student feedback as accurately as possible.

From a pragmatic standpoint, the complexity of using Developmental Instruction may make it an unrealistic tool to implement across a curriculum. Widick (1978) raises the question of whether specific training programs for college faculty may be necessary to train people adequately in its use. It may be worthwhile to investigate the possibility of creating courses that have nurturing development as their primary goal. Historically, the debate about whether the college faculty of professional counselors should be responsible for this aspect of student life may lead to the implementation of courses that provide a professionally designed program of challenge and support to nurture the student’s cognitive growth.

Further study of the role of cognitive development and Developmental Instruction in teacher training is needed. When measuring whether movement along a development scheme can be affected by instructional techniques, a period of at least six months to two years should be used.

Studies that follow the relationship between cognitive level and professional performance of teacher education graduates would be very useful. Many of the assumptions of this study regarding the value of high cognitive develop-
ment and the ability of teachers to handle diversity merit further investigation. Specifically, the following issues are of interest:

What is the relationship between cognitive level and openness to cultural diversity? This study assumes that a positive correlation exists. Persons with a high cognitive level will be more open to differing cultures than persons with a low cognitive level. But the nature of the relationship has not been identified. If higher levels do lead to more openness, does this openness translate into more effective teaching of multicultural students?

Do graduates who are on a higher cognitive level accept urban public school assignments more readily or remain in teaching longer than other graduates?

Are these graduates measurably more effective as teachers than their peers and by what measures i.e. test scores, student satisfaction, class behavior, etc.?

Theis-Sprinthall's study (1984) that used several developmental schemes should be emulated in future research. More needs to be learned about the efficacy of these schemes. Perhaps Perry is not the best scheme for education.

Some of the basic assumptions of Developmental Instruction should be examined more closely. Should we assume that an environment that stimulates growth would necessarily be accompanied by greater student satisfaction? Growth can be painful too.

What is the role of course content and Developmental Instruction? It was noted that Children's Literature seemed to be naturally suited to this approach.
Would courses in other areas adapt more or less easily? Would a course whose primary purpose is developmental growth be a more effective method of stimulating growth?

What factors seem to be in play when developmental stage growth occurs? When significant growth among a group of students occurs, what determines who moves upward? Are there characteristics that indicate a readiness? Do certain personality traits more readily lead to growth?

Further research into the relationship between personality type and cognitive development is recommended. The small sample prohibited establishing relationships, but the researcher sees possibilities within the model of Developmental Instruction (Widick, Knefelkamp and Parker, 1975) and the broader context of cognitive development.

It perhaps may be premature to draw a profile based upon the sample's demographic information and to relate it to cognitive development, but further study into the relationship of the background, present lifestyle, and career aspirations may be of interest for further research.

Summary

The Developmental Instruction (Widick, Knefelkamp and Parker, 1975) model used in the preservice teacher education course in this study did enhance content learning and student satisfaction at a significant level. The measure for cognitive development indicated no growth for either the comparison or treatment group. This may have been the result of the short (16 weeks) length of the study. A recommendation was made to incorporate Developmental Instruction
(Widick, Knefelkamp, and Parker, 1975) in preservice teacher education curriculums for a minimum of six months to two years; perhaps a course could be designed specifically for nurturing cognitive development. The qualitative interviews did reflect the students' conception of teaching; both the quantitative and qualitative results should be considered in further research with a larger sample. The demographic data presented a sample of undergraduates with fairly similar backgrounds which may contribute to their dualistic level of thinking. The results of the Myers-Briggs personality inventory could be analyzed in a larger sample in relation to specific aspects of Developmental Instruction (Widick, Knefelkamp and Parker, 1975); with further research, the results perhaps could be applied to the broader context of movement along the cognitive developmental scale.
BIBLIOGRAPHY


Appendix A

Demographic Data
BACKGROUND QUESTIONNAIRE*

Will you please take the time to complete this questionnaire? The purpose of this questionnaire is to gather information about teacher education students enrolled in Children's Literature courses this semester. If you have any questions as you are filling out this form, please feel free to ask the instructor. You should be able to complete the questionnaire in approximately 30 minutes or less. Thank you for your cooperation.

When required, please check () to indicate your response.

1. Name: ____________________________________________

2. Age: ______________

3. Gender:
   ( ) Male
   ( ) Female

4. Marital Status:
   ( ) Single
   ( ) Married
   ( ) Other, Divorced or Separated

5. What is your ethnic identification?
   ( ) Black, not of Hispanic origin
   ( ) Hispanic
   ( ) Asian or Pacific Islander
   ( ) American Indian or Alaskan Native
   ( ) White, not of Hispanic origin
   ( ) Unknown

6. What is your academic major?
   ____________________________________________
7. Do you have an academic minor or an area of specialization?
   
   ( ) No
   ( ) Yes  If yes, please specify: ________________________

8. Student Classification:
   
   ( ) Undergraduate Student
   ( ) Graduate Student

9. How many college credit hours have you completed prior to this term?  
   
   _________

10. If you are in education courses for graduate credit are you enrolled in:
    
    ( ) Certification only
    ( ) Master's degree program

11. Are you:
    
    ( ) A full-time student (12 credits or more this term)
    ( ) A part-time student (fewer than 12 credit hours this term)

12. How many college credit hours are you taking this term?  
    
    _________

13. During the time school is in session do you have paid employment?
    
    ( ) No
    ( ) Yes  If yes: ( ) On campus  ( ) Off Campus

14. During the time school is in session, about how many hours a week do you usually spend in paid employment?
    
    _________ hours a week
15. Please estimate the percentage of financial assistance to support your college education which comes from these sources:

- Grants
- Scholarships, fellowships
- Loans
- Work-study assistance
- Employment
- Personal savings
- Family support
- Other (please specify)

TOTAL 100%

16. Please describe your residence while attending this university (check just one):

- Residential housing (dormitory, house, or apartment either on or near campus)
- Commuter (live in your own or parents' apartment or home)

17. When you came to this institution, what was the approximate distance from your family home to this campus?

- Less than 10 miles
- 10-50 miles
- 51-100 miles
- 101-500 miles
- 501-1000 miles
- 1001-2000 miles
- Greater than 2000 miles

18. How would you categorize the community in which you spent the major portion of your youth? (check only one)

- Rural
- Small Town
- Suburban
- Urban (up to 500,000)
- Major urban (over 500,000)
- Moved too often to respond to question
19. At the end of last term, what was your cumulative grade point Average?

__________

20. At the end of last term, what was you cumulative grade point Average in education courses?

__________

21. What language other than English do you speak? Check here if you consider yourself fluent.

() None
() Spanish
() French
() German
() Other (please specify) ________________

22. In which one type of community setting would you prefer to teach?

() Rural
() Suburban
() Urban (up to 500,000)
() Major urban (over 500,000)

23. Before your first teaching job, would you be willing to take a position: YES NO

Within a 50-mile radius of your graduating Institution
In your home town
Within a 50-mile radius of your home town
Within your home state
Within your geographic region (e.g., Midwest)
Anywhere nationally
24. For your first teaching job, describe the setting you would prefer (check one for each set):

A. ( ) Traditional classroom
   ( ) Progressive classroom

B. ( ) Low-income children
   ( ) Middle-income children
   ( ) High-income children

C. ( ) Children of low ability
   ( ) Children of average ability
   ( ) Children of high ability

D. ( ) Mainstreamed classroom (including children with physical and mental handicaps)
   ( ) Classes with no special needs population
25. To what extent would you consider the educational opportunities listed below as your career develops?

<table>
<thead>
<tr>
<th>Role</th>
<th>Would not consider this role</th>
<th>Might consider this role</th>
<th>Would definitely seek this role</th>
</tr>
</thead>
<tbody>
<tr>
<td>A principal</td>
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<tr>
<td>A curriculum or instructional supervisor</td>
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<tr>
<td>A team leader or department chair</td>
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<tr>
<td>A coach</td>
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<td>A mentor to beginning teachers</td>
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<tr>
<td>A counselor</td>
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<td>A superintendent</td>
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<tr>
<td>A professor</td>
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<tr>
<td>A leader in a teachers organization</td>
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<tr>
<td>A school board member</td>
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<tr>
<td>A cooperating teacher/clinical professor</td>
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<tr>
<td>Other(s) (please specify)</td>
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</table>
26. Has your college preparation for teaching in the elementary school:

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Somewhat</th>
<th>A great deal</th>
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</thead>
<tbody>
<tr>
<td>increased your sensitivities to the moral and ethical aspects of teaching</td>
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<tr>
<td>provide you with a knowledge base to effectively engage in teaching</td>
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<tr>
<td>broadened your understanding of alternative approaches to teaching and learning</td>
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<td>broadened your understanding of the legal, political, and economic dimension of schooling</td>
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<td>assisted you in clarifying beliefs about teaching</td>
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<td>broadened your understanding of how one comes to know</td>
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<tr>
<td>provided you with a knowledge base to deal with student discipline</td>
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<tr>
<td>prepared your work with special learners as in PL 94-142</td>
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<tr>
<td>increased your knowledge of the variety of ways of teaching</td>
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</table>
27. Which of these teaching activities would you feel most comfortable using in your classroom?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Never</th>
<th>Rarely</th>
<th>Occasionally</th>
<th>Often</th>
<th>Very Often</th>
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<tr>
<td>Lecture</td>
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<td>Individual or Group Problem Solving</td>
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<td>Demonstration</td>
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<td>Roleplaying</td>
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<td>Small or Large Group Discussion</td>
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<td>Peer Teaching</td>
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<td>Student Presentations</td>
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<td>Field Trips</td>
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<td>Films or Videos</td>
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<td>Computer Instructions</td>
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<td>Simulations</td>
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<td>Cooperative Learning Groups</td>
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28. At this point in time, to what extent have these sources influenced your teaching ability?

<table>
<thead>
<tr>
<th>Source</th>
<th>No Influence</th>
<th>Little Influence</th>
<th>Moderate Influence</th>
<th>Much Influence</th>
<th>Very much Influence</th>
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<td>Observing Peers or Professors</td>
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<tr>
<td>Actual Teaching Experience</td>
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<td>Reading About Teaching</td>
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<td>Observing Experienced Teachers</td>
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29. In your opinion, what would be the **ideal** way to learn to teach?

<table>
<thead>
<tr>
<th>Actual Teaching Experience</th>
<th>Not Helpful</th>
<th>A little Helpful</th>
<th>Somewhat Helpful</th>
<th>Very Helpful</th>
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</tr>
<tr>
<td>Supervisory-evaluated</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Practice</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Self-evaluated Practice</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Formal Instruction or</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Coursework on Teaching</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

30. Thank you very much.

* Adapted from the AACTE RATE Study and the Teaching Associate Inventory
Table 36

**Question #2: What is your age?**

<table>
<thead>
<tr>
<th>Age</th>
<th>Treatment Number</th>
<th>Treatment Percentage</th>
<th>Comparison Number</th>
<th>Comparison Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>6</td>
<td>40%</td>
<td>11</td>
<td>61%</td>
</tr>
<tr>
<td>21</td>
<td>6</td>
<td>40%</td>
<td>4</td>
<td>22%</td>
</tr>
<tr>
<td>22</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>23</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>33</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>36</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td>39</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>100%</strong></td>
<td><strong>18</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

* *Totals may not equal 100% because of rounding to whole percentages.*

Table 37

**Question #3: What is your gender?**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Treatment Number</th>
<th>Treatment Percentage</th>
<th>Comparison Number</th>
<th>Comparison Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>15</td>
<td>100%</td>
<td>18</td>
<td>100%</td>
</tr>
<tr>
<td>Male</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>100%</strong></td>
<td><strong>18</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Table 38

**Question #4: What is your marital status?**

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Treatment</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>Single</td>
<td>13</td>
<td>87%</td>
</tr>
<tr>
<td>Married</td>
<td>2</td>
<td>13%</td>
</tr>
<tr>
<td>Other: Divorced or</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Separated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 39

**Question #5: What is your ethnic identification?**

<table>
<thead>
<tr>
<th>Ethnic Identification</th>
<th>Treatment</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>White</td>
<td>12</td>
<td>80%</td>
</tr>
<tr>
<td>Black</td>
<td>1</td>
<td>7%</td>
</tr>
<tr>
<td>Asian</td>
<td>1</td>
<td>7%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1</td>
<td>7%</td>
</tr>
<tr>
<td>Total *</td>
<td>15</td>
<td>100%</td>
</tr>
</tbody>
</table>

* Totals may not equal 100% because of rounding to whole percentages.
### Table 40

**Question #6: What is your academic major?**

<table>
<thead>
<tr>
<th>Academic Major</th>
<th>Treatment</th>
<th>Percentage</th>
<th>Comparison</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary Education</td>
<td>15</td>
<td>100%</td>
<td>18</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>100%</strong></td>
<td><strong>18</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

### Table 41

**Question #7: What is your academic minor or specialization?**

<table>
<thead>
<tr>
<th>Academic Minor</th>
<th>Treatment</th>
<th>Percentage</th>
<th>Comparison</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>5</td>
<td>33%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>LD / BD</td>
<td>1</td>
<td>7%</td>
<td>5</td>
<td>28%</td>
</tr>
<tr>
<td>Kindergarten</td>
<td>1</td>
<td>7%</td>
<td>4</td>
<td>22%</td>
</tr>
<tr>
<td>Math</td>
<td>2</td>
<td>13%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Communications</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td>Reading</td>
<td>1</td>
<td>7%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>Early Childhood</td>
<td>1</td>
<td>7%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>Pre-Kindergarten</td>
<td>1</td>
<td>7%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>Psychology</td>
<td>1</td>
<td>7%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>Art</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Business</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>English</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>Social Studies</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>100%</strong></td>
<td><strong>18</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

* Totals may not equal 100% because of rounding to whole percentages.
Table 42

Question #8: What is your student classification?

<table>
<thead>
<tr>
<th>Student Classification</th>
<th>Treatment</th>
<th></th>
<th>Comparison</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>15</td>
<td>100%</td>
<td>18</td>
<td>100%</td>
</tr>
<tr>
<td>Graduate</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>100%</td>
<td>18</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 43

Question #10: If you are in education courses for graduate credit are you enrolled in:

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Treatment</th>
<th></th>
<th>Comparison</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>Certification</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Master's Degree Program</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Not a Graduate Student</td>
<td>151</td>
<td>100%</td>
<td>18</td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>100%</td>
<td>18</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 44

Question #12: College Credit Hours This Term

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Treatment</th>
<th></th>
<th></th>
<th>Comparison</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
<td></td>
<td>Number</td>
<td>Percentage</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>0</td>
<td>0%</td>
<td></td>
<td>3</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>1</td>
<td>7%</td>
<td></td>
<td>1</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>1</td>
<td>7%</td>
<td></td>
<td>4</td>
<td>22%</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>5</td>
<td>33%</td>
<td></td>
<td>2</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>3</td>
<td>20%</td>
<td></td>
<td>6</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>5</td>
<td>33%</td>
<td></td>
<td>1</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>0</td>
<td>0%</td>
<td></td>
<td>1</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>Total *</td>
<td>15</td>
<td>100% *</td>
<td></td>
<td>18</td>
<td>100% *</td>
<td></td>
</tr>
</tbody>
</table>

* Totals may not equal 100% because of rounding to whole percentages.

Table 45

Question #13: Do you have paid employment?

<table>
<thead>
<tr>
<th>Employment</th>
<th>Treatment</th>
<th></th>
<th></th>
<th>Comparison</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
<td></td>
<td>Number</td>
<td>Percentage</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>8</td>
<td>53%</td>
<td></td>
<td>6</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>On Campus</td>
<td>2</td>
<td>13%</td>
<td></td>
<td>7</td>
<td>39%</td>
<td></td>
</tr>
<tr>
<td>Off Campus</td>
<td>4</td>
<td>27%</td>
<td></td>
<td>5</td>
<td>28%</td>
<td></td>
</tr>
<tr>
<td>Both</td>
<td>1</td>
<td>7%</td>
<td></td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>100%</td>
<td></td>
<td>18</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>
Table 46

**Question #14: During the time school is in session, about how many hours a week do you usually spend in paid employment?**

<table>
<thead>
<tr>
<th>Work Hours</th>
<th>Treatment</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
<td>Number</td>
<td>Percentage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do Not Work</td>
<td>8</td>
<td>53%</td>
<td>6</td>
<td>33%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>11%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>7%</td>
<td>1</td>
<td>6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>0%</td>
<td>3</td>
<td>17%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.5</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>1</td>
<td>7%</td>
<td>1</td>
<td>6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>1</td>
<td>7%</td>
<td>1</td>
<td>6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total *</td>
<td>15</td>
<td>100% *</td>
<td>18</td>
<td>100% *</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Totals may not equal 100% because of rounding to whole percentages.

Table 47

**Hours of Paid Employment**

<table>
<thead>
<tr>
<th>National Mean</th>
<th>Treatment Mean</th>
<th>Comparison Mean</th>
<th>Sample Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1 Hours</td>
<td>14 Hours</td>
<td>12.3 Hours</td>
<td>13.2 Hours</td>
</tr>
</tbody>
</table>
**Table 48**

**Question #15: What is your percentage of financial assistance?**

<table>
<thead>
<tr>
<th>Financial Assistance</th>
<th>Treatment Number</th>
<th>Percentages Given**</th>
<th>Comparison Number</th>
<th>Percentages Given**</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Answer</td>
<td>2</td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Grants</td>
<td>4</td>
<td>1%, 7%, 20%, 30%</td>
<td>4</td>
<td>5%, 10%, 15%, 94%</td>
</tr>
<tr>
<td>Scholarships &amp; Fellowships</td>
<td>4</td>
<td>5%, 15%, 50%, 90%</td>
<td>3</td>
<td>2%, 50%, 75%</td>
</tr>
<tr>
<td>Loans</td>
<td>5</td>
<td>5%, 30%, 49%, 50%, 95%</td>
<td>4</td>
<td>2%, 25%, 50%, 70%</td>
</tr>
<tr>
<td>Work-study</td>
<td>1</td>
<td>20%</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Employment</td>
<td>4</td>
<td>2%, 10%, 20%, 25%</td>
<td>3</td>
<td>2%, 5%, 20%</td>
</tr>
<tr>
<td>Personal Savings</td>
<td>4</td>
<td>3%, 10%, 10%, 75%</td>
<td>2</td>
<td>15%, 50%</td>
</tr>
<tr>
<td>Family</td>
<td>11</td>
<td>5%, 5%, 25%, 30%, 40%, 787%, 95%, 95.5%, 100%, 100%, 100%, 100%, 100%</td>
<td>10</td>
<td>20%, 95%, 95%, 100%, 100%, 100%, 100%, 100%, 100%</td>
</tr>
<tr>
<td>Sibling Reductions</td>
<td>1</td>
<td>.5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Number - Number of Respondents  ** Percentages Given - Percentages Given by those Respondents
Table 49

**Question #16:** Please describe your residence while attending this university.

<table>
<thead>
<tr>
<th>Residence</th>
<th>Treatment Number</th>
<th>Treatment Percentage</th>
<th>Comparison Number</th>
<th>Comparison Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>11</td>
<td>73%</td>
<td>16</td>
<td>89%</td>
</tr>
<tr>
<td>Commuter</td>
<td>4</td>
<td>27%</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>100%</td>
<td>18</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 50

**Living Arrangements**

<table>
<thead>
<tr>
<th>Residence</th>
<th>National Mean</th>
<th>Treatment Mean</th>
<th>Comparison Mean</th>
<th>Sample Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>50%</td>
<td>73%</td>
<td>89%</td>
<td>82%</td>
</tr>
<tr>
<td>Commuter</td>
<td>50%</td>
<td>27%</td>
<td>11%</td>
<td>18%</td>
</tr>
<tr>
<td>Total *</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

* Totals may not equal 100% because of rounding to whole percentages.
Table 51

Question #17: What is the approximate distance between this institution and your family home?

<table>
<thead>
<tr>
<th>Distance</th>
<th>Treatment</th>
<th></th>
<th>Comparison</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>Less than 10</td>
<td>2</td>
<td>13%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>10 - 50</td>
<td>3</td>
<td>20%</td>
<td>6</td>
<td>33%</td>
</tr>
<tr>
<td>51 - 100</td>
<td>3</td>
<td>20%</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td>101 - 500</td>
<td>4</td>
<td>27%</td>
<td>8</td>
<td>44%</td>
</tr>
<tr>
<td>501 - 1000</td>
<td>3</td>
<td>20%</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
<td><strong>100%</strong></td>
<td>18</td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

* Totals may not equal 100% because of rounding to whole percentages.
Table 52

**Distance From Home**

<table>
<thead>
<tr>
<th>Distance</th>
<th>National %</th>
<th>Treatment %</th>
<th>Comparison %</th>
<th>Sample %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10 Miles</td>
<td>18%</td>
<td>13%</td>
<td>0%</td>
<td>6%</td>
</tr>
<tr>
<td>10 - 50 Miles</td>
<td>36%</td>
<td>20%</td>
<td>33%</td>
<td>27%</td>
</tr>
<tr>
<td>51 - 100 Miles</td>
<td>19%</td>
<td>20%</td>
<td>11%</td>
<td>15%</td>
</tr>
<tr>
<td>101 - 500 Miles</td>
<td>23%</td>
<td>27%</td>
<td>44%</td>
<td>36%</td>
</tr>
<tr>
<td>501 - 1000 Miles</td>
<td>3%</td>
<td>20%</td>
<td>11%</td>
<td>15%</td>
</tr>
<tr>
<td>More than 1000 Miles</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Total *</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

* Totals may not equal 100% because of rounding to whole percentages.
Table 53

**Question #18: Categorization of Home Community**

<table>
<thead>
<tr>
<th>Category</th>
<th>Treatment</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>Rural</td>
<td>3</td>
<td>20%</td>
</tr>
<tr>
<td>Small town</td>
<td>5</td>
<td>33%</td>
</tr>
<tr>
<td>Suburban</td>
<td>5</td>
<td>33%</td>
</tr>
<tr>
<td>Urban</td>
<td>1</td>
<td>7%</td>
</tr>
<tr>
<td>Major urban</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Moved too often</td>
<td>1</td>
<td>7%</td>
</tr>
</tbody>
</table>

Total * 15 100% * 18 100% *

* Totals may not equal 100% because of rounding to whole percentages.
**Table 54**

*Question #19: Total Grade Point Average*

<table>
<thead>
<tr>
<th>Grade Point Average</th>
<th>Treatment Number</th>
<th>Percentage</th>
<th>Comparison Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>2.3</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2.4</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>2.5</td>
<td>1</td>
<td>7%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>2.7</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>2.8</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>2.9</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>3.0</td>
<td>4</td>
<td>27%</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td>3.1</td>
<td>4</td>
<td>27%</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td>3.2</td>
<td>2</td>
<td>13%</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td>3.3</td>
<td>1</td>
<td>7%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>3.4</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td>3.8</td>
<td>1</td>
<td>7%</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td>3.9</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>4.0</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Total * 15 100% * 18 100% *

*Totals may not equal 100% because of rounding to whole percentages.*
Table 55

**Question #20: Grade Point Average for Education Classes Only**

<table>
<thead>
<tr>
<th>Grade Point Average</th>
<th>Treatment</th>
<th></th>
<th></th>
<th>Comparison</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td></td>
<td></td>
<td>Number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Answer</td>
<td>4</td>
<td>27%</td>
<td></td>
<td>2</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>2.3</td>
<td>1</td>
<td>7%</td>
<td></td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>2.9</td>
<td>1</td>
<td>7%</td>
<td></td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>3.0</td>
<td>1</td>
<td>7%</td>
<td></td>
<td>4</td>
<td>22%</td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td>1</td>
<td>7%</td>
<td></td>
<td>1</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>3.3</td>
<td>1</td>
<td>7%</td>
<td></td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>3.4</td>
<td>0</td>
<td>0%</td>
<td></td>
<td>1</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>3.5</td>
<td>0</td>
<td>0%</td>
<td></td>
<td>1</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>3.6</td>
<td>0</td>
<td>0%</td>
<td></td>
<td>3</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>3.8</td>
<td>2</td>
<td>13%</td>
<td></td>
<td>4</td>
<td>22%</td>
<td></td>
</tr>
<tr>
<td>4.0</td>
<td>4</td>
<td>27%</td>
<td></td>
<td>2</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>*<em>Total</em></td>
<td>15</td>
<td>100% *</td>
<td></td>
<td>18</td>
<td>100% *</td>
<td></td>
</tr>
</tbody>
</table>

* Totals may not equal 100% because of rounding to whole percentages.
Table 56

Question #21: What other languages do you speak?

<table>
<thead>
<tr>
<th>Languages</th>
<th>Treatment</th>
<th></th>
<th>Comparison</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>None</td>
<td>10</td>
<td>67%</td>
<td>13</td>
<td>72%</td>
</tr>
<tr>
<td>Spanish</td>
<td>3</td>
<td>20%</td>
<td>3</td>
<td>17%</td>
</tr>
<tr>
<td>French</td>
<td>2</td>
<td>13%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>German</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>No Answer</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>100%</strong></td>
<td><strong>18</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

* Totals may not equal 100% because of rounding to whole percentages.

Table 57

Language Proficiency

<table>
<thead>
<tr>
<th>Language</th>
<th>National Mean</th>
<th>Treatment Mean</th>
<th>Comparison Mean</th>
<th>Sample Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>60%</td>
<td>67%</td>
<td>72%</td>
<td>69%</td>
</tr>
<tr>
<td>Spanish</td>
<td>21%</td>
<td>20%</td>
<td>17%</td>
<td>19%</td>
</tr>
<tr>
<td>French</td>
<td>6%</td>
<td>13%</td>
<td>0%</td>
<td>6%</td>
</tr>
<tr>
<td>German</td>
<td>5%</td>
<td>0%</td>
<td>6%</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

* Totals may not equal 100% because of rounding to whole percentages.
Table 58

**Question #22: Preferred Teaching Setting**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Treatment</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>Rural</td>
<td>2</td>
<td>13%</td>
</tr>
<tr>
<td>Suburban</td>
<td>9</td>
<td>60%</td>
</tr>
<tr>
<td>Urban</td>
<td>3</td>
<td>20%</td>
</tr>
<tr>
<td>Major urban</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>No Answer</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>Total *</td>
<td>15</td>
<td>100% *</td>
</tr>
</tbody>
</table>

* Totals may not equal 100% because of rounding to whole percentages.

Table 59

**Question #23: Preferred First-Year Teaching Location**

<table>
<thead>
<tr>
<th>Location</th>
<th>Treatment Percentage</th>
<th>Comparison Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Within 50 miles of college</td>
<td>13%</td>
<td>80%</td>
</tr>
<tr>
<td>In home town</td>
<td>20%</td>
<td>73%</td>
</tr>
<tr>
<td>50 miles from home town</td>
<td>13%</td>
<td>80%</td>
</tr>
<tr>
<td>Within home state</td>
<td>13%</td>
<td>73%</td>
</tr>
<tr>
<td>Within Geographic region</td>
<td>13%</td>
<td>73%</td>
</tr>
<tr>
<td>Anywhere nationally</td>
<td>40%</td>
<td>53%</td>
</tr>
</tbody>
</table>
Table 60

Preferred First-Year Teaching Location

(Percentages are of respondents who answered positively on each location.)

<table>
<thead>
<tr>
<th>Location</th>
<th>National</th>
<th>Treatment</th>
<th>Control</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within 50 miles of college</td>
<td>76%</td>
<td>80%</td>
<td>72%</td>
<td>76%</td>
</tr>
<tr>
<td>Within 50 miles of home town</td>
<td>79%</td>
<td>80%</td>
<td>83%</td>
<td>81%</td>
</tr>
<tr>
<td>Within home state</td>
<td>77%</td>
<td>73%</td>
<td>72%</td>
<td>73%</td>
</tr>
<tr>
<td>Within geographic region</td>
<td>60%</td>
<td>73%</td>
<td>78%</td>
<td>75%</td>
</tr>
<tr>
<td>Anywhere nationally</td>
<td>27%</td>
<td>53%</td>
<td>44%</td>
<td>48%</td>
</tr>
</tbody>
</table>

Table 61

Question #24 A: Preferred First Setting

<table>
<thead>
<tr>
<th>Setting</th>
<th>Treatment</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Number</td>
<td>Percentage</td>
<td>Percentage</td>
</tr>
<tr>
<td>Traditional</td>
<td>2</td>
<td>12</td>
<td>13%</td>
<td>67%</td>
</tr>
<tr>
<td>Progressive</td>
<td>12</td>
<td>5</td>
<td>80%</td>
<td>28%</td>
</tr>
<tr>
<td>No Answer</td>
<td>1</td>
<td>1</td>
<td>7%</td>
<td>6%</td>
</tr>
<tr>
<td>Total*</td>
<td>15</td>
<td>18</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

* Totals may not equal 100% because of rounding to whole percentages.
### Table 61 (Continued)

#### Question #24 B: Preferred First Setting

<table>
<thead>
<tr>
<th>Setting</th>
<th>Treatment</th>
<th></th>
<th>Comparison</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>Low-income children</td>
<td>2</td>
<td>13%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>Middle-income children</td>
<td>10</td>
<td>67%</td>
<td>12</td>
<td>67%</td>
</tr>
<tr>
<td>High-income children</td>
<td>1</td>
<td>7%</td>
<td>5</td>
<td>28%</td>
</tr>
<tr>
<td>No Answer</td>
<td>2</td>
<td>13%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>100%</strong></td>
<td><strong>18</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

* Totals may not equal 100% because of rounding to whole percentages.

### Table 61 (Continued)

#### Question #24 C: Preferred First Setting

<table>
<thead>
<tr>
<th>Setting</th>
<th>Treatment</th>
<th></th>
<th>Comparison</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>Low ability</td>
<td>2</td>
<td>13%</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>Average ability</td>
<td>10</td>
<td>67%</td>
<td>12</td>
<td>67%</td>
</tr>
<tr>
<td>High ability</td>
<td>1</td>
<td>7%</td>
<td>5</td>
<td>28%</td>
</tr>
<tr>
<td>No Answer</td>
<td>2</td>
<td>13%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>100%</strong></td>
<td><strong>18</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

* Totals may not equal 100% because of rounding to whole percentages.
Table 61 (Continued)

**Question #24 D: Preferred First Setting**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Treatment</th>
<th></th>
<th>Comparison</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>Mainstreamed</td>
<td>9</td>
<td>60%</td>
<td>6</td>
<td>33%</td>
</tr>
<tr>
<td>No special needs</td>
<td>5</td>
<td>33%</td>
<td>12</td>
<td>67%</td>
</tr>
<tr>
<td>No Answer</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>100%</strong></td>
<td><strong>18</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Table 62

**Question #25: Considered Educational Opportunities (Treatment)**

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>No Answer</th>
<th>Would not Consider</th>
<th>Might Consider</th>
<th>Would Definitely Seek</th>
</tr>
</thead>
<tbody>
<tr>
<td>A principal</td>
<td>7%</td>
<td>13%</td>
<td>67%</td>
<td>13%</td>
</tr>
<tr>
<td>A curriculum or instructional supervisor</td>
<td>7%</td>
<td>47%</td>
<td>47%</td>
<td></td>
</tr>
<tr>
<td>A team leader or department chair</td>
<td>7%</td>
<td>40%</td>
<td>40%</td>
<td>13%</td>
</tr>
<tr>
<td>A coach</td>
<td>7%</td>
<td>27%</td>
<td>47%</td>
<td>20%</td>
</tr>
<tr>
<td>A mentor to begining teachers</td>
<td>20%</td>
<td>33%</td>
<td>20%</td>
<td>27%</td>
</tr>
<tr>
<td>A counselor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A superintendent</td>
<td>7%</td>
<td>60%</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td>A professor</td>
<td>20%</td>
<td>33%</td>
<td>33%</td>
<td>13%</td>
</tr>
<tr>
<td>A leader in a teachers’ organization</td>
<td>13%</td>
<td>13%</td>
<td>20%</td>
<td>33%</td>
</tr>
<tr>
<td>A school board member</td>
<td>7%</td>
<td>13%</td>
<td>20%</td>
<td>27%</td>
</tr>
<tr>
<td>A cooperating teacher/clinical professor</td>
<td>7%</td>
<td>27%</td>
<td>40%</td>
<td>27%</td>
</tr>
<tr>
<td>School Psychologist</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daycare owner/teacher</td>
<td></td>
<td></td>
<td></td>
<td>7%</td>
</tr>
<tr>
<td>LD/BD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speech Therapist</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 62 (Continued)

Question #25: Considered Educational Opportunities (Comparison)

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>No Answer</th>
<th>Would not Consider</th>
<th>Might Consider</th>
<th>Would Definitely Seek</th>
</tr>
</thead>
<tbody>
<tr>
<td>A principal</td>
<td>11%</td>
<td>22%</td>
<td>44%</td>
<td>17%</td>
</tr>
<tr>
<td>A curriculum or instructional supervisor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A team leader or department chair</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A coach</td>
<td>28%</td>
<td>6%</td>
<td>17%</td>
<td>17%</td>
</tr>
<tr>
<td>A mentor to beginning teachers</td>
<td>6%</td>
<td>11%</td>
<td>39%</td>
<td>22%</td>
</tr>
<tr>
<td>A counselor</td>
<td></td>
<td>6%</td>
<td>11%</td>
<td>50%</td>
</tr>
<tr>
<td>A superintendent</td>
<td>28%</td>
<td>17%</td>
<td>39%</td>
<td>11%</td>
</tr>
<tr>
<td>A professor</td>
<td>11%</td>
<td>11%</td>
<td>50%</td>
<td>11%</td>
</tr>
<tr>
<td>A leader in a teachers' organization</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A school board member</td>
<td>6%</td>
<td>17%</td>
<td>22%</td>
<td>28%</td>
</tr>
<tr>
<td>A cooperating teacher/clinical professor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Psychologist</td>
<td></td>
<td></td>
<td></td>
<td>6%</td>
</tr>
<tr>
<td>Daycare owner/teacher</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD/BD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speech Therapist</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 63

Other Educational Opportunities

(To facilitate the presentation of results, the following percentages reflect students from possible ["might"] to definite inclinations to seek these roles.)

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>National %</th>
<th>Treatment %</th>
<th>Comparison %</th>
<th>Sample %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal</td>
<td>58%</td>
<td>80%</td>
<td>67%</td>
<td>73%</td>
</tr>
<tr>
<td>A curriculum or instructional supervisor</td>
<td>75%</td>
<td>94%</td>
<td>83%</td>
<td>88%</td>
</tr>
<tr>
<td>A team leader or department chair</td>
<td>86%</td>
<td>93%</td>
<td>100%</td>
<td>96%</td>
</tr>
<tr>
<td>A mentor to beginning teachers</td>
<td>89%</td>
<td>80%</td>
<td>83%</td>
<td>82%</td>
</tr>
<tr>
<td>A superintendent</td>
<td>32%</td>
<td>33%</td>
<td>56%</td>
<td>44%</td>
</tr>
<tr>
<td>A professor</td>
<td>58%</td>
<td>79%</td>
<td>78%</td>
<td>78%</td>
</tr>
<tr>
<td>A leader in a teachers' organization</td>
<td>71%</td>
<td>60%</td>
<td>78%</td>
<td>69%</td>
</tr>
<tr>
<td>A school board member</td>
<td>73%</td>
<td>80%</td>
<td>78%</td>
<td>79%</td>
</tr>
<tr>
<td>A cooperating teacher/clinical professor</td>
<td>87%</td>
<td>94%</td>
<td>94%</td>
<td>94%</td>
</tr>
</tbody>
</table>
Table 64

**Question #26: College Preparation for Teaching in the Elementary School (Treatment)**

<table>
<thead>
<tr>
<th>Type of Preparation</th>
<th>No Answer</th>
<th>Not At All</th>
<th>Somewhat</th>
<th>A Great Deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>increased your sensitivities to the moral and ethical aspects of teaching</td>
<td>20%</td>
<td>33%</td>
<td>47%</td>
<td></td>
</tr>
<tr>
<td>provided you with a knowledge base to effectively engage in teaching</td>
<td>13%</td>
<td>47%</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>broadened your understanding of individual and cultural differences</td>
<td>7%</td>
<td>33%</td>
<td>47%</td>
<td>13%</td>
</tr>
<tr>
<td>broadened your understanding of alternative approaches to teaching and learning</td>
<td>7%</td>
<td>47%</td>
<td>47%</td>
<td></td>
</tr>
<tr>
<td>broadened your understanding of legal, political, and the economic dimensions of schooling</td>
<td>7%  47%</td>
<td>27%</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>assisted you in clarifying beliefs about teaching</td>
<td>27%</td>
<td>47%</td>
<td>27%</td>
<td></td>
</tr>
<tr>
<td>broadened your understanding of how one comes to know</td>
<td>27%</td>
<td>53%</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>provided you with a knowledge base to deal with student discipline</td>
<td>7%  47%</td>
<td>40%</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>prepared your work with special learners as in PL 94-142</td>
<td>7%</td>
<td>27%</td>
<td>33%</td>
<td>27%</td>
</tr>
<tr>
<td>increased your knowledge of the variety of ways of teaching</td>
<td>13%</td>
<td>40%</td>
<td>47%</td>
<td></td>
</tr>
</tbody>
</table>
Table 64 (Continued)

**Question #26: College Preparation for Teaching in the Elementary School (Comparison)**

<table>
<thead>
<tr>
<th>Type of Preparation</th>
<th>No Answer</th>
<th>Not At All</th>
<th>Somewhat</th>
<th>A Great Deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>increased your sensitivities to the moral and ethical aspects of teaching</td>
<td>6%</td>
<td>50%</td>
<td>44%</td>
<td></td>
</tr>
<tr>
<td>provided you with a knowledge base to effectively engage in teaching</td>
<td>22%</td>
<td>50%</td>
<td></td>
<td>28%</td>
</tr>
<tr>
<td>broadened your understanding of individual and cultural differences</td>
<td>6%</td>
<td>17%</td>
<td>22%</td>
<td>33%</td>
</tr>
<tr>
<td>broadened your understanding of alternative approaches to teaching and learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>broadened your understanding of legal, political, and the economic dimensions of schooling</td>
<td>11%</td>
<td>33%</td>
<td></td>
<td>56%</td>
</tr>
<tr>
<td>assisted you in clarifying beliefs about teaching</td>
<td>6%</td>
<td>22%</td>
<td>33%</td>
<td>39%</td>
</tr>
<tr>
<td>broadened your understanding of how one comes to know</td>
<td>6%</td>
<td>28%</td>
<td>56%</td>
<td>11%</td>
</tr>
<tr>
<td>provided you with a knowledge base to deal with student discipline</td>
<td>11%</td>
<td>22%</td>
<td>50%</td>
<td>17%</td>
</tr>
<tr>
<td>prepared your work with special learners as in PL 94-142</td>
<td>17%</td>
<td>17%</td>
<td></td>
<td>22%</td>
</tr>
<tr>
<td>increased your knowledge of the variety of ways of teaching</td>
<td>6%</td>
<td>22%</td>
<td>22%</td>
<td>50%</td>
</tr>
</tbody>
</table>
Table 65

Question #27: Which of these teaching activities would you feel most comfortable using in the classroom? (Treatment)

<table>
<thead>
<tr>
<th>Teaching Activity</th>
<th>No Anwer</th>
<th>Never</th>
<th>Rarely</th>
<th>Occasionally</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>7%</td>
<td>67%</td>
<td>27%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual Problem Solving</td>
<td>20%</td>
<td>40%</td>
<td>40%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstration</td>
<td>13%</td>
<td>47%</td>
<td>40%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roleplaying</td>
<td>13%</td>
<td>67%</td>
<td>20%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small or Large Group Discussions</td>
<td>7%</td>
<td>47%</td>
<td>47%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer Teaching</td>
<td>13%</td>
<td>27%</td>
<td>53%</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Presentations</td>
<td>27%</td>
<td>53%</td>
<td>20%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field Trips</td>
<td>7%</td>
<td>13%</td>
<td>47%</td>
<td>33%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Films or Videos</td>
<td>7%</td>
<td>40%</td>
<td>27%</td>
<td>27%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer Instruction</td>
<td>7%</td>
<td>13%</td>
<td>33%</td>
<td>47%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simulations</td>
<td>33%</td>
<td>40%</td>
<td>27%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooperative Group Learning</td>
<td>20%</td>
<td>40%</td>
<td>40%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 65 (Continued)

Question #27: Which of these teaching activities would you feel most comfortable using in the classroom? (Comparison)

<table>
<thead>
<tr>
<th>Teaching Activity</th>
<th>No Answer</th>
<th>Never</th>
<th>Rarely</th>
<th>Occasionally</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>11%</td>
<td>72%</td>
<td>17%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual Problem Solving</td>
<td>6%</td>
<td>11%</td>
<td>83%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstration</td>
<td></td>
<td>11%</td>
<td>78%</td>
<td>11%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role playing</td>
<td>11%</td>
<td>28%</td>
<td>44%</td>
<td>17%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small-or Large-Group Discussions</td>
<td></td>
<td>33%</td>
<td>50%</td>
<td>17%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer Teaching</td>
<td>17%</td>
<td>44%</td>
<td>28%</td>
<td>11%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Presentations</td>
<td>6%</td>
<td>61%</td>
<td>28%</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field Trips</td>
<td>11%</td>
<td>50%</td>
<td>28%</td>
<td>11%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Films or Videos</td>
<td>11%</td>
<td>33%</td>
<td>33%</td>
<td>22%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer Instruction</td>
<td>22%</td>
<td>28%</td>
<td>39%</td>
<td>11%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simulations</td>
<td>6%</td>
<td>44%</td>
<td>44%</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooperative Group Learning</td>
<td>6%</td>
<td>22%</td>
<td>56%</td>
<td>17%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 66

Question #28: At this point in time, to what extent have these sources influenced your teaching ability? (Treatment)

<table>
<thead>
<tr>
<th>Source</th>
<th>No Answer</th>
<th>None</th>
<th>Little</th>
<th>Moderate</th>
<th>Much</th>
<th>Very Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observing Peers or Professors</td>
<td></td>
<td></td>
<td>40%</td>
<td>47%</td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>Actual teaching experience</td>
<td></td>
<td>7%</td>
<td>7%</td>
<td>47%</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>Reading about teaching</td>
<td></td>
<td>27%</td>
<td>60%</td>
<td>13%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observing experienced teachers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervisory-evaluated practice</td>
<td>13% 7%</td>
<td>13%</td>
<td>7%</td>
<td>27%</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>Self-evaluated practice</td>
<td></td>
<td>7%</td>
<td>20%</td>
<td>40%</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>Formal instruction or coursework on teaching</td>
<td>13% 40%</td>
<td>47%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 66 (Continued)

**Question #28:** At this point in time, to what extent have these sources influenced your teaching ability? (Comparison)

<table>
<thead>
<tr>
<th>Source</th>
<th>No Answer</th>
<th>None</th>
<th>Little</th>
<th>Moderate</th>
<th>Much</th>
<th>Very Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observing Peers or Professors</td>
<td>28%</td>
<td>33%</td>
<td>39%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual teaching experience</td>
<td>6%</td>
<td></td>
<td></td>
<td>28%</td>
<td>61%</td>
<td></td>
</tr>
<tr>
<td>Reading about teaching</td>
<td>6%</td>
<td></td>
<td></td>
<td>61%</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>Observing experienced teachers</td>
<td>7%</td>
<td>50%</td>
<td>33%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervisory-evaluated practice</td>
<td>6%</td>
<td>6%</td>
<td></td>
<td>33%</td>
<td>33%</td>
<td>17%</td>
</tr>
<tr>
<td>Self-evaluated practice</td>
<td>11%</td>
<td>6%</td>
<td></td>
<td>39%</td>
<td>33%</td>
<td>11%</td>
</tr>
<tr>
<td>Formal instruction or coursework on teaching</td>
<td>6%</td>
<td>6%</td>
<td>61%</td>
<td>28%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 67

**Question #29: In your opinion, what would be the ideal way to learn to teach? (Treatment)**

<table>
<thead>
<tr>
<th>Source</th>
<th>No Answer</th>
<th>Not helpful</th>
<th>Little</th>
<th>Somewhat</th>
<th>Very</th>
<th>Most</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual teaching experience</td>
<td>7%</td>
<td>27%</td>
<td>67%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading about teaching</td>
<td>13%</td>
<td>40%</td>
<td>40%</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervisory-evaluated practice</td>
<td>13%</td>
<td>7%</td>
<td>47%</td>
<td>33%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-evaluated practice</td>
<td>20%</td>
<td>53%</td>
<td>27%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formal instruction or coursework on teaching</td>
<td>27%</td>
<td>33%</td>
<td>33%</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 67 (Continued)

**Question #29: In your opinion, what would be the ideal way to learn to teach? (Comparison)**

<table>
<thead>
<tr>
<th>Source</th>
<th>No Answer</th>
<th>Not helpful</th>
<th>Little</th>
<th>Somewhat</th>
<th>Very</th>
<th>Most</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual teaching experience</td>
<td>28%</td>
<td>72%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading about teaching</td>
<td>17%</td>
<td>50%</td>
<td>44%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervisory-evaluated practice</td>
<td>6%</td>
<td>33%</td>
<td>33%</td>
<td>28%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-evaluated practice</td>
<td></td>
<td></td>
<td>44%</td>
<td>44%</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>Formal instruction or coursework on teaching</td>
<td>6%</td>
<td>50%</td>
<td>39%</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix B

Cognitive Development

Measure of

Epistemological

Reflection and

Scores
PLEASE NOTE:

Copyrighted materials in this document have not been filmed at the request of the author. They are available for consultation, however, in the author's university library.

These consist of pages:

206-216
Appendix C

Content Knowledge

Tests and Results
1. Literature for children is characterized as
   a. books that appropriately reflect the emotions and experiences of children today.
   b. books that have a child protagonist.
   c. books that rightfully include emotions of nostalgia, cynicism and despair.
   d. the same as literature for adults except that authors write down to children's level.

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   a. anticipating endings.
   b. extended vocabulary building.
   c. wide reading.
   d. writing book reports.

3. A well-constructed plot
   a. can be predicted by children.
   b. depends on coincidence.
   c. grows logically from the actions of the characters.
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   a. continually distinguished contribution to children's literature.
   b. the most distinguished contribution to American literature for children.
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   b. number of siblings.
   c. seating position in the classroom.
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   b. children should not be asked to read aloud in class.
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   d. teachers should read aloud books that are above children's conversation level.

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   a. that children will develop literary understandings without teacher intervention.
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   a. early bedtime.
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    a. counting things in the pictures.
    b. listening to an exciting plot.
    c. naming objects in the book.
    d. retelling stories they have heard.

11. What does a concept book describe?
    a. abstract ideas.
    b. good story lines.
    c. objectives.
    d. strong characters.

12. An appropriate way of following the use of a wordless book is for young children to
    a. draw the same pictures that are in the book.
    b. look at the book from back to front.
    c. tell the story orally.
    d. write their own story to accompany the illustrations.

13. A picture storybook differs from a picture book and an illustrated book for this reason:
    a. It gives meaning through both illustrations and text.
    b. The pictures are an extension of the text.
    c. The pictures make it appropriate for adults.
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14. Three elements of design that artists must use are
    a. height, length, and width.
    b. line, space and color.
    c. perspective, personification and paint.
    d. size, shape and quantity.

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    a. Are the illustrations confined to one medium?
    b. How are pictures made an integral part of the text?
    c. Is the illustrator skilled in book design?
    d. Is the jacket pretty?
16. An essential reason for teaching children about folktale variants is
   a. to acquaint them with fables.
   b. to develop the skill of comparison.
   c. to help them see similar elements in folktales across cultures.
   d. to learn about the unique motifs from various countries.

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   c. magical stories from other lands.
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18. Modern literary fairy tales differ from traditional literature in the following way:
   a. animal characters.
   b. an identifiable author.
   c. modern settings.
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19. One convention that authors must follow in writing science fiction is
   a. be consistent with scientific facts.
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   d. use elaborate scientific terminology.

20. One example of misuse of poetry in the classroom is
   a. neglect.
   b. questioning.
   c. use of contemporary poems.
   d. use of narrative verse.

21. Using models from literature enables children a poetry writing in this way:
   a. It allows children to notice poetic structures.
   b. It allows children to think like a poet.
   c. It encourages imaginative choices of topics.
   d. It offers opportunities for originality.

22. A definition of contemporary realistic fiction would include one of these points:
   a. imaginative writing about life as it was lived in the past.
   b. imaginative writing that reflects life.
   c. writing about impossible happenings that seem plausible.
   d. writing about true events.

23. One of the values of contemporary realistic fiction is
   a. it provides possible role models.
   b. it shows readers how life was lived in the past.
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24. If the following plot line were followed in a story, how might it be evaluated? “A Native American girl faces insurmountable odds—lazy father, drunken brothers, a dying mother—until her white teacher at the U.S. Government School gives her special love and encouragement to rise above her situation.”
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27. In The Cabin Faced West the author, Jean Fritz used the word “pated” and showed through the story’s action that it meant “stop by for dinner.” What was the author’s purpose in doing this?
   a. She found the word in her research and felt compelled to use it.
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   a. Children can search for facts in fiction stories
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29. According to the authors, the major purpose of the literature program in the elementary school is
   a. developing appreciation
   b. developing literary awareness
   c. discovering delight in books
   d. interpreting literature

30. What is the most important aspect of the classroom environment for literature?
   a. an enthusiastic teacher
   b. an extensive paperback book collection
   c. reading centers
   d. well displayed new books
31. Approximately how many books should a primary grade teacher read to children?
   a. five to six books per year
   b. four books per month
   c. at least one book per year
   d. two to three books per week

32. What is a web?
   a. A kind of visual brainstorm that helps to generate ideas and link them to a central focus
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35. The ultimate goal of a literature program, according to the text is
   a. to have children become lifetime readers
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Test B

Short Essay

1. Develop a plan that you will utilize in your classroom to incorporate children's literature into the language arts curriculum.

2. Using your favorite children's literature book, examine the literary elements, with examples from the book. Prioritize, in order from the most to the least, the elements with the greatest appeal to you.
Name ______________
Date ______________

Post-test

1. Literature for children is characterized as
   a. books that appropriately reflect the emotions and experiences of children today.
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Course Goals According to Course Outline

I. Course Goals
   A. Knowledge
   B. Analysis
   C. Application
   D. Application
   E. Application

II. Course Objectives
   A. Knowledge
      1. Comprehension
      2. Knowledge/Comprehension
      3. Synthesis
      4. Application
      5. Application
      6. Comprehension
      7. Application
   
   B. Skills
      1. Analysis
      2. Analysis
      3. Application
      4. Analysis
      5. Synthesis
      6. Application
      7. Synthesis
      8. Synthesis
   
   C. Attitudes & Values
      1. Affective Domain
         a. Valuing
         b. Receiving
         c. Receiving
         d. Valuing
         e. Valuing
         f. Organizing
         g. Valuing
         h. Characterizing
         i. Valuing
## Pre & Post Test Content

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<td>6 (Traditional Literature)</td>
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## Course Objectives
(As Outlined in Course Syllabus)

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(To Correspond With Subjective Test Questions)
## Pre-test and Post-test

(Subjective Test Portion)

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233
## Course Objectives
(As Outlined in Course Syllabus)

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(To correspond with Objective Test questions)
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*(Objective Test Portion)*

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<tr>
<td><strong>Totals</strong></td>
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<td>7 = 20%</td>
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* Item difficulty and discrimination will be computed for each test item. After this item analysis of the pretest, and invalid items will be identified.
Item Analysis on Multiple Choice Questions

In completing an item analysis on the multiple choice component of the post test, item difficulty and item discrimination were computed using the guideline from Anastasia (1989). Item difficulty for multiple choice questions should be around 65. An item discrimination value of +30 is average. If the item discrimination value is negative then the lower third of the group did better on that item than the upper third of the group.

Items would be omitted on the basis of...
(A) item difficulty is too high, 100, i.e. item is too easy
(B) item discrimination is negative
(C) both item difficulty and discrimination are not appropriate

In this case the following items have been identified to be omitted to improve this field tested measure. (see table on page 231)

Ten questions were inappropriate on the multiple choice test for the treatment group. Eleven questions were inappropriate on the multiple choice test for the control group. Four questions were shared by both groups. Further examination of the distractors for these four shared questions may help clarify the construction problems.
## Post test Multiple Choice Question Analysis

<table>
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Appendix D

Student Satisfaction

Quantitative

and

Qualitative

Instruments
UNIVERSITY OF DAYTON
FACULTY EVALUATION FORM

PLEASE NOTE: Fill in Instructor’s name only. Do not fill in your name or student I.D. number. ALSO, PLEASE DO NOT FOLD SCANNER SHEET.

I. Please supply the following biographical data by marking the appropriate letter on the enclosed scanner sheet:

1. Your School:   A. Arts & Sciences   B. Education   C. Business
                 D. Engineering   E. Engineering Technology

2. Your Class:    A. Freshman   B. Sophomore   C. Junior   D. Senior   E. Other

3. Your Sex:      A. Male       B. Female

4. This course was: A. Required       B. Elective

5. Your current grade point average: A. Below 2.00   B. 2.00-2.50
                                       C. 2.51-3.00   D. 3.00-3.50
                                       E. 3.51-4.00

6. The grade that I expect in this course is: A. "A"       B. "B"       C. "C"
                                              D. "D"       E. "F"

II. Please respond to the following by marking the appropriate letter on your scanner sheet: A. Strongly agree   B. Agree   C. Uncertain
                                                             D. Disagree   E. Strongly disagree

7. The goals and objectives of this course were well defined.

8. This course effectively met these objectives.

9. The instructor was fair in grading examinations and assignments.

10. Students were able to express themselves freely as a result of the instructor’s openness to their ideas.

11. This course was well coordinated and well organized.

12. The subject matter was clearly presented by the instructor.

13. This course was adequate in meeting my personal goals.

14. Examinations related well to the material emphasized in the course.

15. The instructor was willing to help students who experienced difficulty in the course.

16. The instructor put material across in an interesting way.

17. Assignments were relevant to course content.

18. The instructor spoke clearly and audibly.

19. Examinations and assignments were graded and returned within a reasonable time to students.

20. The instructor respected students as persons.

21. The instructor prepared well for classes.

22. I learned a great deal from this course.

Please respond to the following if applicable to this course:

23. Supplemental course material, such as handouts, visual aids, bibliographies, etc., enriched this course.

24. The textbook was an asset to this course.

Please respond to the following by marking the appropriate letter on your scanner sheet: A. Excellent   B. Above average   C. Average
                                                                                     D. Below Average   E. Poor

25. Everything considered, how would you rate this course?

26. Everything considered, how would you rate the instructor?
QUANTITATIVE STUDENT EVALUATION

**Items from Instrument**
7, 8, 9, 11, 12, 14, 16, 17, 18, 19, 21
10, 13, 15, 20, 22

**Components of Developmental Instruction**
Structure
Personal atmosphere
QUALITATIVE INSTRUMENT

EDT 360/543
Course Evaluations
April, 1989

I. Please check (√) to indicate your responses.

1. Student classification:
   (√) Undergraduate student
   ( ) Graduate student

2. Course section
   (√) EDT 360/543 01 (mornings)
   ( ) EDT 360/543 N1 (evenings)

II. Please respond to the following items in relation to this course, EDT 360/543, Children’s Literature. Thank you.

1. How has this course affected your teaching preparation or career plans

2. What advice would you give other students, before they take Children’s Literature, as the key to doing well in this course?

3. A. Describe the teaching methods employed this semester that were beneficial to you as a student.

3. B. Describe those teaching methods not beneficial to you as a student.

4. How did the other students in the class affect your learning experience? What role did they play, if any?

5. How did the instructor’s evaluation of your work in the class affect your learning experience?
6. In most learning experiences, we are exposed to new perspectives that affect the way we think. Describe when and if this occurred for you during this quarter.

7. How did the course change your thinking?

8. What effect did the structure of the course have on your learning experience? Was it flexible enough, or too structured?

9. Some of the activities in this course involved experiential learning. Describe what role (if any) this type of activity played in your learning experience.

10. How would you describe the general atmosphere in this course in terms of personal interaction?

11. What role did each of the items listed below play in your learning experience?:

   a. Text
   b. Children’s books
   c. Presentations
   d. Discussions
   e. Other handouts
   f. Was there another significant factor?

12. Additional comments:

Thank you for your time in responding to this questionnaire.

*Adopted from the MER (Taylor and Porterfield, 1982) and Developmental Instruction (Widick, 1975, Knefelkamp, 1974).
## Qualitative Evaluations

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The numbered questions on the evaluations reflect those stated Components of Developmental Instruction.
Categories

1. Information about books
2. Use of literature
3. Value of reading
4. Attendance
5. Assignments
6. Lecture
7. Active listening
8. Exposure to new books
9. Small group discussions
10. Large group discussions
11. Value of the library
12. Teaching careers
13. Evaluation
14. Exam
15. Presentation on death
16. Whole language
17. Multi-ethnic
18. Different points of view, open mindedness
19. Structure of the class
20. Experiential learning
21. Personal atmosphere
22. Diversity of the topics discussed
23. Text
24. Chapter Summaries
25. Presentations by the students
26. Instruction
27. Community resources
28. Bibliotherapy
29. Value of peers
30. Journals
31. Value of creativity in teaching
32. Value of using quality literature in teaching
Categories assigned to components of Developmental Instruction

**Components**

**Comparison Group**
1. Structure
2. Peers
3. Experiential
4. Content - Children's Literature
5. Personal atmosphere
6. Diversity of Content
7. Miscellaneous (Teaching career)

**Treatment group**
1. Structure
2. Peers
3. Experiential
4. Content - Children's Literature
5. Personal Atmosphere
6. Diversity of content
7. Miscellaneous (Teaching career)

**Categories**

Comparison Group
4, 5, 6, 13, 19, 23
9, 10, 25, 29
11, 20
1, 2, 3, 8
21, 26
16, 17, 18, 22
12

Treatment group
4, 5, 6, 13, 14, 19, 23, 24, 30, 31
9, 10, 25, 29
7, 11, 20, 27
1, 2, 3, 8, 28, 33
21, 26
15, 16, 17, 18, 22
12, 32
Appendix E
Myers-Briggs
DIRECTIONS:

There are no "right" or "wrong" answers to these questions. Your answers will help show how you like to look at things and how you like to go about deciding things. Knowing your own preferences and learning about other people's can help you understand where your special strengths are, what kinds of work you might enjoy and be successful doing, and how people with different preferences can relate to each other and be valuable to society.

Read each question carefully and mark your answer on the separate answer sheet. Make no marks on the question booklet. Do not think too long about any question. If you cannot decide on a question, skip it but be careful that the next space you mark on the answer sheet has the same number as the question you are then answering.

Read the directions on your answer sheet, fill in your name and any other facts asked for and, unless you are told to stop at some point, work through until you have answered all the questions you can.
Appendix F

Student Interviews
FORMAT FOR INTERVIEWS

I. Before taping

1. Welcome
2. Reiterate that I am interested in how they think about teaching, learning, students, and education. There are no right or wrong answers to these questions that what I am interested in is their thinking.
3. Ask permission to record with anonymity.

BEGIN TAPE

II. Questions

1. Looking back over your whole life can tell me about a powerful learning experience that you have had in school?
   a. Can you describe this experience?
   b. How did it affect you?

2. I assume since you are in my Children’s Literature class that you intend to teach - is that correct?
   a. Where do you think you will teach in your first teaching position?
   b. How do you envision your ideal first teaching position?
      (1) How would you see your “ideal” principal?
   c. What will your life be like in 15 years? Describe it?

3. Do you see teaching as a science or an art?
   a. Explain your answer?

4. Have you been in the “Block Experience” here at the University of Dayton?
   a. Describe the experience?
   b. How did it affect you personally and professionally?
   c. What advice would you give to other teacher education students about to participate in the “Block?”

5. Why did you decide to study teaching?
   a. What will likely be the positive and negative aspects of teaching?

6. Have you had any teachers that you truly consider a role model
for you as a teacher?
a. Describe the attributes they had?
b. Describe their method of instruction?
   (1) What were some advantages/disadvantages of this method?

7. Describe the way in which you see students in elementary school?
a. Are you aware of how they can learn best?
b. What atmosphere is most conducive to encouraging this
   learning?
   (1) Describe this atmosphere?

8. How would you go about planning for teaching?
a. How would you know if the students succeeded?
b. How would you know if you were successful as a teacher?

III. Conclusion

1. Are there other questions I should have asked you or other
   comments you may have, that would have addressed the issues
   I am interested in teaching, learning, students and education?

2. Thank-you so much for your time.
GOALS OF THE QUALITATIVE INTERVIEWS

1. Are the students' developmental levels reflected in their conception of teaching?

2. How closely do the interviews reflect the students' MER scores?

Qualitative Interviews-Data Analysis

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## Results

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Appendix G

Course Information

Course Outline, Course Syllabus, Course Assignments

Minute Paper, and Daily Log
Literature for Children and Adolescents
EDT 360/543

Faculty

Patricia M. Hart
229-3346
Office: C-217
Office hours: Tuesday, 10:30 am-12:30 pm.
           Wednesday, 2:30 pm-4:30 pm.

Offered 2 Fall, 2 Winter, 1 Summer-second session
Prerequisite: None

Catalog Description: This course is designed to study the background and
development of children's literature, its practical application in the cur­
iculum and the formulation of criteria for judging various genres. It is re­
quired of students in elementary education.

I. Course Goals:

The intent of this course is to:

A. Provide students with an opportunity to read different types of litera­
ture for children and adolescents.

B. Enable students to use literary analysis procedures to evaluate and
   appreciate quality literature for children and adolescents.

C. Provide information on techniques to integrate the literature based
   classroom.

D. Expose students to the characteristics of a literature based classroom.

E. Provide for students a positive attitude towards quality literature and
   its benefit for children.

II. Course Objectives

A. Knowledge
   The student will be able to:
1. Cite various types of literature written for children and adolescents indicating potential classroom use.

2. Identify trends in the history of literature for children and adolescents.

3. Construct criteria for evaluation of literary works.

4. Familiarize oneself with a wide variety of children's literature.

5. Explore community resources available in teaching students literature.

6. Identify the works of particular distinguished authors.

7. Cite the ways literature might be used to help children and adolescents cope with their life situations.

B. Skills
1. Classify various types of children's literature on the basis of genre of literature

2. Determine individual needs and interests of students and relate them to possible literature selections.

3. Refine the skill of oral communication by presenting to the class creative uses in the classroom for types of literature.

4. Distinguish between trade and text books and their uses in the classroom.

5. Collect and organize ideas for activities, techniques, and approaches that enable the youth and adolescents to respond in a variety of different ways to literature.

6. Demonstrate the appropriate skills to share literature through reading and storytelling with children and adolescents.

7. Participate in discussions and written learning opportunities that demonstrate knowledge of critical analysis of literature for children and adolescents.
C. Attitudes and Values

The student will value the following, and demonstrate an attitude about the importance of presenting literature to children and adolescents in present and future personal/professional activities. The student will be able to...

1. Value literature as an important part of the K-12 curriculum that assists in developing children and adolescents cognitively as well as affectively.

2. Appreciate the complexity of literature for children and adolescents.

3. Recognize the changing role and increased importance of literature in the education of youth.

4. Demonstrate an awareness of humanistic values that are present in the education of youth and adolescents.

5. Show respect for the values and attitudes of ethnic groups in America as demonstrated by the quest to become more knowledgeable in the customs, language, beliefs, and behavior of those groups.

6. Design literature learning experiences to increase appreciation of literature as well as to use literature more effectively in the classroom.

7. Demonstrate an awareness of the value of using literature to develop sensitivity towards the needs of all individuals including minorities and the handicapped.

8. Assume responsibility for being aware of trends in the development of literature for children and adolescents.

9. Value and respect children’s individual responses to literature.

II. Course Topics

Valuing Literature for Children
Children’s Response to Literature
History of Children’s Literature
Early Books
Picture Books
Traditional Literature
Poetry
Contemporary Realistic Fiction
Historical Fiction and Biography
Informational Books
Planning the Literature Program
Extending and Evaluating Children's Understanding of Literature
Criteria for Judging the Quality of Literature

IV. Instructional Procedures

Lecture
Large and small group discussions
Speakers
Field trips
Small group presentations

V. Student Evaluation Criteria

1. Attendance and participation
2. Reading and reporting on 32 books of different types of literature
3. Author study
4. Oral presentation
5. Research paper (graduate students)
6. Reading of text
7. Final test

VI. Clinical Experiences

These activities allow the students enrolled in the course to integrate classroom learning and presentation with the needs and experiences of youth and adolescents.

1. The student will participate in a field trip to the public library.

2. The student will participate in small group presentation on activities to use in a classroom with a particular type of literature.
VII. Field-Based Experiences:

None

VIII. Resources


B. Instructional Books and Materials

1. Records of poems, ballads, and stories.
2. Filmstrips/Sound Filmstrips
3. Film and videotapes.
4. Transparencies.
5. Caldecott and Newbery Award books
6. Collections of books for children and adolescents.

C. Supplementary Resources:

Books


Periodicals

1. The ALAN Review—Assembly on Literature for Adolescents- National Council of Teachers of English ALAN/NCTE Urbana, IL. (Fall, Winter, Spring).

2. The Bulletin of the Children's Literature Assembly School of Human and Educational Services, Rochester, MI.

3. Signal. Special Interest Group—A Network of Adolescent Literature, English Department, Illinois State University, Normal, IL.

4. The Horn Book.


IX. Date of Syllabus:

EDT 360/543
Winter 1989
Patricia M. Hart
229-3346
Office Hours:
  Tuesday 10:30 am-12:30 pm
  Wednesday 2:30-4:30 pm
Office: Chaminade 217

Comparison Group
  Th 1/5 Course Information
  T 1/10 MER
  AT Th 1/12 Pre-test, Introductions
  AT T 1/17 Demographic data, Introductions (cont.)
  AT Th 1/19 Valuing literature, Chapter 1
  AT T 1/24 Children's Response, Chapter 2
  Th 1/26 CMC visit
  T 1/31 Public Library visit
  VT Th 2/2 Beginning Books, Chapter 4
  VT T 2/7 Picture Books, Chapter 5
  AT Th 2/9 Traditional Literature, Chapter 6
  AT T 2/14 Myers-Briggs and Traditional Literature, Chapter 6
  AT Th 2/16 Modern Fantasy, Chapter 7
  T 2/21 Holiday, Midterm
  AT Th 2/23 Modern Fantasy, Chapter 7
  AT T 2/28 Poetry, Chapter 8
  AT Th 3/2 Poetry, Chapter 8
  AT T 3/7 Contemporary Realistic Fiction, Chapter 9
  AT Th 3/9 Contemporary Realistic Fiction, Chapter 9
  VT T 3/14 Historical Fiction and Biography, Chapter 10
  VT Th 3/16 Historical Fiction and Biography, Chapter 10
  AT T 3/21 Informational Books, Chapter 11
  Th 3/23 Easter Holiday
  T 3/28 Public Library Time
  Th 3/30 Visit to Townview
  VT T 4/4 Developing a Literature Program, Chapter 12
  VT Th 4/6 Developing a Literature Program, Chapter 12
  AT T 4/11 MER
  AT Th 4/13 Informational Books, Chapter 11 (cont.)
  AT T 4/18 Post-test
  Th 4/20 Evaluations
  T 4/25 Exam Week 8:00 EDT 360/543
Winter 1989
Patricia M. Hart
229-3346
Office Hours:
   Tuesday 10:30 am-12:30 pm
   Wednesday 2:30-4:30 pm
Office: Chaminade 217

Treatment Group
T 1/10 Introductions, MER, Pre-test
AT T 1/17 Demographic data-Introductions (cont.)
   Course Information
AT T 1/24 CMC visit
   Valuing Literature, Chapter 1
   Children's Response, Chapter 2
T 1/31 Public Library visit
VT T 2/27 Beginning Books, Chapter 4
   Picture Books, Chapter 5
AT T 2/14 Myers-Briggs
   Traditional Literature, Chapter 6
AT T 2/21 Modern Fantasy, Chapter 7
AT T 2/28 Poetry, Chapter 8
AT T 3/7 Contemporary Realistic Fiction, Chapter 9
   Young Adult Literature speaker
VT T 3/14 Historical Fiction and Biography, Chapter 10
AT T 3/21 Informational Books, Chapter 11
   Whole language visit
AT T 4/4 Developing a Literature Program, Chapter 12 and 13
T 4/6 Developing a Literature Program, Chapter 12
T 4/11 MER
   Content Integration
T 4/18 Post-test
   Evaluations
T 4/25 Exam Week 4:30 am-7:00 am Audiovisuals and Literature

*AT-Audio Taped
VT- Video Taped
EDT360
CHILDREN’S LITERATURE
Winter, 1988-89
Patricia M. Hart

SPECIFIC REQUIREMENTS COMPARISON GROUP

1. Attend Class. Attendance is important. Information will be covered in class that is not in the textbooks. If you miss, it is your responsibility to find out what you missed and do the necessary work to catch up. This is a participation class so sharing literature during class time is an important part of the course.

2. Read assigned parts of text and handouts. The instructor will specify important areas of each chapter to focus your reading.

3. Reading

On the dates listed on the syllabus, be prepared to discuss the text’s chapter on the genre of literature. Discussions will focus on information from each chapter. Using the suggested title and authors at the end of each chapter, select an appropriate number of books and read them for the discussion. On an 8 x 5 index card list:

- Title
- Author
- Illustrator
- Publisher
- Copyright date
- Main plot
- Reading Level (primary, etc.)
- Ideas for uses in the classroom

On the back of the cards consult the chapter’s “Guides for Evaluating” the type of literature. Evaluate the book, using these standards. Include your own thoughts after reading the books.

With consideration to library due dates, bring your books to class to share in our discussions.

4. Choose an author of interest to you. Read 8 selections (different from your file books) of this author’s works. Type a 2-3 page paper reporting on the books. Compare, contrast, and critique the author’s development. Please note the author’s appeal for you, and your students. This is due Tuesday, April 25, 1989. Bring books by author to share in a class presentation. Include a handout for other class members of a
bibliography that lists the author's name with book titles, copyright dates, the publisher and illustrator.

5. **Oral Presentations - Small groups**

Choose from the following types of children's literatures, area of most interest to you:

- Picture books Ch. 5
- Traditional Literature Ch. 6
- Modern Fantasy Ch. 7
- Poetry Ch. 8
- Contemporary Realistic Fiction Ch. 9
- Historical Fiction & Biography Ch. 10
- Informational Books Ch. 11

Consulting the chapter you have chosen, prepare a 20 minute presentation to the class. Include a handout of ideas a teacher can use to incorporate the type of literature in the classroom. Then actually share with the class the genre of literature using creative techniques such as dramatics, role playing, audio visuals, props, puppetry, music, cooking, etc. This will be a group decision and there will be class time set aside to meet and discuss ideas. Students will choose the chapter they would like to present on Thursday, January 19, 1989.

The week following your group's presentation a paper from each student will be turned in to me. This paper will be a project commentary and evaluation. Based on your participation in the presentation think about what you learned about the type of literature and uses in the classroom. Choose some books, activities you will most probably use in your teaching. What do the activities chosen assume about you children as learners - are they active or passive in the process? What about your role as teacher? Are you the dominant force in the class or the facilitator for the children's learning process? Feel free to share other thoughts focusing particularly on the type of literature.

The oral presentations will be:

- Picture Books 2/7
- Traditional literature 2/14
- Modern Fantasy 2/23
- Poetry 3/2
- Contemporary Realistic Fiction 3/9
- Historical Fiction & Biography 3/16
- Informational Books 4/13
EDT 360
Children’s Literature
Winter, 1988
Patricia M. Hart

Specific Requirements -Treatment Group

1. This class is experiential in its approach, so attendance is encouraged to fully benefit from the discussions and the sharing of literature.

2. Read assigned parts of text and handouts.

3. Buy a “journal” that is compatible with your learning style. The journal can be loose leaf paper in a 3-ring binder or an 8 1/2" by 11" spiral notebook. Bring this to class every session. Included in the journal will be:
   a. Your reactions to the books you choose to read for each genre of literature. Record the information from the book you will need in your teaching.
   b. Evaluate the book using your own thoughts incorporated with each chapter’s section, “Guides for Evaluating” the particular type of literature.
   c. Students are free to utilize an index card format to record information on the books.
   d. Journals will also be used to write observations, questions, reflections, emotions, among other reactions to books read, text read, filed trips experienced, class methodology, discussions and other thoughts pertinent to the class.
   e. The journals will be turned in to me a minimum of six times during the semester and I will write comments using a dialogue approach.
   f. Please bring the journal to each session to support your thoughts for class discussions and for writing exercises during class time. Journals will have to be kept neat and presentable to insure my ability to read your work.

4. We will cover types of literature on the dates noted on the syllabus. Read the number of books indicated on the course assignment.
5. We will read two books in common (they both count towards the total number read for that genre).
   1. Chocolate War by Robert Cormier for March 7th.
   2. After the Dancing Days by Margret Rostkowski for March 14th.

   Be prepared these evenings for discussion and active response to the books.

6. All students will take a final test on 4/18 during the regular scheduled class session.

7. Students will choose two activities from the following assignments. These may be done individually, in diads, triads, or small groups. When you have made your choices, please write out for me: Name, choices of assignment, format for assignment, name(s) of the other student(s) participating and due dates.

   Assignment Choices: (choose 2)

   a. Write a children’s story to be shared with class members. Share as well the writing process you used to create the story.

   b. Attend and report on the February 2-4, 1989, Ohio State University Children’s Literature Conference in Columbus. (Details will be available for all students.)

   c. Attend and report on the Montgomery County Library’s “Pizazz” program, held Saturday morning (2/25/89), at Sinclair Community College. (Details will be available for all students)

   d. Debate:
      1. Choose a current issue in children’s literature.
      2. Research the issue.
      3. Format the discussion.
      4. Allow for the whole class participation after the debate.

         Some choices of issues
         a. Censorship vs. freedom to read.
         b. The value of multi-ethnic literature.
         c. Use of trade books vs. textbooks in a classroom.
         d. Evaluation of reading.
         e. Whole language vs. traditional teaching.
f. Television's impact on reading.
g. Award winners - Children's or Adult choices?
h. Traditional tales and current concerns with sexism, classism.
i. Children's choices vs. quality of literature.
j. Content bias in informational books.
k. Should historical fiction reflect the attitudes of the period or a contemporary sensitivity towards racial perspectives?
l. Analyzing poetry - help or hindrance?
m. Values of international literature.

e. Author Paper - Choose an author or interest to you. Read 8 selections (different from you file books) of this author's works. Type a 2-3 page paper reporting on the books. Compare, contrast, critique the authors' development. Please note the author's appeal for you, and your student. Bring books by the author to share in a class presentation. Include a handout for other class members of a bibliography that lists the author's name, the book titles, the copyright dates, the publisher and the illustrator.

f. Research paper - Research a particular aspect of children's literature that is of particular interest to you. This paper should be about 5-6 pages long including a bibliography.

g. Book display focused on authors, themes, grade levels. Incorporate "webbing" into this presentation. Create a handout to share with all students.

h. Prepare a unit incorporating children's literature across the curriculum. A web could be included with this project as well.

i. A creative presentation - art, music, drama, cooking, puppetry, audio-visual techniques, sewing, making games, or story telling - in response to a particular book, type of literature or topic - such as the history of the children's literature.

j. Your own choice of assignment, discuss with me.
Assignments - Comparison Group

Read

1. Picture books - 8.
2. Traditional literature - 4.
8. Author study (8-10) by the same author.
11. Attendance and participation in class.
12. Research paper (graduate students only).

Assignments - Treatment Group

Read

1. Picture books - 8.
2. Traditional literature - 4.
8. Journal

   Reflect on:
   a. books
   b. textbooks
   c. field trips
   d. writing
   e. other experiences with children's literature
   f. class sessions

9. Post-test
10. Menu (choose 2 activities) (Graduate students-3)
    a. Write a children's story
    b. O.S. U. Conference
    c. Pizazz
d. Debate-current issues in children's literature
   e. Author paper
   f. Research paper
   g. Creative presentation in response to literature
   h. Book display focused on author, themes, grade levels with webbing included
   i. Unit using children's literature in classroom, across the curriculum areas
   j. Own choice-discuss with the instructor in advance
Daily Log of Class Content and Activities

Control Group

Objectives for each class session:

1) To develop awareness of the various genres of literature.

2) To develop awareness of various books from that genre of literature.

3) To develop awareness of ideas for using the literature in the classroom.

Control section's schedule was the same each session.

1st Day

1) Lecture on type of literature.

2) Instructor shared the books for the type of literature.

2nd Day

3) Group presentation with ideas for uses of type of literature in the classroom.

4) Small group sharing of books from the genre of literature. (Groups always remained the same people.)

January 5, 1989

Course Information

January 10, 1989

MER
January 12, 1989  
Pre-test, Introductions

January 17, 1989  
Demographic Data, Introductions (continued)

January 19, 1989  
Valuing literature, Chapter 1

January 24, 1989  
Children's Response, Chapter 2

January 26, 1989  
CMC visit

January 31, 1989  
Public library visit

February 2, 1989  
Beginning Books, Chapter 4

February 7, 1989  
Picture Books, Chapter 5

February 9, 1989  
Traditional Literature, Chapter 6
February 14, 1989
Myers-Briggs and Traditional Literature, Chapter 6

February 16, 1989
Modern Fantasy, Chapter 7

February 21, 1989
Holiday, Midterm

February 23, 1989
Modern Fantasy, Chapter 7

February 28, 1989
Poetry, Chapter 8

March 3, 1989
Poetry, Chapter 8

March 7, 1989
Contemporary Realistic Fiction, Chapter 9

March 9, 1989
Contemporary Realistic Fiction, Chapter 9
March 14, 1989
Historical Fiction and Biography, Chapter 10

March 16, 1989
Historical Fiction and Biography, Chapter 10

March 21, 1989
International Books, Chapter 11

March 23, 1989
Easter Holiday

March 28, 1989
Public library time

March 30, 1989
Visit to Townview

April 4, 1989
Developing a Literature Program, Chapter 12

April 6, 1989
Developing a Literature Program, Chapter 12
April 11, 1989
MER

April 13, 1989
Informational Books, Chapter 11 (contd.)

April 18, 1989
Post-test

April 20, 1989
Evaluations

April 25, 1989
Exam Week  8:00 - 9:50 a.m.
Daily Log of Class Content and Activities

Treatment Group

January 10, 1989

Objective: To establish relationships and to gain information.

Introduction to the class and self-introductions were given by the instructor. Discussion followed on the course syllabus and course requirements.

The Pre-test for content knowledge was taken by the students. The MER was filled out by the students.

January 17, 1989

Objective: To establish relationships and to gain information.

Demographic data was gathered on the students and completion of questions regarding course information.

The "Jeopardy" acquaintanceship exercise consisted of small groups of students working together to interview other students to discover the names of all the class members on the "Student Hunt" list, observing the two rules of the game. Then each member of the class introduced herself to everyone expanding on the one line introduction.

January 24, 1989

Objectives: 1) To become familiar with the services of the Curriculum Materials Center.

2) To reflect on this experience in the journals.

3) To become more familiar with fellow students and instructor.

The class: Curriculum Materials Center Visit

Reflection questions for journals

1. What value can the CMC play in your life as students?
2. What value are resource materials for teachers? How can they be an asset to your teaching?

Group activity

1. What is your favorite childhood (B-12th grade) book?
2. Describe as much information on the book.
3. Describe the memory associated with the book.
4. Was the experience at home or at school.
5. What influence did this book have on you? Explain.
6. What is our role and responsibility in the classroom to encourage/expose children to quality literature?

January 31, 1989

Objectives: 1) To become familiar with the services of the Dayton-Montgomery County Library.

2) To reflect on this experience in the journal for discussion next week.

The class: Public Library Visit

February 7, 1989

Objectives: 1) To develop awareness of various picture books.

2) To become aware of how picture books can be used to support thematic teaching, identified for this session. To discuss this use of picture books.

3) To reflect on various field experiences - library, CMC and Children's Literature conference in Columbus.

4) To discuss these reflections.

5) To become aware of portfolios and how they will be used in the course.
The class:

**Introduced Portfolios — Sections**

1. Book reports
2. Reflections on class experiences
3. Other assignments
4. Class notes, thoughts on after class experiences. Spontaneous thoughts on children’s literature.

**Reflections**

a. Library
b. CMC
c. Children’s Literature Conference in Columbus

1. What experiences were beneficial for you?
2. What value did you gain from the experience?
3. Did you learn anything that you did not know before?
4. How/Did these in anyway increase your interest in/ exposure to children’s literature.
5. What value can conferences play in the life of a teacher?

**Picture Books**

a. Share my books in a large group
b. Identity and picture books

1. Did they speak to the children/audience about the characters as individuals separate from Mom and Dad - a rite of passage?

Was there an emphasis placed on:

2. The importance of the family unit?
3. Friendships (peers in children’s lives?)
4. Trust
5. Vocation/career choices
6. Values
7. Fears
c. Share with small group your picture books.

d. Break into diads

1. Share the impact identity books had on you.
2. Would there be a similar affect on a child?
3. How would using these books benefit your students?
4. Why?
5. Did any particular one have a greater impact on you than the others?

   a. Which one?
   b. Why?
   c. Did it touch on issues in your life?
   d. Can you see the possibility that this same experience could happen for children?
**Picture Books Used In Class**


Carle, E. (1968). *1, 2, 3 To The Zoo*, Collins World.


February 14, 1989

Objective:  
1) To become aware of alternative presentations of the same book.  
2) To discuss national medal winners and their possible attraction for children.  
3) To become aware of traditional literature.  
4) To become aware of various examples of traditional literature.  
5) To discuss two views on the use of traditional literature in the classroom:  
   a) historical value  
   b) contemporary concerns  

   Encouraged journal reflections on these thoughts  

6) To present information on the Myers Briggs personality inventory and to gather their responses.  

The class:  

Student shared Peter and the Wolf with the  
   a. Book  
   b. Music  
   c. and Prompt  

A student raised concerns about the Caldecott award winner, Hey All  

   a. What value was this book for children?  
   b. Was it really geared toward adults in its appeal?  
   c. Did it portray a pessimistic attitude toward life?  

A student shared a picture book in alternative forms  

   a. flannel boards  
   b. poster boards  
   c. puppets
Instructor shared various books of traditional literature. Students shared their titles. The groups were mixed heterogeneously according to the MER score.

**Discussion of Traditional Literature**

1. What was your experience with traditional literature? As a young child? As an adult? As a member of this class?
2. What are some benefits of this type of literature?
3. Do you foresee any problems using traditional literature in the classroom?
4. What can be done to counter some of these problems?

**Myers Briggs**

The Myers Briggs is a personality inventory based on Jung's work on personality types.

Jung distinguishes two major attitudes or orientations of an individual's personality:

1. Extroversion - oriented toward the external, objective world.
2. Introversion - oriented toward the inner, subjective world.

Usually both are present, but one is dominant.

There are four fundamental psychological functions:

1. Thinking - people try to understand the nature of the world and themselves.
2. Feeling - people look at the value of things as far as its positive or negative reaction with reference to the subject. (pain, anger, fear, sorrow, joy and love.)
3. Sensing - perceptual or reality function looks at concrete facts.
4. Intuition - perception by way of unconscious processes goes beyond facts, feelings and ideas in search for reality.

Again, in each of the pairs, one is usually dominant over the other.

Differences in the following two result in differences in behavior:

1. Perceiving - processes becoming aware of things, people,
occurrences and ideas—What people see in a situation.

2. Judging—coming to conclusions about what has been perceived—What they decide to do about it.

Isabel Briggs Myer's intention is for people to understand each other and avoid destructive conflicts. Her focus is for each person to see their strengths and the infinite possibilities of the human personality.

As teachers we can give students encouragement to develop to their full potential. Each student's unique personality would make a difference in their learning styles and their student response to the teaching methods. In teaching, we can use personality type as another tool to help us understand the child.

I will score these and share the results with you so you can see your dominant attributes along the four continuums:

<table>
<thead>
<tr>
<th>Extroversion</th>
<th>Introversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensing</td>
<td>Intuition</td>
</tr>
<tr>
<td>Thinking</td>
<td>Feeling</td>
</tr>
<tr>
<td>Judging</td>
<td>Perceptive</td>
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Traditional Literature Shared in Class


February 21, 1989

Objectives: 1) To discuss, evaluate and reflect on using media with literature.

2 views:
   a) Use as much as possible, children enjoy.
   b) Use only literature, children watch enough media outside of school.

2) To become aware of books available for the very young child.
   a) When to use, how much and evaluating for quality.

3) To become aware of books of Modern Fantasy.

4) To discuss the value of books of Modern Fantasy.

5) To reflect on this evening’s class session.

The class: 1. A student presentation on the use of media with children’s literature in a classroom. He had a slide presentation to accompany the book, Miss Nelson Is Missing.

2. A student shared information on using books with the young child with the class. She included a Handout with titles and criteria used to evaluate books for young children and shared many books for the birth to five year old age group.

3. Instructor shared books of Modern Fantasy with particular topics covered in Modern Fantasy:
   a. Animals
   b. Toys and dolls
   c. Small worlds
   d. Strange characters and events
   e. Universal worlds
   f. Magical powers
   g. Supernatural
   h. Time Shifts
   i. Science Fiction
4. The students broke up into groups of three members based upon the topic in their favorite book of Modern Fantasy. Think about Modern Fantasy with these questions in mind:

**Group Discussion Questions**

1. Did any of the books impact you in any particular way?
2. Do you have any thoughts on how Modern Fantasy may impact children in regards to their development:
   a. vocationally
   b. morally
   c. sexually
   d. politically
   e. socially
3. Do these books raise questions about the struggle of good vs. evil? The meaning of life?

5. The students ended the session with a “Minute Paper”.

**Minute Papers***

1. What’s the most significant thing you learned this evening?
2. What question is uppermost in your mind at the end of this class session?

* Idea borrowed from the material for the Workshop at O.S.U., 1987
Modern Fantasy Shared in Class


February 28, 1989

Objectives: 1) To become aware of using literature with the issue of death.

2) To discuss and reflect on the two sides of the issue concerning using picture books in grade four through twelve.
   a) Time
   b) Value

3) To discuss and reflect on various approaches to teaching poetry in the classroom.
   a) follow curriculum guides
   b) integrated throughout the curriculum, allowing for personal responses and personal choice.

4) To become aware of various books of poetry.

5) To practice reading aloud a poem of their choice.

6) To reflect on this evening's class.

The class: 1. A presentation on the value of using books around the theme of death, for children, teachers and families. This student had lost a 10 year old child to death and had a wealth of book titles and personal experiences to share. Question and answer period followed.

2. Two students teamed up to present a debate on the pros and cons of using picture books in the upper grades (4th-12th). Discussion followed.

3. The instructor teamed with an undergraduate student on appropriate techniques to share poetry in the classroom. She pulled her presentation from the text's chapter and her personal love and interest in poetry. The instructor used curriculum guides from different grade school text books that dictated which poems to read and which activities should follow poetry readings with very clear and specific expectations.

4. After the presentation, instructor shares books of poetry and then large group discussion followed:
1. **The Debate**
   Poetry should be aesthetic experience used on sensations, images and feelings, a “live through” experience, that should be enjoyed.
   vs.
   Poetry’s purpose is to understand “the” meaning of the poem, analyze meter and rhyme, identify figurative language and identify and define types of poetry.

2. Had student’s past experiences with poetry been positive or negative?

3. How can we make that different for children?

5. **Activity**
   Read their favorite poem aloud to one other person with whom they choose to share their books of poetry. Use the “Checklist for Reading Poetry Aloud” (White, 1987) and reflect on experience with the checklist.

6. Minute Paper tonight
CHECKLIST FOR READING POETRY ALOUD*

Interpretation

1. Do I have a clear meaning of the poem? ______

2. Do I understand the nuisances brought about by figures of speech? ______

3. Do I sense the intent given by the punctuation? ______

Vocal Practice

1. Am I using volume appropriate for the size of the group? ______

2. Am I reading at a tempo so that I can interpret appropriately but still be understood by listeners? ______

3. Am I using tone and pitch appropriate for the mood of the poem? ______

4. Am I speaking with cadence that interprets meaning? ______

5. Am I allowing the rhyme to be heard without having a sing-song quality? ______

6. Am I stressing words and syllables appropriately in order to add to the meaning? ______

7. Am I clustering phrases so that the meaning is clear? ______

8. Am I able to give eye contact? ______

9. Is my enjoyment of the poem obvious? ______

*From White 1987
Poetry Shared in Class


March 7, 1989

Objectives: 1. To become aware of books of Contemporary Realistic Fiction.

2. To discuss and reflect on some of the controversial issues around this genre of literature.
   a. Censorship
      1. Public library vs. School Use.

3. To discuss and reflect on issues raised in The Chocolate War.
   a. Peer pressure
   b. Authority
   c. Parental support
   d. School pressures

4. To help support some students with a contract for their completion of their course assignments. (See Appendix)

Class Time: 1. The Dayton area Young Adult Specialist shared current titles and thoughts on literature for teens. Discussion followed on problems of censorship with some of these titles and how teachers can defend their uses in the classroom. Concerns were raised concerning parent pressure, controversial topics such as sexuality, violence, homosexuality, lesbianism, AIDS etc. Should school/public libraries carry these books?

2. An undergraduate group did 2 role plays with the theme of peer pressure after the whole class read The Chocolate War by Robert Cormier. The 2 role plays involved peer pressure around alcohol and driving and sexual involvement at an early age. The hope was to make the book more relevant to students today.

3. Discussion followed around students' experiences with:
   1. peer pressure
   2. authority figures
   3. parental support/involvement
   4. school pressure for fundraisers and other activities

4. Instructor shared other books of Contemporary Realistic Fiction.
5. Graduate students left to discuss The Choclate War, undergraduate students stayed to answer questions on course expectations and assignments. Contracts were offered to:

5 members of the sample to add more structure to the class experience.
Contemporary Realistic Fiction Shared in Class


March 14, 1989

Objectives: 1. To become aware of books of Historical Fiction.

2. To discuss and reflect on issues raised (via role play) with After the Dancing Days.
   a. Parental authority
   b. Handicappism
   c. Family relationships

3. To observe, discuss and reflect on the Whole Language/Literature based philosophy in the classrooms.
   a. What about skills?
   b. Where does evaluation fit in?
   c. Preparation seems overwhelming
   d. Children’s responses in a Whole Language classroom
   e. Teacher’s responses in a Whole Language classroom

Class Time: 1. Visit to Whole Language classroom with question and answer session after returning to U.D.

2. A role play by an undergraduate group based upon the book After The Dancing Days by M. Rostkowski. The students chose the theme of questioning parental authority when it appeared to be morally questionable. They likened the experience of the main character interacting with a World War I handicapped veteran to a young person with an AIDS victim today.

Discussion focused on these themes from the book:
   1. Parental authority
   2. Handicappism
   3. Family dynamics

3. Instructor shared the titles of Historical Fiction and the class broke into small groups sharing their historical fiction books.

4. Instructor put the students in small groups homogeneously according to the MER.
Historical Fiction Shared in Class


March 21, 1989

Objective: 1. To become aware of various International books.

2. To become aware of the reality of racism within schools.
   a. Can literature contribute to the lessening of prejudice/stereotypes in our society?

3. To become aware of the value of multi-ethnic literature in a classroom.

4. To discuss and reflect of a role play from Jean Frity's Homesick.

5. To reflect on this evening's class session.

Class Time: 1. One of the graduate students is teaching in a school district where a racist situation had escalated to the point of several violent and vicious physical attacks on the two black basketball players and their friends and families. The incidents had received a great deal of newspaper coverage and the situation had been raised as an example of how The Chocolate War is real for students today.

Two students presented information and various books on the value of ethnic literature in classrooms where there were minority and non-minority children.

2. The discussion that follows the presentation included the value of using multi-ethnic literature to counter stereotypes and the local situation.

   a) Could literature have helped students resolve some of their racist feelings?

3. Another undergraduate group role played different scenes for Jean Fritz's autobiographies and books of Historical Fiction. They discussed their roles and their characters' affect on other friends, peers, and family members.

   The discussion followed on Jean Fritz and the value of Historical Fiction/Informational books in the classroom.

4. Instructor shared various titles of informational books and asked
the students to reflect on:

1. How these books might integrate across the curriculum area?
2. To think of books of fiction they might use in combination with the nonfiction.
3. Is the author a teacher and artist? Does he/she encourage children's passion and wonder?

5. Choose a person you have not had in a small group to date. Share your books looking at the text's "Guides for Evaluating Informational Books."

   a. How well do your books meet these evaluative criteria?
   b. Support the evidence to justify your judgements.

6. Minute papers
Informational Books Shared in Class


April 4, 1989

Objectives: 1. To become aware of the value of multiethnic literature particularly African American literature.

   a) Students raised the question of integrating multiethnic literature in Children’s Literature or treating it separately.
   b) Discussion, reflection, and sharing on this question and other issues continued as the presentation developed.

2. To become aware of some of the theory, research and practice of Whole Language. Discussion and reflection on this philosophy of teaching.

3. To become aware of process writing within a classroom. Discussion generated topic of time versus children’s needs for meaningful experiences.

4. To experience selecting a book of choice to read and to write a response of personal choice to the book.

5. To reflect on this evening’s class session.

   1. A minority student shared multiple examples of quality African American literature and the values of this literature in the classroom. Question and answer period followed.

   2. The instructor lectured and shared the theory, research and practice of the Whole Language Literature based approach to teaching.

   3. One student shared from Nancy Atwell’s presentation on “process writing” with children. She fielded questions from that approach.

   4. Students chose a book of interest to them from a selection of books of Contemporary Realistic Fiction, Historical Fiction and Biographies, Informational books and Multi-ethnic literature. They “read” the book and “responded” to the selection based on their own response.
5. Students wrote a Minute Paper. The students then shared with the instructor their chosen book, why it was chosen and their individual response to the book.
Multiethnic Literature Shared in Class


Hamilton, V. (1967). Zeely, Macmillian

Mathis, S. (1974). Listen for the Fig Tree, Viking


April 11, 1989

**Group Activity**

1. The Post MER was administered.
2. Review for Post test.
3. A presentation by a student not in the sample.

April 18, 1989

**Group Activity**

1. The Post Test was administered.
2. Evaluations were written.

April 25, 1989

**Group Activity**

1. The remaining presentations from class members not in sample were done.
A contract for student assignments to be completed on stated dates.

<table>
<thead>
<tr>
<th>Name</th>
<th>Assignments</th>
<th>Due Dates</th>
</tr>
</thead>
</table>

Student Signature

Instructor Signature

Date