Development of the Early Childhood Curricular Beliefs Inventory: An Instrument to Identify Preservice Teachers' Early Childhood Curricular Orientation

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DEVELOPMENT OF THE EARLY CHILDHOOD CURRICULAR BELIEFS
INVENTORY: AN INSTRUMENT TO IDENTIFY PRESERVICE
TEACHERS’ EARLY CHILDHOOD CURRICULAR ORIENTATION

By

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A Dissertation submitted to the
Department of Elementary and Early Childhood Education
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

Degree Awarded:
Summer Semester, 2004

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To Chris, Mariah and Chris
…you never doubted me
ACKNOWLEDGEMENTS

While this journey has been long, it has been replete with support from so many. First and foremost, I must thank my parents: Gus, Nell, Chris, and Audrey, I promised I would finish and I did. This dissertation has been greatly enhanced by the members of my supervisory committee who have provided critical and constructive feedback: Dr. Elizabeth Jakubowski, Dr. Ithel Jones, and Dr. Vickie Lake. Your comments were always on target and invoked a great deal of thought and reflection. I owe so much to Dr. Charles Wolfgang, my major professor. His patience, guidance and encouragement were just what I needed in order to complete this endeavor. Throughout this undertaking I have had several mentors who have shown me what to strive for: Dr. Virginia Green, April Penton, and my mother Dr. Nell Kannwischer – you reminded me of what is truly important.

The completion of this dissertation would not have been possible without the support and encouragement of my colleagues at Flagler College: Dr. Susan Strauss, Dr. Murilla Morris, Peggy Durham, Michael Pierce, Jennifer Doster, Heather Deyo, Tiffany Williams, Mary Pat Zacker, and Maura Freeburg to name just a few – thank you for listening and advising. I am also indebted to Dr. John Meis and Dr. Davis Sacks for their expert advisement regarding statistics and methodology. To the staff at Florida State University, Timolin Bodison-Baker and Gwen Johnson – you have answered my many questions and provided me with kindness and support when needed most.

My family has been my strength, together we endured much, but they always encouraged me to finish: Chris, who never doubted that this day would come; and Chris and Mariah, who see that regardless of what life throws you, with perseverance you can, and will, prevail – I love you all.
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ABSTRACT

The aim of this study was to develop and field test an instrument that provides an efficient and scholarly tool for exploring curricular beliefs of preservice teachers in the area of early childhood education. The Early Childhood Curricular Beliefs Inventory (ECCBI) was developed through procedures that evaluated the content validity of identified statements, explored the criterion and construct validity, and assessed the internal reliability of the instrument.

Through a literature review, four predominant approaches to early childhood education (Developmental Interaction, Cognitive Developmental, Behavioral, and Sensory Cognitive) and four associated models of implementation were identified (Developmental Interaction, HighScope, Direct Instruction, and Montessori). Six areas, in which each of the above differed, were identified: the view of the child, role of the teacher, resources utilized, curricular emphasis, assessment methodology, and characteristics of the learning environment.

A panel of experts classified and sorted a total of 182 statements, and 72 items were subsequently organized into an instrument consisting of four subtests corresponding to the identified curricular models. Scoring of the instrument included recording Likert-scale responses for each statement to a score key divided into four sections, or subtests, representing each curricular model. Scores for each section were added and compared. The subtest with the lowest score was deemed most representative of a respondent’s curricular beliefs.

Data gathered through field testing of the instrument with practitioners were used to explore further content validity through a factor analysis, criterion validity, and construct validity. Results of a second field test of preservice teachers and the results of the first field test (practitioners) were used to assess internal consistency reliability. Analyses appeared to support content, criterion, and construct validity as well as reliability of the 72-item ECCBI.
In an effort to reduce the length of the instrument and to make it less cumbersome, results of the factor analysis were used to create a 24-item shortened version of the ECCBI. Six items representing each of the four subtests having the strongest factor loadings were identified as appropriate statements and were then organized into an alternative instrument.
Ongoing calls for educational reform focus on the premise that schools are not satisfactorily educating all children, and teacher preparation programs have received criticism for inadequately preparing teachers to help all children achieve. The problem is further compounded in the area of early childhood education where preservice teachers must be trained to teach in a variety of settings and assume multiple roles in a field that includes the expansive developmental range of birth through age eight (Isenberg, 2001). In response, teacher educators are examining their own practices and exploring ways in which to better prepare prospective teachers.

Orientation

Yarger and Smith (1990) proposed that the focus of teacher education is to educate individuals to be highly effective teachers, and that effectiveness appears to be related, in part, to the attitudes and beliefs held by the educator (Feeney & Chun, 1985; Spodek, 1988). Beliefs unify and ultimately guide a teacher’s practices and are a basis for curricular decisions (DeVries & Kohlberg, 1987; Kohlberg & Mayer, 1972; Mayer, 1971; Spodek, 1988). These beliefs are based on memories of previous teachers, former teaching experiences, childhood events, philosophical views, and familiarity with educational programs (Feiman-Nemser & Floden, 1986; Lortie, 1975; Kennedy, 1997; Kohlberg, 1968; Spodek, 1988; Weinstein, 1989; Wright & Tuska, 1967; Zeichner, 1986).

In early childhood education, beliefs and practices of individual teachers have been found to be closely aligned to a preferred philosophy, orientation of child development, and an associated curricular approach or model (Charlesworth, Hart, Burts, & Hernandez, 1991; Kohlberg, 1968; Mayer, 1971; Smith, 1992; Spodek, 1988). The beliefs an individual has regarding the many aspects of the curriculum differ with
varying approaches to early childhood education (Kohlberg & Mayer, 1972; Mayer, 1971). Teachers construct their own conception of child development, curriculum, and instruction as they interpret their beliefs thereby defining aspects such as the role of the teacher, the view of the child, resources to be used, curricular content, methods of assessment, and the learning environment (Becker, Engelmann, Carnine, & Rhine, 1981; Bereiter & Engelmann, 1966; Hohmann & Weikart, 1995; Kohlberg & Mayer, 1972; Mayer, 1971; Smith, 1992).

A review of the literature pointed to the need to understand teachers’ beliefs (Clark & Peterson, 1986; Pajares, 1992), and more importantly to this study, preservice teachers’ beliefs (Anderson & Bird, 1994; Clark, 1988; Feiman-Nemser & Floden, 1986; Feiman-Nemser & Remillard, 1996; Kennedy, 1997; Pajares, 1993). Research indicated that the more clearly that preservice teachers understand their own beliefs and understand the theoretical and philosophical bases for their teaching the greater will be their success in the classroom (Anderson & Holt-Reynolds, 1995; Bennett, 1994; Charlesworth et al., 1991; Clark & Peterson, 1986; Feiman-Nemser & Remillard, 1996; Kennedy, 1997; Nespor, 1987; Pajares, 1993; Weber, 1984; Woolfok Hoy & Murphy, 2001).

Early socialization into the field of teaching serves to shape and define a preservice teacher’s beliefs concerning educational practices (Clark, 1988; Feiman-Nemser & Floden, 1986; Lortie, 1975; Pajares, 1992, 1993; Wright & Tuska, 1967; Zeichner, 1986), and provides the context through which all new and existing information is filtered (Goodman, 1988; Pajares, 1993; Rokeach, 1968). These beliefs are the assumptions, attitudes, and values that an individual has regarding areas such as teaching and learning, subject matter, and students (Clark & Peterson, 1986; Feiman-Nemser & Remillard, 1996; Pajares, 1993). It is these beliefs that construct the preservice teacher’s reality (Kennedy, 1997; Pajares, 1993; Sigel, 1985).

The unique nature of early childhood education is such that teachers often teach in programs that have adopted curricular approaches and utilize curricular models with specified frameworks. These frameworks guide practices and are the result of definite beliefs concerning children and their education. A review of the evolution of the field of early childhood education provides an understanding of the theories and beliefs that are
at the core of practices used--past and present. This history reflects social change and the prevailing views and beliefs regarding children over time.

**Historical Overview**

In the mid-seventeenth century, Comenius and Locke both wrote of educating young children. In *The School of Infancy*, Comenius emphasized the important role of the mother in the young child’s life and how to enhance that relationship; however, his ideas found little acceptance at the time (Lascarides & Hinitz, 2000). Comenius promoted sensory education and outlined educational content for young children -- knowledge of natural world, optics, astronomy, geography, chronology, history, household affairs, and politics. These areas are evident in current models of early childhood curriculum (Lascarides & Hinitz, 2000; Weber, 1984). John Locke’s works were influenced by his belief that children were products of their environment. He contended that play and discovery were assets to early learning (Weber, 1984). Locke advocated instruction that included the use of examples and opportunities for practice as opposed to lecture and rote memorization. Curiosity in children was viewed as a sign of a child’s quest for knowledge and was to be encouraged (Lascarides & Hinitz, 2000).

In the eighteenth century, two vastly differing views of childhood education were evident. The model of education in colonial America was based on discipline and moral education. With the Church was the dominant force, children were viewed as inherently evil and in need of salvation. The teacher’s role was to provide strict discipline through corporal punishment and ridicule. Conversely, in Europe, Jean Jacques Rousseau countered this model of education in his writings. He sought to bring a new dignity to children and new respect for childhood (Nourot, 2000). Rousseau advocated that education should be conducted via experiences with the environment (Lascarides & Hinitz, 2000). His beliefs concerning developmental stages, stage-related learning and the importance of play in children’s growth would influence early childhood curriculum to come (Williams, 1992).

Early in the nineteenth century, the Swiss educator John Pestalozzi built on the ideas of Comenius, Locke, and Rousseau and established a school for children of impoverished peasants. Evident in Pestalozzi’s work are the beginning of beliefs
regarding developmentally appropriate practices—the universal nature of human
development and individual needs and variances in development (Nourot, 2000). The
design of his school included a home-like environment, a carefully sequenced
curriculum with carefully chosen learning materials and instruction matched to the
child’s needs (Cleverly & Phillips, 1986; Lascarides & Hinitz, 2000; Williams, 1992).
Pestalozzi’s model of educating young children provided a glimpse of future approaches
to early childhood education—Montessori’s sensory education and Piaget’s construction
of knowledge through experience with the environment and materials (Nourot, 2000).

The ideas of Pestalozzi found their way to America and resulted in the
development of infant schools for children aged 3-5 years. In response to poverty and
crime brought on by immigration and industrialization, these schools were seen as
remedies for social ills. Curriculum was built on conversation, singing, drawing, and
storytelling (Nourot, 2000). In addition to the educationally based infant schools, day
nurseries were expanding to provide routine care for young children of the working poor.

In nineteenth century Germany, Frederick Froebel’s work reflected that of his
predecessor Pestalozzi. Froebel advocated development of the individual and his
system of education, termed kindergarten, gave children freedom to explore the world
as well as a sense of spiritual well being; thereby intensifying the child’s consciousness
of the environment (Lascarides & Hinitz, 2000). Froebel’s program descriptions defined
precise procedures with specifically developed materials to be used in the kindergartens
of that time (Goffin, 1994). The Kindergarten movement found its way to America in
the later part of the century where it was seen as a tool for social reform. Eventually,
however, Froebels’s beliefs regarding play-based learning were lost as the American
Kindergarten was influenced by the rote learning of the elementary school (Nourot,
2000).

In the early 1900s, Montessori created a method for working with children living
in the slums of Rome who had suffered sensory as well as physical, social and cognitive
deprivation. Her work at the Casa dei Bambini (Children’s House) reflected the work of
her predecessors, Pestalozzi and Froebel (Weber, 1969), and demonstrated her belief
of allowing children freedom to explore and guide their own learning (Montessori, 1967).
Montessori refined her sensory-cognitive training to include a prepared environment,

The beginning of the twentieth-century saw the influence of innovations in science that gave rise to the Child-Study and Progressive education movements. New avenues of investigative methodology had been explored with the publication of Charles Darwin’s *The Origin of Species* in 1859, and a movement based on this type of study was being established under the direction of G. Stanley Hall in an effort to make education more scientific. *The Content of Children’s Minds*, published by Hall in 1883, was a result of his direct observation of young children. He believed that through child study one could identify the needs and interests of children and as a result could plan appropriate curriculum (Nourot, 2000). Numerous educational implications resulted from this work that included object teaching, the need to relate new knowledge to that which exists, and conceptual learning tied to the child’s immediate environment (Lascarides & Hinitz, 2000; Spodek & Brown, 1993).

Emphasizing the social aspect of education, John Dewey initiated the Progressive movement. This movement had a great deal of influence on emerging curriculum and teaching methodology and specifically addressed the period of early childhood (Dewey, 1902; Moore, 1930; Spodek & Brown, 1993). In implementing the progressive approach in his Laboratory School, Dewey (1900) viewed children as social beings. Learning activities were developed to aid the child in his or her development of a sense of responsibility to, and for, oneself as well as for the collective group. In addition, activities helped to create an initial understanding of the workings of society. Development of problem-solving strategies, language, and social skills were key goals of the progressive approach. Dewey believed that opportunities for play (constructive and imaginative) and productive experiences using materials from the real world were essential components in the curriculum (Nourot, 2000).

Drawing on the work of the Progressive and the Child Study movements, Lucy Sprague Mitchell and Caroline Pratt opened the Play School in New York in 1916. Strongly influenced by John Dewey, Mitchell and Pratt created a social studies-based curriculum with an emphasis on play. Teachers acted as careful observers and
purposely arranged the school environment to meet the needs of the children. This curriculum and methodology would eventually be viewed as a traditional model of nursery education. The Play School would later adopt additional theoretical perspectives and become the Bank Street School and initial bases for the Developmental Interaction approach implemented as the Developmental Interaction model (Cuffaro, Nager, and Shapiro, 2000).

From the end of the nineteenth century to the early 1960s, a broadening base of information and changing perspectives were evident in the evolution of vastly differing philosophies regarding early childhood education. Three main schools of thought based on psychological theories of development emerged which resulted in new views regarding the education of the young child: Developmental Interaction, Behavioral, and maturationist (Nourot, 2000; Spodek & Brown, 1993). For the most part these three views guided developing approaches to early childhood education during this time.

Whereas the Child-Study and Progressive movements focused on physical and social growth, the Developmental Interaction theories of Freud stressed the importance of emotional development of the young child. Emphasis on personality development and the exploration of children’s fears and behaviors translated into an early childhood curriculum that underscored play as a cathartic experience for bringing emotional issues to the forefront. The child-centered classroom environment provided children a great deal of freedom with opportunities to express themselves in open-ended activities (Freud, 1961). Teachers took on a somewhat passive role, one of an observer of children’s behaviors, providing reassurance and assistance as needed such as talking or playing out conflicts or anxieties (Frost, Wortham, & Reifel, 2001; Nourot, 2000; Spodek & Brown, 1993). In combination with the child study movement and progressive education, the Developmental Interaction theory would become the basis for the Developmental Interaction approach and model for early childhood education.

The works of B.F. Skinner and John B. Watson, which emphasized principles of learning that drew upon conditioning, reinforcement, and behavior shaping, were the bases for the Behavioral approach and the underpinnings of the direct instruction model of early education. The child was viewed as a blank slate, or “tabula rasa”, who required a carefully controlled learning environment and teacher directed learning (Miller
Marsh, 2003). Practices that employed habit training and the absence of affect widely influenced child rearing techniques and teaching methodology (Cleverly & Phillips, 1986). The main concern of the Behaviorists was employing methods that would encourage desirable behaviors and discourage those that were undesirable. Strict adherence to routines and consistency in children’s lives was a classroom expectation (Nourot, 2000).

Arnold Gesell, a student of G. Stanley Hall, utilized strict and objective scientific procedures in his collection of data regarding children’s maturational growth. Observations lead to Gesell’s “ages and stages” approach to development in which he established growth norms that implied that maturation proceeded in an orderly fashion and at a fixed rate as long as the needs of the child were met (Cleverly & Phillips, 1986; Lascarides & Hinitz, 2000). Gesell’s ideas were met with great acceptance by parents and educators at the time, and when incorporated into the nursery schools, provided children freedom to explore and grow according to their natural timeline and served as guidelines for age-appropriate behaviors and development (Gesell & Ilg, 1945).

Through the 1950s, theories of child development provided the framework for most early childhood education programs. Developments in the area of early childhood education were few and a “traditional” view of nursery education dominated early childhood education. Intense interest in the field was renewed during the 1960s. J. McVicker Hunt’s book, Intelligence and Experience (1961), presented the argument that intelligence was a product of environmental factors and stressed the importance of early experiences. Benjamin Bloom’s Stability and Change in Human Characteristics (1964) also emphasized the importance of experience and underscored the developmental role of the early years. With these new ideas and the rising tide of the Civil Rights movement and the War on Poverty, early childhood education became an arena for social reform and an impetus for educational change. Programs aimed at young children were seen as a means of providing needed skills that would prepare them for school and would allow them to ultimately escape poverty (Goffin, 1994). Social reform coupled with a focus on school readiness lead to the development of the intervention movement known as Project Head Start (Nourot, 2000; Spodek & Brown, 1993; Weber, 1984). In the early years of the project, a traditional nursery school curriculum was
implemented in Head Start programs. However, many viewed additional approaches such as the Behavioral theories of Skinner and Watson and the Cognitive Developmental theories of Jean Piaget as possible bases for early childhood curriculum.

Piaget’s early observations of children and exploration of intelligence in the labs of Alfred Binet were of intense interest to researchers and developers of programs aimed at disadvantaged children. Piaget’s basic law of development was a result of his study of the acquisition and development of knowledge. The law indicated that the child constructs his own intelligence and knowledge through play and interaction with the physical and social environment (Lascarides & Hinitz, 2000; Kohlberg & Mayer, 1972). Therefore, the teacher was to provide a learning environment that supported the child’s activity, stimulated interactions with peers combined with instructional strategies that provided opportunities for critical exploration and questioning to promote cognitive growth (Lascarides & Hinitz, 2000).

Using the emerging theories concerning cognitive development as fuel, debate over how to best meet the needs of the targeted population flourished and became a source of controversy in the field. Answers were sought as to the best and most appropriate means of educating young children. In response, a procedure for implementation and systematic evaluation of various models based on differing child development theories was established (Consortium for Longitudinal Studies, 1983; Goffin, 1994; Nourot, 2000; Rhine, 1981). Out of this process of planned variation in presentation grew the concept of curricular models.

Curricular model refers to a framework and organizational structure for education that is supported by a theory and knowledge base grounded in child development research. This theoretical basis is considered the approach for the specific model (e.g., Cognitive Developmental approach implemented as the HighScope model). The model design often includes guidelines or expectations for practical applications such as establishment of the learning environment, the structure of activities, child-adult interactions, materials, assessment, as well as program evaluation (Epstein, Schweinhart, & McAdoo, 1996; Goffin, 2000). While a number of approaches were deemed appropriate and associated curricular models were used in Head Start
programs, the majority could be classified in one of three theoretical categories: Behavioral, Cognitive Developmental, and Developmental Interaction (Goffin, 1994; Mayer, 1971; Rhine, 1981; Spodek & Brown, 1993). Researchers determined that models developed based on these three approaches all found a measure of success as Head Start curricula (Rhine, 1981; Spodek & Brown, 1993).

Currently, the interest in early childhood education has been renewed as solutions are sought for political, social, and economic problems. Early childhood education was, and continues to be, considered as a means of effecting change in terms of societal problems: child-care, future school success, identification of at-risk students, etc. As a result, dialogue regarding early childhood curriculum is again in the forefront in an effort to identify curricular approaches that are most appropriate and beneficial in meeting the needs of the targeted population (Goffin, 1994; Nourot, 2000). However, few new programs have developed that serve the needs of a widespread audience, and the three approaches and associated models: Behavioral, Cognitive Developmental, and Developmental Interaction as well as the Sensory Cognitive approach or Montessori Method, continue to influence curriculum in early childhood education. Thus the following are all considered viable bases for approaches to and models for, early childhood education and were considered in this study: (1) the Sensory Cognitive approach, or the Montessori Method; (2) the Behavioral approach implemented as Direct Instruction; (3) the Developmental Interaction approach implemented as Developmental Interaction (formerly known as Bank Street); and (4) the Cognitive Developmental approach implemented as HighScope.

**Importance of the Study**

In examining research paradigms in teacher education, Yarger and Smith (1990) proposed that a focus of investigation should include antecedent conditions, or the “conditions and variables that affect teacher education without being directly related to the process but, rather, influence or guide the process” (p.27). Increasingly, the antecedent condition -- preservice teacher beliefs -- has garnered attention, in that, research has indicated that a preservice teacher’s existing beliefs are seen to significantly influence what he or she gains from teacher education (Anderson & Bird,
Students of teacher education enter preparatory programs with years of experience in the classroom and hold beliefs regarding teaching that have been developed throughout those experiences (Feiman-Nemser & Floden, 1986; Lortie, 1975; Pajares, 1992, 1993; Wright & Tuska, 1967; Zeichner, 1986). These beliefs provide a lens through which preservice teachers view their preparation; often these beliefs remain unexplored and remain intact or as they were upon entrance in the program. Much of the literature, and many of the studies regarding preservice teachers, emphasized a need for change and focused on challenging and altering beliefs. However, literature also calls for reflection, and as Green (1971) explained, the need to make beliefs more evidential and defensible. In addressing the preparation of early childhood professionals, the Committee on Early Childhood Pedagogy (2001) stressed the need for preservice and inservice teachers to “develop the ability to reflect on their beliefs, and to cultivate the metacognitive capacities that will help them tailor teaching strategies and approaches to the needs of their students” (p.267). Miller Marsh (2003) concurred and emphasized that prospective teachers must develop an awareness of the beliefs through which they speak and act in order to make informed decisions regarding their teaching. Pajares (1993) wrote that the need to explore beliefs is not to gain unanimity or to indoctrinate, rather to bring attention to the beliefs one holds. Teacher educators can assist by helping preservice teachers identify and articulate their beliefs in a concrete manner.

Woolfolk Hoy and Murphy (2001) noted that successful teacher education programs encourage students to discuss the beliefs that ultimately guide their thinking and practices and analyze the “advantages and limitations of thinking with and acting on their current beliefs” (p.164). Patrick and Pintrich (2001) emphasized that teacher educators should create multiple opportunities for their students to identify and explore their beliefs and to articulate them more explicitly and formally. Lortie (1975) wrote that it is essential to increase one’s awareness of “beliefs and preferences about teaching and have him expose them to personal examination” (p.231).
Often teacher educators focus on issues on which they and their students agree, or they assume congruence in beliefs – student and teacher. These students may complete their preparation without ever having examined the bases for beliefs about areas such as their view of the learner, the role of the teacher, and curriculum (Brousseau & Freeman, 1988; McDiarmid, 1990). Mayer and Goldsberry (1987) found that when teacher education programs emphasized reflective thinking and the exploration of beliefs, graduates were better able to resist the custodial influences in the schools in which they taught. Therefore, it is the challenge for teacher education to emphasize the role of beliefs and the role of beliefs in practice to ensure that preservice teachers develop a more principled means of teaching.

Therefore, all good teachers, including teacher educators, must explore, and help their students explore, their beliefs in order to understand the perceptions that influence thinking regarding what is, and is not, educationally meaningful on a personal and professional basis. The Committee on Early Childhood Pedagogy (2001) wrote that just as the preconceptions of young learners must be addressed, so too must the beliefs of adults learners if they are to continue learning.

The instrument provides important information, allowing for further... It was the intent of this study to develop an instrument for the use of teacher educators to explore the beliefs of preservice teachers in terms of the curricular approaches to early childhood education and associated models. reflection on the part of the student by making his or her beliefs explicit (Clark & Peterson, 1986; Kennedy, 1997; Pajares, 1993; Raths, 2001).

**Purpose of the Study**

Beliefs are propositions and values which in turn define various aspects of our lives and social structures. As such, the fundamental composition of beliefs is mirrored in the structural characteristics of models implemented in early childhood education (see Table 1). Curricular models are manifestations of beliefs and belief systems about how children develop and learn and consequently what they should learn. An overview of these relationships is found in the opening sections of this chapter (Orientation and Historical Overview) and demonstrates how beliefs regarding children and what was
viewed as important regarding their development formed the basis for approaches to education at varying times in history.

More recently, concern with preparing children for school success provided the impetus for the creation and use of early childhood curricular models. Beliefs about child development and learning (philosophies and theories) directed the development of these models and provided the unifying aspect of the curricular framework that defined areas such as view of the child, role of the teacher, the types of materials or resources that are used, the emphasis of learning, how (and for what reasons) children should be assessed, and the structure of the learning environment (Biber, 1984; Epstein et al., 1996; Evans, 1982, Goffin, 1994, 2000; Mayer, 1971; Spodek & Brown, 1993; Wolfgang C. & Wolfgang, M., 1999).

The literature regarding preservice teachers' beliefs about teaching in many ways parallels the very ideas that have driven the development of curricular models. Through socialization into teaching and the effect of life experiences, preservice teachers have developed a framework of beliefs, or schema, regarding the various aspects of education and, more specifically, teaching (Bennett, 1994; Clark 1988, Feiman-Nemser & Remillard, 1996; Kennedy, 1997; Pajares, 1992, 1993; Zeichner, 1986). Students entering preparation programs have existing beliefs regarding areas such as teacher characteristics, student behavior, subject matter, teaching methodology, and learning environments (Brousseau, Book, & Byers, 1988; Clark, 1988; Feiman-Nemser & Remillard, 1996; Lasley, 1980; McDiarmid, 1990). Interestingly, these very ideas are found as structural characteristics of curricular models (Epstein et al., 1996; Goffin, 1994, 2000).

Components of curricular models of early childhood education and beliefs of preservice teachers appear to parallel one another (see Table 2). This indicates that the organization of an instrument that reflects this relationship provides a more thorough insight into the beliefs of a preservice teacher. Existing instruments appear to be somewhat limited in scope in that they touch upon certain aspects of beliefs (e.g., Harvey, 1965, 1967; Kaufmann, 1975; Weinstein, 1989), rather than a comprehensive view of the belief systems regarding early childhood curricular models. Therefore, in
### Table 1

**Comparison of Characteristics of Beliefs and Curricular Models**

<table>
<thead>
<tr>
<th>Beliefs</th>
<th>vs.</th>
<th>Curricular Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Representation of matters that are viewed as true</td>
<td>Ideal representation of a valued philosophy</td>
<td>(Evans, 1982)</td>
</tr>
<tr>
<td>(Dewey, 1933)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beliefs do not occur in isolation. Rather they constitute a system of beliefs (Green, 1971)</td>
<td>Constitutes an internally consistent description</td>
<td>(Evans, 1982)</td>
</tr>
<tr>
<td>Individuals may not be able to provide reasons but</td>
<td>Values that guide models are not made explicit for</td>
<td>remain implicit (Goffin, 1994)</td>
</tr>
<tr>
<td>beliefs or be able to defend beliefs (Green, 1971)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value judgments about that which is good or bad, true or false, correct or incorrect (Rokeach, 1968)</td>
<td>Foster a conviction that one model is better than another (Nuthall &amp; Snook, 1973)</td>
<td></td>
</tr>
<tr>
<td>Beliefs provide elements of structure, order, direction, and shared value (Pajares, 1992)</td>
<td>Defines areas of importance for educating young children (how children develop, process of learning, need to learn) (Epstein et al., 1996)</td>
<td></td>
</tr>
</tbody>
</table>
examining the rationale for an instrument to examine preservice teachers' beliefs, the correlation between the beliefs of preservice teachers and the framework regarding curricular model development presented an appropriate structure for new instrumentation.

Following the tradition of researchers such as Charlesworth, et al. (1991), Smith (1992), and File and Gullo (2001), and the related methodologies of instrument development found in studies such as Brown (1968), Dobson, Dobson, and Kessinger (1980) and Smith (1992), and in that research indicates that students are receptive to having their beliefs questioned and explored when done in a manner that is scholarly and unthreatening (Goodman, 1988; Johnson & Johnson, 1988), the aim of this study was to develop and field test an instrument that provides a means of exploring curricular beliefs of preservice teachers in the area of early childhood education. Five objectives were included within the scope of this study: (1) review of the role of beliefs on teaching and the impact of beliefs on the training of preservice teachers; (2) specification of belief statements related to each curricular area as they describe the areas of differentiation within the approach; (3) evaluation and validation of the belief statements by a panel composed of experts in the area of early childhood education; (4) instrument construction; and, (5) the establishment of validity and reliability of the instrument.

Definition of Terms

For the purposes of this study, the following terms have been identified:

**Area(s) of differentiation.** Areas in which the four curricular approaches varied significantly from one another were identified in the literature (Smock, 1982). For the purposes of this study, areas include view of the child, role of the teacher, resources, curriculum, assessment, and learning environment.

**View of the child.** Beliefs that guide practices in early childhood education reflecting child development and how children learn are indicative of how children are viewed by early childhood educators.
Table 2

**Correlation of Frameworks of Curricular Models and Schema of Preservice Teachers**

<table>
<thead>
<tr>
<th>Curricular Models</th>
<th>Preservice Teacher’s Beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consist of a framework to guide implementation</td>
<td>Beliefs are based on socialization into teaching--</td>
</tr>
<tr>
<td>based on development/learning theories</td>
<td>preservice teachers enter preparation with ideas</td>
</tr>
<tr>
<td>Framework includes:</td>
<td>(schema) about teaching</td>
</tr>
<tr>
<td>How children learn</td>
<td>Characteristics of children and how they learn</td>
</tr>
<tr>
<td>Teacher responsibilities</td>
<td>Their roles and abilities as teachers</td>
</tr>
<tr>
<td>Appropriate resources and materials</td>
<td>What learning materials they will use</td>
</tr>
<tr>
<td>Class setting/Learning environment</td>
<td>Classroom characteristics</td>
</tr>
<tr>
<td>What children should learn/ how to assess</td>
<td>What and how they will teach and how they will assess</td>
</tr>
</tbody>
</table>
Role of the teacher. Insomuch as the view of the child reflects ideas concerning child development and learning, this also translates into how the teacher views his or her role and interactions with the child. How the teacher acts, reacts, manages, and plans for the educational experience is considered the role of the teacher.

Resources. Materials that are utilized in the classroom to support and stimulate learning are all considered resources. These may include materials used by children as well as those intended for teacher use.

Curriculum. Curriculum reflects the educational emphasis of the program and goals for the participants. This may include cognitive, social/emotional, and/or physical growth of the child. In addition, the teaching of specific skills or the relaying of information may be prescribed as part of the curriculum.

Assessment. Specific curricular orientations utilize strategies to assess children’s growth that are reflective of the emphasis of that orientation. Examples of assessment strategies may include portfolio development, standardized testing, and anecdotal observations.

Learning Environment. The physical and aesthetic characteristics of the classroom encompass the learning environment. This may include physical placement of furniture and storage and accessibility of learning materials.

Beliefs. Beliefs are perspectives, propositions, or assumptions derived from personal experience, and cultural and/or institutional sources. Tied closely to affective components, beliefs serve to define one’s goals and tasks.

Curricular beliefs. Assumptions, attitudes, and values about teaching, students, and the educational process that a preservice or inservice teacher brings to the classroom define his/her beliefs (Pajares, 1993).

Curricular approach. The term, curricular approach, refers to an educational system that combines theory with practice. A theoretical and knowledge base reflecting a philosophical orientation guides each curricular approach, which is supported by research and principles of child development (Goffin, 1994).

Curricular model. A curricular model refers to frameworks, guidelines, and/or specific organizational structures for education. The model is based on a specific
curricular approach to education. Frameworks or guidelines often include expectations for the learning environment, assessment, structure of activities, child-adult interactions, and materials.

**Curricular orientation.** The curricular approach that a particular person, or program, advocates regarding the view of the child, role of the teacher, resources and materials, curriculum, assessment, and learning environment is considered a curricular orientation.

**Early childhood.** Early childhood refers to the span of time in human development from birth through approximately eight years of age (Bredekamp & Copple, 1997).

**Early childhood education.** A variety of programs serving children from birth to age eight comprises the field of early childhood education.

**Factor analysis.** In the case of this study, exploratory factor analysis was conducted with an oblique, direct oblimin rotation using principal components analysis. Data for the factor analysis was gathered via the initial field-test of the study with practitioners as participants.

**Practitioner.** A teacher that is actively teaching or has completed a program in teacher training.

**Preservice teacher.** A teacher-to-be that is enrolled in a teacher training program.

**Reliability.** In the case of this study, reliability focused on the internal consistency of the instrument, or the degree to which the same characteristic, curricular beliefs, was being measured (Huck, 2000; Krathwohl, 1993). Coefficient alpha, or Cronbach’s alpha, technique was used in the development of the Early Childhood Curricular Beliefs Inventory (ECCBI) in that it is more useful with instruments using Likert-type scales (Huck, 2000).

**Validity.** Content, criterion, and construct validity were of concern in the development of the Early Childhood Curricular Beliefs Inventory (ECCBI). A panel of experts, with expertise in early childhood education theory, was used in the evaluation of content validity of items. The panel used classification and sorting procedures in their efforts. In addition, the instrument was administered to a group of practitioners with
training in the four curricular approaches (Developmental-Interaction, Direct Instruction, HighScope, and Montessori) to assess further the content validity through factor analysis. Results were also used in establishing the criterion and construct validity of the Early Childhood Curricular Beliefs Inventory (ECCBI).

Criterion validity addressed the issue of whether scores obtained on an instrument correlated to the criterion measure of training. It was hypothesized that the scores of the practitioners, on the subtests of the ECCBI, were correlated to their curricular training. A contrasted groups approach was used by examining subtest score differences among practitioners. An initial repeated measures analysis of variance was conducted as well as individual one-way analyses of variance. The null-hypothesis for this phase of the study was as follows: $H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4$, or, there was no variance in mean scores on the sub-tests of the ECCBI among the four groups of practitioners.

Construct validity addressed the issue of whether the instrument, assessed the underlying variable (beliefs) that it was intended to represent (Bryant, 2000). It was hypothesized that practitioner scores on the subtests of the ECCBI would correlate to training and scores would be significantly lower on the subtest representing the area of training. A posteriori pairwise comparisons using parametric (Tukey’s HSD) or nonparametric (Mann-Whitney U) tests were conducted to compare means scores on subtests by each group of practitioner. The null-hypothesis for construct validity was as follows: $H_0: \mu_{x1} > \mu_{x2}, \mu_{x3}, \mu_{x4}$, or that the criterion group’s score on the associated subtest was significantly greater than the other mean scores on the same subtest of the ECCBI.
CHAPTER 2

REVIEW OF RELATED LITERATURE

The purpose of this chapter was to review the literature pertaining to early childhood curricular approaches and the models derived from these approaches, the beliefs of preservice teachers, and the use of various instruments to explore one’s beliefs. The chapter is divided into three sections: (1) review of curricular approaches and associated curricular models, and the areas of differentiation; (2) beliefs and how those beliefs influence preservice teachers; and, (3) beliefs instruments and the use of those instruments.

Curricular Approaches and Models

A curricular approach is a representation of the theoretical foundations and pedagogical components aimed at achieving a particular educational goal. An approach is interpreted as a curricular model that serves as a framework to guide program implementation in terms of how children develop and learn, ideas about how to organize learning resources and experiences, and beliefs about what is important for children to know (Biber, 1984; Goffin, 2000; Spodek, 1973; Spodek & Brown, 1993).

Psychologists, philosophers, and early childhood educators have all contributed to the literature concerning early childhood education. An analysis of relevant literature identified four prevalent curricular approaches that guide early childhood education. While labeled throughout the literature in various ways, for the purposes of this study the four approaches were identified as: Developmental Interaction, behaviorist, Cognitive Developmental, and sensory-cognitive. These approaches are often translated as the following curricular models: Developmental Interaction as Developmental Interactionist (also know as Bank Street), behaviorist as Direct Instruction, cognitive developmental as HighScope, and sensory-cognitive as

The literature revealed that curricular approaches and models may be examined as to why and how they differ. The delineation of the theoretical orientation, and consequently the goals, determine why each is unique. Pedagogical methods and structured characteristics clearly indicate how approaches and models differ from one another (Evans, 1982; Mayer, 1971; Spodek & Brown, 1993; Wolfgang, C. & Wolfgang, M., 1999). Educators interpret these curricular methods and characteristics when implementing the approaches as specific models of early childhood education. Models represent the approach in action. These models differ in very specific ways and are unique approach to approach, and model to model.

The literature identified various means of analyzing approaches and specified areas of differentiation among models. Spodek (1973) proposed a framework for the analyses that examined differences regarding child and teacher interactions, programmatic goals, curriculum content, instructional methodologies, style, and classroom organization. Mayer (1971) advocated the examination of the basic components of teacher and child interaction and use of materials. Joyce and Weil (1972) applied a framework that inspected materials, teacher actions, and curricular implications. In her research, Smock (1982) examined six criteria for analysis of early childhood theoretical positions: view of the child, role of the teacher, focus on the individual vs. group, curriculum, reinforcement, and environment. Similarly, Charles Wolfgang and Mary Wolfgang (1999) stated that curricular models vary in how learning occurs, the teaching methodology, role of the teacher, instructional framework, activities, and the use of resources such as time, space, and materials. For the purposes of this study the following areas of differentiation were considered: view of the child, role of the teacher, resources/materials, curricular emphasis, assessment, and learning environment.

The review of literature concerning the curricular approaches and the model identified with each approach is divided into four parts. Each of the four major curricular approaches is presented. Presentations are then sub-divided into three parts. The first
part is an explanation of the theoretical underpinnings on which each is based. Following this, a brief history is given. Due to the unique nature of the sensory-cognitive Montessori method, the theoretical and historical bases will be dealt with in one section. In the third part, the six areas that differentiate each as unique are reviewed in terms of that curricular approach and model.

Developmental Interaction Approach and Model

Developmental Interaction Theoretical Bases

The term “Developmental Interaction” represents a perspective regarding the relationship between development and learning (Biber, 1981). It denotes the ways in which children gain competence, understand, respond, change, and grow as a result of experiences with their environment (people and materials), as well as the interconnectedness of cognition and affective elements (Biber, 1984; Cuffaro, Nager, & Shapiro, 2000; Goffin, 1994; Weber, 1984; Zimiles, 1987).

Initially, the Developmental Interaction approach was heavily influenced by the work of educational philosopher John Dewey, and psychologists such as Sigmund Freud, Anna Freud, and Erik Erikson (Biber, 1981/1984; Nager & Shapiro, 2000; Zimiles, 1987). More recently, selected philosophies of Jean Piaget, as well as those of Lev Vygotsky, were viewed as supportive of the approach (Nager & Shapiro, 2000).

Dewey’s (1900) philosophy advocated the creation of a fresh educational design that recognized the worth of the individual. He identified problem solving and skillful thinking as a priority, emphasized functional and experiential learning, and social cooperation as guiding principles of a progressive program. These objectives had a major influence in shaping teaching/learning strategies in the Developmental Interaction approach (Biber, 1984; Weber, 1984).

The theoretical basis for the approach was drawn, in part, from the psychodynamic theory insofar as these theories related to the development of young children (Biber, 1984). Sigmund Freud originated the psychodynamic theory and revolutionized the thinking about childhood in the twentieth century. He believed that psychodynamic forces, meaning “mind” and “energy”, caused human behavior. Freud contended that this mind energy was present at birth and that it affected every stage of
human development. Therefore, to gain an understanding of human behavior, it was necessary to gain an understanding of the psychodynamic forces at work during infancy and early childhood (Zimiles, 1982).

Neo-Freudians such as Anna Freud and Erik Erikson put forth the belief that early childhood experiences were crucial to adult personality formation. Erikson (1963) emphasized the effects of social and cultural factors upon the individual’s development as well as stressing individuality and autonomy.

Many of the views of Piaget are incongruent with the Developmental Interaction approach, namely the lack of attention given to affect. However Piaget’s constructivist view of learning, focus on individual thought processes, and recognition of learning and development as related but not the same were influential in the further development of the approach (Biber, 1984; Nager & Shapiro, 2000).

More recently, Vygotsky’s theories have been viewed as compatible with the Developmental Interaction approach (Nager & Shapiro, 2000). Vygotsky’s (1978) emphasis on the interactive nature and social concept of learning and development are in agreement with the framework of the approach (Cuffaro, Nager & Shapiro, 2000; Martin, 2000).

**History of the Developmental Interaction Approach**

The Developmental Interaction approach first evolved under the leadership of Lucy Sprague Mitchell in the early decades of the twentieth century and was originally known as the Bureau of Educational Experiments. Influenced by John Dewey, Mitchell (1950) moved to create an approach to early childhood education that supported and enhanced children’s growth and development as well as one that promoted social change. The Nursery School, under the direction of Harriet Johnson, was opened in 1918. Children then moved on to Caroline Pratt’s City and Country School. The staff emphasized the study of children’s development and Mitchell became a student of children’s language. Development of appropriate children’s literature became a focus of the Bureau. Curriculum was created that provided for self-expression and exploration of the child’s environment. In 1930, the Bureau moved to new facilities on Bank Street and the school took the address as its name. In the 1970s, Developmental Interaction was adopted as the representative title for the Bank Street Approach (Bank Street, n.d.;
Shapiro & Nager, 2000). Uniquely, the Developmental Interaction approach, and the corresponding model of the same name, represents a traditional view of early childhood education. Originally known as Bank Street, the model of implementation was renamed Developmental Interaction to more clearly reflect the ideals of the approach.

Developmental Interaction was based on the belief that the goal of early education should not be exclusively intellectual, rather, it should be holistic in nature, taking into account the child’s social, emotional, and physical needs -- providing opportunities for growth in all areas (Biber, 1981/1984; Goffin, 1994; Weber, 1984). The direct study of child development and experimentation with educational practices was, and continues to be, an integral part of the Developmental Interaction model (Biber, 1984; Nager & Shapiro, 2000; Weber, 1984).

Areas of differentiation

View of the child (Developmental Interaction). The Developmental Interaction model recognizes that each child brings to school a history of experiences that are shaped by the family, community, and culture (Biber, 1984). The child is viewed holistically rather than as a collection of separate skills to be trained. Children are seen as curious beings that are actively engaged within the physical and social environment (Cuffaro et al., 2000). Through exploration and experimentation children work to make sense of their environment (Biber, 1973; Nager & Shapiro, 2000). Importance is placed on each child achieving a positive self-image as a learner (Biber, 1984).

Role of the teacher (Developmental Interaction). The teacher implementing the Developmental Interaction model is well versed in child development theory and observational techniques (Mitchell, 1950; Evans, 1971). The primary role of the teacher is to observe, question, and plan opportunities for experiences that meet the needs of the individual child (Cuffaro et al., 2000). The teacher facilitates and guides children through activities initiated by the learner (Biber, 1984; Mitchell & David, 1992).

Within the framework of the Developmental Interaction model, the teacher promotes play as a source of learning. She selects and arranges materials for play in the classroom and the outdoor space. Experiences that facilitate children’s dramatic
play are planned; the teacher helps children frame their play through discussion and feedback (Franklin, 2000; Mitchell & David, 1992).

**Resources/materials (Developmental Interaction).** Materials in the Developmental Interaction classroom are selected to encourage children to use language, enhance cognitive processes, and develop problem solving and social skills (Biber, 1973). Priority is given to open-ended materials that provide opportunities for exploration, experimentation, and representation (Goffin, 1994). This includes blocks, sand and clay, wood, paints, planks, climbing structures, animal and people figurines, dress-up clothes, and home living resources (Goffin, 1994). Materials with more structured purposes, such as puzzles and pegboards, are included in the classroom to strengthen perceptual discrimination and problem solving skills (Zimiles, 1981).

Zimiles (1987) reported that teacher-made resources are encouraged in that these materials may better suit the needs of the children and model resourceful and inventive action. Child produced books and collections are included in interest centers to reinforce the child’s resourcefulness. In addition, commercially produced materials that portray multi-ethnic characters and a variety of community settings have been developed for use in the Developmental Interaction classroom.

The community and persons within the community are viewed as vital resources as they provide the backdrop for the social studies based curriculum that is central to Developmental Interaction. Resource persons and materials are brought into the classroom and children travel into the community to enhance the curriculum (Biber, 1984; Mitchell & David, 1992; Zimiles, 1987).

**Curricular emphasis (Developmental Interaction).** The Developmental Interaction model is social studies based in that it provides a framework through which the learner can develop conceptual relationships, a solid sense of self, and an internalized code of behavior (Biber, 1973; Goffin, 1994; Zimiles, 1987). This emphasis supports the value that Lucy Sprague Mitchell (1950) as well as John Dewey (1916) placed on the social aims of education and places the child at the center of all curricular decisions. Integrated within this social studies core are opportunities for action and interaction with objects, people, and ideas in a well-planned environment (Biber, 1984; Vascellaro, 2000; Zimiles, 1987).
Activities, such as visits into the community, give children an arena to question, problem solve, and make sense of interactions in their social and physical environment (Cuffaro et al., 2000). Opportunities for children to develop skills in language arts, mathematics, science, the arts, and social and physical development are integrated into the curriculum (Cuffaro et al., 2000; Gilkeson, Smithberg, Bowman, & Rhine, 1981; Mitchell & David, 1992).

Play is viewed as an essential curricular component (Biber, 1981). Teachers provide the impetus for play and support these opportunities throughout the curriculum; moving from the spontaneous play of the young child to the more structured forms of dramatic enactments (Biber, 1981; Franklin, 2000).

**Assessment (Developmental Interaction).** Consistent with the emphasis of Developmental Interaction, competence in basic skills, a wide range of knowledge, attitude, and characteristics of the learner are equally important (Cuffaro et al., 2000). Therefore, assessment of the learner is based on ongoing, systematic, and reflective observations over time (Haberman, 2000). Teachers use careful observations of work and behavior, portfolios, and teacher-designed techniques to assess quality of learning. Interpretations of these assessment tools are important resources that guide planning (Cuffaro et al., 2000; Haberman, 2000).

**Learning environment (Developmental Interaction).** The dynamic environment of the Developmental Interaction classroom has a well-defined structure with clear rules that help children function autonomously and meaningfully (Epstein et al., 1996; Zimiles, 1987). Rooms are organized into interest areas that allow children to pursue special projects such as blocks, dramatic play, construction, art, mathematics, music and reading (Goffin, 1994; Mayer, 1971; Zimiles, 1987). While the learning environment is structured in terms of areas of interest, there exists flexibility in the schedule to provide ample time for active exploration (Cuffaro et al., 2000; Mitchell & David, 1992).

Children may work individually or in groups fostering both independence and cooperation (Cuffaro et al., 2000). There is freedom of movement and choice to encourage active participation in the classroom with easy access to all materials (Epstein et al., 1996; Evans, 1971; Cuffaro et al., 2000; Nager & Shapiro, 2000).
Students have multiple opportunities for motor and sensory experiences through manipulation and experimentation with objects that are available in interest areas (Gilkeson et al., 1981).

The classroom is rich in print; written labels, messages, job charts, and other materials are used to organize the environment. Classroom libraries contain a variety of reading resources including a wide array of books, magazines, and child-produced resources (Cuffaro et al., 2000; Mitchell & David, 1992).

In addition to the traditional physical classroom, the Developmental-Interaction approach utilizes experiences in the community and field trips as a regular part of the curriculum. These experiences are used to strengthen the social studies framework and deepen the child’s learning by emphasizing the realness of concepts and exploration (Zimiles, 1987).

Behavioral Approach

Behavioral Theoretical Bases

Unlike the other curricular approaches and models examined in this study, the origins of this approach are found in behavioral theory as opposed to the child development theories that guide many approaches and associated models (Cryan & Surbeck, 1979; Epstein et al., 1996; Franklin & Biber, 1977; Goffin, 1994). Instead, it is based on learning principles derived from behavioral theory (Goffin, 1994; Rhine, 1981). The works of Pavlov, Thorndike, Watson, and Skinner have lead to further understanding of these principles and have been found to be applicable to early childhood classrooms (Mounts & Roopnarine, 1987).

The Behavioral approach is based on knowledge derived from three primary sources: (1) behavior theory (Becker, et al.; Franklin & Biber, 1977; Goffin, 1994), (2) concept and task analysis (Becker et al., 1981; Rhine, 1981), and, (3) resource analysis (Becker et al., 1981).

At the center of behavioral theory is the belief that observable behavior constitutes the primary means for the scientific investigation of learning. Behavioral changes and individual differences are explained in terms of learning, as opposed to development. Learning is seen as changes in behavior as a result of experiences or
external events and appropriate reinforcement (Epstein et al., 1996; Goffin, 1994; Mounts & Roopnarine, 1987; Neisworth & Buggey, 2000).

Basic principles of learning that influenced the approach include reinforcement, conditioned responses, stimulus control, prompting, shaping, extinction, and fading (Carnine, Silbert, & Kameenui, 1997; Franklin & Biber, 1977). The identification of structural relationships that exist among concepts and tasks are viewed as a prerequisite for designing effective and efficient learning programs. Objectives are analyzed to determine common solution strategies in order to organize instruction (Becker et al., 1981; Goffin, 1994).

Program designers use logical analysis to determine potential benefits and costs of alternative resources. Analyses result in the use of small group instruction, use of parental paraprofessionals, giving priority to academic instruction over play, art, music, etc., and the use of scripted lessons (Becker et al., 1981; Goffin, 1994).

Models of implementation that are built upon the behavioral theories include Direct Instruction that can be traced from the early inception and application of Behavioral theory to early childhood education. An examination of the history of the approach details the development of the associated model.

History of the Behaviorist Approach and Direct Instruction Model

The original use of the term ‘direct instruction’ by Barak Rosenshine focused on teacher behavior, classroom organization, and programmed use of instructional time (Carnine, Silbert, & Kameenui, 1997). The Direct Instruction model was later identified with Head Start and Follow Through as a behavioral approach to early childhood education (Becker et al., 1981).

The precursor to Direct Instruction was the Bereiter-Engelmann Model, established by Carl Bereiter and Siegfried Engelmann in the mid-1960s as an academic preschool program for disadvantaged children. The preschool was designed to provide intensive academic instruction in reading, language, and arithmetic to the identified population. Curriculum was developed based on expectations for first grade success and contents of standardized tests (Bereiter, 1970; Bereiter & Engelmann, 1966; Goffin, 1994).
The model demonstrated instructional methods that were fast paced, eliminated irrelevant behavior (teacher and student), and required frequent verbal responses. The curriculum placed stringent work demands on children and was comprised of carefully planned, small-step instructional units that provided continuous feedback (Bereiter & Engelmann, 1966).

After the departure of Carl Bereiter in 1967, Wesley Becker joined Engelmann in program development. Becker strengthened several behavioral components of the approach and the approach became known as the Engelmann-Becker Direct Instruction model, and subsequently as the Direct Instruction model (Goffin, 1994).

The Direct Instruction model is based on two premises: (1) the rate and quality of children’s learning is a function of environmental events, and (2) educators can increase the amount of children’s learning in the classroom by carefully planning the details of student’s interaction with the environment. Instructional programs in the areas of reading, arithmetic, and language comprise the model and are published under trade names such as DISTAR and Open Court (Becker et al., 1981).

**Areas of Differentiation**

**View of the child (Behavioral approach/Direct Instruction model).** Direct Instruction is based on the belief that all children have a capacity for learning, and that learning problems are essentially environmentally based. The child is viewed as a recipient of learning as opposed to a participant in learning (Bereiter & Engelmann, 1966; Evans, 1971; Goffin, 1994).

Children are expected to meet the demands of a very stringent workload. They are to work at a very fast pace; as many as 500 responses may be required in a twenty minute period. Correct verbal responses in both structured and unstructured activities are required. Proper replies are expected and children are questioned until appropriate answers are given (Becker et al., 1981; Bereiter & Engelmann, 1966; Evans, 1971).

Grouping of children by ability is a common practice in the Direct Instruction model. It is viewed as a means of allowing teachers to maintain the pace and needed progress through the scripted materials (Becker et al., 1981; Bereiter & Engelmann, 1966; Gemma, 1989).
**Role of the teacher (Behavioral approach/ Direct Instruction model).** The Direct Instruction model ascribes to systematic and dynamic teacher behaviors. The role of the teacher is highly authoritative, in that it is the teacher who plans and carries out all activities (Bereiter & Engelmann, 1966; Evans, 1971).

Teachers in the Direct Instruction model must be highly skilled in the execution of language, reading, and arithmetic activities. Goals for the Direct Instruction classroom are concrete and guide teacher actions and predetermine the sequencing of lessons (Bereiter & Engelmann, 1966; Evans, 1971). Teachers and their assistants are expected to become specialists in one of three curricular areas, must have a thorough knowledge of how to teach a subject, and have knowledge of children’s misconceptions as well (Bereiter & Engelmann, 1966; Carnine, D., Carnine, L., Karp, & Weisberg, 1988).

The teacher in the Direct Instruction model is responsible for determining what is to be learned. Teaching is then carried out using scripted material. Teachers use short explanations, rhythmic phrasing of verbal statements, and clapping to dramatize language. They work at a brisk and steady pace; presenting tasks of varying levels of difficulty at varying times in the instructional period (Bereiter & Engelmann, 1966; Evans, 1971; Gemma, 1989; Jacobs & Welch, 1983). Efficient use of instructional time is required of all instructional personnel (Carnine et al., 1988). Teachers use rewards and praise to keep children motivated (Bereiter & Engelmann, 1966; Goffin, 1994).

**Resources (Behavioral approach/Direct Instruction model).** The designers of the Direct Instruction model completed a logical analysis of the use of classroom resources in order to maximize the educational benefit of the approach. As a result, didactic teaching materials in the areas of reading, arithmetic, and language have been created for direct instruction (Becker et al., 1981). Under trade names such as DISTAR and Open Court, these resources provide detailed scripts for implementation as well as student workbooks and worksheets. Programs such as DISTAR offer three levels for each of the subject areas. Behavioral objectives indicate terminal expectations for the specific lessons (Evans, 1971). Teacher’s guides specify the exact wording of explanations and questions that work with a wide range of students (Carnine et al., 1988; Gemma, 1989).
Curricular emphasis (Behavioral approach/Direct Instruction model). The Direct Instruction curriculum was created with the belief that how children are educated is as important as what they are being taught. Two strategies were employed in curriculum development. Bereiter and Engelmann (1966) reported using the academic expectations for the primary grades as guides for skills and concepts to be included in the Direct Instruction curriculum. In addition, Bereiter (1970) reported that an analysis of the content of the Stanford-Binet intelligence test was used to identify concepts that were to be included in the curriculum.

Direct Instruction curricular emphasis focuses on the three academic areas of reading, arithmetic, and language. While the approach does not have a social-emotional component, Becker et al. (1981) indicated that increased competence in the above areas and the instructional methods that are employed result in increased self-confidence and self-esteem. Instructional programs in each of the three academic areas are the core of the Direct Instruction model and are published under trade names such as DISTAR and Open Court.

The Direct Instruction reading program is based on the belief that the best way to teach reading is to concentrate upon the operations that are involved in the act of reading. The initial focus of the reading program is development of decoding skills. Instruction then emphasizes comprehension and reading fluency to obtain and process new information (Becker et al., 1981; Evans, 1971; Goffin, 1994).

The Direct Instruction arithmetic curriculum assumes that math is a special form of language. Initial emphasis is on counting procedures and language (Bereiter & Engelmann, 1966). Basic operations are then introduced while examining related story problem forms, measurement, and beginning algebraic concepts (Becker et al., 1981; Goffin, 1994).

Language curriculum encompasses the teaching of object names, object classes, properties, and relational terms. Expectations include language comprehension and language development (Becker et al., 1981). Throughout the language program, emphasis is placed on the teaching of rules that guide children’s observations, analyses, inferences, and generalizations. All concepts are taught in the same manner.
to provide consistency and ease of generalization (Bereiter & Engelmann, 1966; Carnine et al., 1988).

**Assessment (Behavioral Approach/Direct Instruction model).** Assessment lies at the core of the Direct Instruction model. It is used in the planning and implementation of the curriculum (Goffin, 1994). Planning involves the identification of the needs of children. Informal instruments are used to identify existing knowledge and capabilities. This includes alphabet and numeral identification, knowledge of rote counting, counting for meaning, and fine motor tasks. In addition, tasks such as verbatim statement repetition may indicate a child’s ability to comprehend oral language (Carnine et al., 1988).

Monitoring children’s progress is essential to the implementation of the approach. Worksheet and verbal responses are initial checks of children’s progress and achievement (Gemma, 1989). Criterion-referenced tests are used to track progress of the child and the effectiveness of teaching. These measures are built into each Direct Instruction program and may be administered on a biweekly basis or upon completion of units of study. Test items are tied to specific sets of lessons and objectives (Becker et al., 1981; Carnine et al., 1988; Gemma, 1989). Reports derived from tests are used to regroup children, provide tutoring, and determine if children are progressing at an appropriate and acceptable rate (Becker et al., 1981).

**Learning environment (Behavioral approach/Direct Instruction model).** The Direct Instruction learning environment is highly structured, work-oriented, and fully focused on academics. Bereiter and Engelmann (1966) refer to “sterilizing the environment” (p. 72). The classroom should be plain and free from clutter. Toys should be limited to form boards, puzzles, books, drawing and tracing materials, and a very limited assortment of microdramatic play materials. A minimal supply of materials in the environment is believed to prevent the over-stimulation of the children. In addition, small classrooms are considered ideal in that this limits a child’s temptation to explore and roam about (Bereiter & Engelmann, 1966).

Ideally, direct Instruction calls for three teachers for every fifteen children. Classroom aides assist the teacher, with each adult responsible for instruction in a curriculum area—reading, arithmetic, and language. The schedule consists of three 20-
to 30-minute instructional periods with children rotating through the three subject areas (Becker et al., 1981). The instructional day varies depending on the structure of the early childhood program (e.g., full-day vs. half-day). The original Direct Instruction program consisted of a two-hour day, in which one hour was devoted to direct instruction. The other hour was for “minor activities” (p.67) such as snack, bathroom, music, and semistructured activities (Bereiter & Engelmann, 1966).

Cognitive Development Approach

Cognitive Development Theoretical Bases

The Cognitive Development approach to early childhood education is based on the belief that intellectual growth is the most important component in children’s development. Cognitive Developmentalists insist that almost all aspects of one’s life are influenced by thought and language (Hohmann & Weikart, 1995).

From a Cognitive Developmentalist’s perspective, intellectual functions are extremely complex and internally derived. New skills are not learned as a result of a change in behavior, as the behaviorists would contend, nor does this skill just develop with time as in the developmental interaction point of view. It is believed that changes in cognitive abilities are the result of a continuous developmental process, with new concepts building on and incorporating preceding knowledge through environmental interaction (DeVries & Kohlberg, 1987; Piaget, 1954).

Attention to children’s intellectual development is most closely associated with the work of Jean Piaget. Piaget’s study of child development concentrated on cognition rather than physical growth, or social and emotional development. His interests focused on the child’s development of epistemological processes such as thinking, knowing, perceiving, remembering, abstracting, and generalizing (DeVries & Kohlberg, 1987; Piaget, 1954).

From detailed observations of children, Piaget constructed a theory that described and classified cognitive processes and the development of knowledge (Lascarides & Hinitz, 2000). The Cognitive Developmental view is based upon the premise that cognitive behaviors are fostered from the interaction of the child with his environment (Evans, 1971; Hohmann & Weikart, 1995).
Piaget (1954, 1959, 1963, & 1965) theorized that intellectual development progresses through four qualitatively different stages from birth to adolescence: sensorimotor (birth to 2 years); preoperational (2 years to 7 years); concrete operational (7 years to 11 years); and formal operations (11 years and older). Children move through all stages, but the age of the child and the rate of progression from stage to stage may vary considerably among individuals. Piaget believed that changes in cognitive abilities were the result of a continuous developmental process, with new concepts building on and incorporating preceding knowledge (DeVries & Kohlberg, 1987).

Each developmental stage is identified by certain behaviors that characterize that stage. The sensorimotor stage is characterized by the infant’s reliability on reflex action and his senses in order to interact with things. With the development of motor skills, the child in this stage is able to actively explore his environment. The child shows preliminary signs of classification, curiosity, and imitation and demonstrates an ability to anticipate events in a fundamental fashion. By the end of the sensorimotor stage, the child shows an active interest in producing new behavior and novel events, no longer depending on reflex actions to provide stimulation (DeVries & Kohlberg, 1987; Trawick-Smith, 2000).

Preoperational children hold egocentric perspectives. The child views the world only in terms of himself and what directly affects him. The child has limited awareness of those around him, and there is little cooperation and communication in the earlier period of this stage. The preoperational child prefers to make autonomous choices regarding play and strives to explore and manipulate objects. Thinking is still tied to concrete objects and the here and now. (DeVries & Kohlberg, 1987; Trawick-Smith, 2000).

By the time the child reaches the concrete operational stage, he is capable of cooperating with others to see a task through to completion. The child sees beyond himself and engages with others. Group activities and games with rules are now a part of his repertoire. Abstract thinking processes are developing and he can use logic to problem solve. However, he still requires concrete objects to learn. The formal operations stage is marked by the ability to reason abstractly and hypothetically.
Thinking is becoming free of the immediate physical context (DeVries & Kohlberg, 1987; Trawick-Smith, 2000).

A fundamental principle of Piaget's theory is that knowledge is constructed through the action of the learner. Through experiences with one’s environment and attempts to assimilate new concepts, the child’s balance of thinking is often disturbed. This disequilibrium within established ideas motivates the child to accommodate new information and adapt his or her schemata accordingly. Intellectual development occurs as a result of the continual, active interplay of assimilation and accommodation (Piaget, 1954; Smilansky, 1968).

**History of the Cognitive Developmental Approach**

The social and educational climate of the early 1960s was ripe for the inclusion of cognitive development in early education. Prior to this time, intellect was believed by many to be predetermined and fixed by heredity. Reassessment of this view shifted the focus from the role of biology to the role of the environment as attention turned to assisting at-risk populations succeed in school (Goffin, 1994).

Piaget’s theory of cognitive development was seen as a logical and promising approach to early childhood education. Concerns over the apparent lack of cognitive performance of disadvantaged, or at-risk students, provided the impetus to develop programs to meet the needs of these children in the schools (Lascarides & Hinitz, 2000). Several curricular models based on the cognitive developmental approach grew out of Piaget’s theories. Two found roots in the Ypsilanti, Michigan school district; one in particular has seen widespread usage as the HighScope model (Hohmann & Weikart, 1995).

In 1962, David Weikart, Director of Special Services for the Ypsilanti, Michigan Public Schools, initiated the Perry Preschool Project. Concern over the persistent failure and consistently low scores on standardized tests of students from Ypsilanti’s poorest neighborhoods lead Weikart to conclude that this data reflected the students’ limited opportunities for adequate school preparation (Hohmann & Weikart, 1995). With the majority of students performing well in school, the district would not change existing practices. An ad-hoc committee of concerned educators considered early
intervention for 3- and 4-year olds and set into motion the creation of a preschool classroom in the Perry Elementary School (Hohmann & Weikart, 1995).

Unlike the typical early childhood programs of the day, this early intervention model sought to devote more attention to intellectual growth as opposed to social and emotional development. Three basic criteria were established for the creation of the cognitively oriented model for early childhood education. These included utilizing a coherent theory about teaching and learning, providing opportunities for active learning, and equal recognition of theory and practice in curriculum development (Hohmann & Weikart, 1995). Piaget’s theory offered a conceptual structure and view of the child around which an early childhood curricular model could be developed that had strong ties to early childhood traditions dating back to at least Froebel’s kindergartens in the nineteenth century (Weikart & Schweinhart, 2000).

Areas of Differentiation

View of the child (Cognitive Developmental/HighScope model). Essential to the Cognitive Developmental approach is the view of the child as an active learner, experimenter, and explorer who adapts to his environment (Ellis, 1977; Hohmann & Weikart, 1995). The child constructs his understanding of the world from his own active involvement with people, materials, and ideas (Powell, 1991; Weikart & Schweinhart, 2000). A sense of self develops as the child interacts with significant people in his environment (Hohmann & Weikart, 1995).

Role of the teacher (Cognitive Developmental/HighScope model). The role of the teacher in the HighScope model is clearly outlined in the literature (Hohmann & Weikart, 1995). The uniqueness of this model can be found in teacher-child interactions and the responsiveness of the teacher to the child. One of the guiding principles is that the teacher is to support children’s construction of their own understanding of the world (Hohmann & Weikart, 1995; Powell, 1991).

HighScope developers cited studies indicating that in classrooms where teachers are responsive—guiding and supporting children’s activities rather than directing and controlling—children take the initiative more often and are more likely to be actively involved and persistent in their work. Therefore, this model views the role of the teacher as one that is responsive who follows children’s interests rather than imposing their
ideas on the child. They share control with the child by following the child’s lead in play or activities. Teachers in the HighScope model interact with the child at the child’s level of understanding and encourage the child to achieve success (Hohmann & Weikart, 1995; Powell, 1991).

The environment should support the child as a manager of his actions. As such, the teacher must prepare the classroom environment to facilitate this level of independence. The teacher creates an environment that is rich in a variety of interesting and stimulating opportunities, establishes a consistent daily routine, models interacting with materials and people, and sets reasonable limits within the environment (Graves & Strubank, 1991; Hohmann, & Weikart, 1995).

**Resources (Cognitive Developmental/HighScope model).** A wide range of materials may be found in the HighScope setting. The key aspect of any material is its ability to be explored and manipulated with great consideration given to safety and appropriate conceptual level (Hohmann & Weikart, 1995).

Common materials in the classroom include practical everyday items such as pots and pans, eggbeaters, tools, mail, wood, sheets, boxes, books, and paper. In addition items from nature such as stones, shells, nuts, leaves, and sand, as well as found items like paper tubes, carpet scraps, envelopes and the like provide exploratory experiences. Tools that provide opportunities for manipulation and give children opportunities to enhance their dramatic play are part of the classroom. These may include household items (i.e., brooms, dustpans, mops, buckets, sponges), tools for joining objects (i.e., staplers, hole punches, tape, scissors, glue), and outdoor tools (i.e., shovels, hammers, hoses, and watering cans). Touchable materials like sand, water, play dough and paint provide sensory experiences. Manipulation of heavy items such as large wooden blocks, wheeled toys, and other sturdy items promote the use of the whole body and assist in developing a sense of physical capabilities. Materials that fit in children’s hands such as Lego blocks, buttons, dry beans, and toy cars give children a sense of control and independence as they can manipulate these without adult assistance (Hohmann & Weikart, 1995).

Weikart and Schweinhart (2000) stated that the HighScope model does not require the purchase and use of special materials for implementation. However,
resource materials published by, and available through, HighScope are numerous and include printed curricular materials and videos as well as assessment tools.

**Curricular emphasis (Cognitive Developmental/HighScope model).**

HighScope is based on a set of beliefs that outline how the model is to be implemented and the content of the program. While the model does not have a defined curriculum, as do others, it is based on a framework of key experiences organized around ten areas (Weikart & Schweinhart, 2000). The areas are creative representation, language and literacy, initiative and social relations, movement, music, classification, seriation, number, space, and time. The statements of key experiences describe the social, cognitive, and physical development of preschool age children (Hohmann & Weikart, 1995) with an emphasis on problem solving, independent thinking, social development, and relationship formation. Key experiences provide the teacher with a means of understanding, supporting, and extending children’s self-initiated learning to ensure that opportunities for growth are available. Teachers continually evaluate the child’s developmental status and present challenges intended to stretch the child in all aspects (Weikart, 1988).

Adults maintain a balance of child- and teacher-initiated activity. The daily routine provides needed structure for the day, while activities provide variety and choice (Graves, 1996). The routine includes the plan-work-recall sequence. During the planning part of the sequence, children decide what they will do during work-time, sharing these plans with the adult and a small group of children. Children freely move about the interest areas during work-time implementing the plans that they had made and initiating additional plans. Upon completion of work time, the children return to the small group to recall and discuss their activities (Graves, 1996; Hohmann & Weikart, 1995).

Other adult-initiated components of the HighScope routine are small-group and large-group time. Small-group activities are planned by an adult and are based on observations of the children’s interests and needs. Once the adult sets the activity in motion, children freely explore and experiment with materials (Graves, 1996). At large-group time, all children meet together with an adult for movement, singing, games, and
finger plays. At this time children have an opportunity to participate, imitate, as well as share and demonstrate ideas (Weikart & Schweinhart, 2000).

Key experiences and the daily routine provide a framework for organizing the curriculum to meet the developmental needs of the child. Teachers use the environment as an essential part of the curriculum by making it conducive to exploration and experimentation by all children.

Assessment (Cognitive Developmental/HighScope model). Assessment is based on daily observations of children’s behaviors. Utilizing the key experiences and the Child Observation Record (COR) as the bases for assessment, teachers record daily anecdotal notes and use these for short-term planning as well as evidence of growth over a period of several months (Graves, 1996; Weikart & Schweinhart, 2000).

The Child Observation Record (COR) is a checklist of tasks in the six developmental areas of: initiative, social relations, creative representation, music and movement, language and literacy, and logic and mathematics. The instrument enables teachers to see patterns in children’s development over time as well as providing a basis for program evaluation and revision (Hohmann & Weikart, 1995; Tompkins, 1991).

Learning environment (Cognitive Developmental/HighScope model). In that learning is viewed as an active process, and knowledge is constructed, the child must be given an environment that promotes his tendency for exploration and experimentation (Franklin & Biber, 1977). The HighScope classroom is divided into several interest and activity areas that are designed to encourage children to interact with one another, observe and manipulate real objects, enact a variety of roles, and practice life skills (Schweinhart & Weikart, 1988). Areas include art (expressive and visual); quiet activities (manipulatives, books, micro-dramatic play toys, small construction items, and games); dramatic play; active play (blocks, tub activities, work bench), and an outside area for gross motor activities. Each area is prepared to accommodate a wide array of developmental levels with children having free access to all materials (Hohmann, & Weikart, 1995).
Montessori Sensory-Cognitive Model

Theoretical and Historical Bases of the Montessori Method

The philosophy of the Montessori method is based on the work and writings of the Italian physician Maria Montessori. In 1907, Montessori opened the Children’s House (Casa dei Bambini) in the slums of San Lorenzo, Italy. Convinced that the first six years of life were the most critical in the development of children, Montessori’s institution served as a resource for social and educational services for disadvantaged children 3 to 6 years of age and for their families (Montessori, 1967). Montessori utilized her ideas concerning the importance of learning environments and children’s natural capabilities to create methods for early childhood education (Evans, 1971; Montessori, 1912/1964, 1914/1965, 1967).

Uniquely, Montessori’s method was not based on the existing theories of child development prevalent at that time (Goffin, 1994). Rather, contributing to Montessori’s work were the theories of associationistic psychology prevalent in the eighteenth and nineteenth centuries. Based on this view, formation of concepts resulted from associations between simple sensations (DeVries & Kohlberg, 1987; Montessori, 1967). This idea was inherent in the educational methods and materials developed by Jean Itard and Edouard Seguin, on which Montessori based many of her assumptions (Evans, 1971; Montessori, 1967).

Montessori was an astute observer of children who believed in the innate goodness and individuality of children. She wrote numerous books detailing her method and beliefs. Her writings are marked by five recurring themes: (1) the method represents a scientific approach to education in which observation is key; (2) the environment must be carefully prepared and adapted to children; (3) development is spontaneous in nature and moves from disorder to order; (4) order, within the child and the environment, is prerequisite to the child’s overall development; and, (5) liberty must be established for the child to free his life from impeding obstacles (Evans, 1971; Gettman, 1987; Goffin, 1994; Montessori, 1912/1964, 1914/1965, 1967; Torrence & Chattin-McNichols, 2000).

Montessori drew upon her background in medicine, and the fields of experimental psychology and pedagogical anthropology to advocate for the
development of scientific pedagogy (Goffin, 1994). This was a means of studying the development of children and their actions through direct, naturalistic observations and the start of making these observations central to the Montessori method and pedagogy in general (Gettman, 1987; Goffin, 1994).

Important to the Montessori method is the prepared environment that is based on the need of the child to make order of, and attach meaning to, his surroundings. The environment is both physical and psychological in nature. It takes into account the child as an active inquirer that interacts freely and spontaneously with the purposely-prepared environment. The Montessori method calls for a prepared environment that includes didactic materials that limit the need for adult intervention and encourages auto-education. The environment must correspond with the emerging needs of the child while allowing for spontaneous exploration (Montessori, 1912/1964, 1914/1965, 1967).

Montessori viewed education as assisting the mind with development (Montessori, 1967). Grazzini (as cited in Torrence & Chattin-McNichols, 2000) explains the Montessori model of development as consisting of four planes or periods of growth. Each plane lasts approximately six years, with preceding planes preparing the child for the one that follows. Montessori described the key characteristics that distinguish each plane as sensitive periods. Development was viewed as periods of increased sensitivity, with each sensitivity leading to new interests and skills (Lillard, 1972; Torrence & Chattin-McNichols, 2000). It is necessary remain aware of the natural drive of these sensitive periods and to prepare the environment accordingly. The first period of life, as described by Montessori, was seen to be the most active in terms of absorption of physical and social information thus promoting growth (Montessori, 1967).

According to Montessori (1912/1964, 1967), the child is born into a state of chaos, or disorder. Development and growth are viewed as making order out of this chaos. It is through work (i.e., purposeful and ordered activity) that the child is able to grow physically and psychologically. Ultimately the outcome of internal order is the child’s increasing ability to self-regulate and self-direct.

Montessori (1914/1965, 1967) saw children as not only constructing their own understanding of the world but also obtaining the ability to control their focus and actions. As a result, management in the Montessori classroom is not imposed by the
adult, but self-regulated by the children. This is accomplished through a gradual development of a sense of purpose that Montessori saw as coming from focused activity (Torrence & Chattin-McNichols, 2000). The ability to choose and use materials with a purpose in mind, the opportunity to auto-educate or guide one’s own learning, as well as the expectation to cooperate and interact with others, and to move about freely encourages self-discipline and mature autonomy (Montessori, 1912/1964, 1967).

**Areas of Differentiation**

**View of the child (Montessori).** Basic to Montessori’s (1949/1955) theory of education is the principle that the learning capacity of the child is fundamentally different from that of an adult. A child, as opposed to an adult, appears able to simply absorb, through activity and without effort, certain abilities and skills (Gettman, 1987; Montessori, 1949/1955). The child’s mind absorbs images and then processes, categorizes, and interprets them, fitting the concepts into existing schema (Goffin, 1994).

Like Rousseau, Pestalozzi, and Froebel before her, Montessori believed in the inherent goodness of children, as well as the spontaneous nature of their development (Evans, 1971). She observed that if the environment was prepared and presented to the child in the appropriate manner, and the child was given freedom to explore at his own pace, then a natural occurrence of learning would take place. Children given freedom, a carefully prepared environment, and an opportunity for active involvement would develop according to their own timetables and tendencies. The critical relationship in the Montessori method was between the child and the learning materials and the child’s interaction with those materials (Montessori, 1912/1964, 1914/1965, 1967).

**Role of the Teacher (Montessori).** Perhaps the most important underpinning of the teacher’s role is respect for the child. Montessori (1967) believed that children should be given the same respect that adults want for themselves. Only a child who is honored as an individual will respect others.

Montessori realized that her new model of education would require a new role for teachers, as well as the new title of directress. The term denoted facilitation as opposed to direct teaching. The directress’ major responsibility was to prepare the
environment to meet the needs of the children (Goffin, 1994). Teacher education remains an essential aspect of the Montessori method. Practical training in the use of didactic materials, observation techniques and interpretation, and the preparation and maintenance of the environment are viewed as essential for teachers (Montessori, 1912/1964, 1914/1965, 1967).

Rather than being a provider of knowledge, the teacher would be an observer of each child’s development. The Montessori teacher should be trained in human growth and development. She should possess a thorough knowledge of observational skills, which in turn enable her to match children’s developmental needs with suitable materials and activities (Montessori, 1912/1964, 1914/1965, 1967).

The directress serves as a resource to her students. She plays an active role in the initial connection between the child and the materials, promoting investigation and demonstrating specific lessons in the use of the tools. Lessons are well rehearsed in that they are exact, brief, and objective. Once the child demonstrates independent task behaviors, the teacher continues to observe, but does not intervene (Montessori, 1912/1964, 1965/1965, 1967).

The preparation and refinement of the learning environment are primary and essential tasks of the teacher. Insomuch as the environment is both physical and psychological in nature, the teacher’s responsibility reaches beyond materials but to the tone of the classroom as well. Most conducive to learning is a classroom that is calm, focused on the activities at hand, and respectful of all participants (Torrence & Chattin-McNichols, 2000).

Montessori (1967) saw children’s behaviors as innately driven; therefore, extrinsic rewards and punishment from external sources are seen as inappropriate and potentially harmful. Praise, assistance, or attention from the teacher is felt to interrupt the child’s innate learning routine. However, destructive acts result in the loss of privileges to use materials and are limited by the teacher.

**Resources/materials (Montessori).** Resources unique to the prepared environment are most recognizable as the didactic materials created by Maria Montessori. Her convictions concerning the role of the senses in learning led her to
develop these materials with the purpose of sensory education (Montessori, 1912/1964).

It is the design, rather than the materials themselves, which makes them important components of the Montessori classroom. The didactic materials isolate a particular concept and must be acted upon by the child (Montessori, 1964). Materials were designed to develop a child’s increasingly refined ability to differentiate characteristics such as color, size, etc. Auto-education, or control-of-error, is an important attribute. Use of the materials provides information to the child that is then used to refine his thinking, as well as providing freedom from dependency on adult feedback (Lillard, 1972; Torrence & Chattin-McNichols, 2000; Wolfgang, C. & Wolfgang, M., 1999).

In most cases the didactic materials progress from simple to complex, adding a degree of difficulty as the child progresses to the next experience. This allows for mastery before moving on to the next step. Children proceed at their own pace once they have received an initial lesson, as the goal is success and attaining independence as opposed to timely completion (Montessori, 1912/1964, 1914/1965, 1967).

Curricular emphasis (Montessori). Epstein et al. (1996) reported that the ultimate goal of Montessori education is to “help children become competent, socially conscious citizens of the world who respect themselves and others” (p. 46). This goal serves as a guide for Montessori curriculum. Over the history of the approach, curriculum has continued to evolve and is currently divided into four areas: competence in practical life activities, development of the senses, conceptual or academic development, and character development (Montessori, 1912/1964, 1967).

Practical life activities are concerned with self-management skills for children, care of their environment, and lessons in social living. Children concentrate on one activity and learn to follow a sequence from beginning to end and work toward a final goal, thereby gaining independence through self-directed activities. The child participates in life-like activities in a child-sized setting. Activities involve such things as self-care (i.e., tooth-brushing, hand washing, dressing); care of the environment (i.e., cleaning, gardening); life skills (i.e., sewing, cooking, pouring); and social living (i.e.,
saying “please”, “thank you”, setting a table) (Gettman, 1987; Montessori, 1912/1964, 1967).

Once a child has mastered the exercises of practical life he is deemed ready to begin the sensory portion of the Montessori method (Evans, 1971). In keeping with Montessori’s (1912/1964, 1914/1965) views concerning the role of the senses in learning, the child begins exploration of the didactic materials. Experience with the materials promotes sensory discrimination skills, concepts of form, techniques of observation, and decision-making abilities. Visual, tactile, auditory, baric, taste, and olfactory senses are all educated via the use of the didactic materials. Evans (1971) identified three objectives for Montessori’s sensory education: (1) ability to recognize and match identities; (2) ability to recognize contrasts and extremes in a series of objects; (3) ability to discriminate among items similar in shape, color, weight, and texture.

Language development in the Montessori classroom is a result of interaction with the environment. While there are no direct lessons in language, exchanges between the children, the use of exact terminology by the teacher, sharing of songs and stories, and didactic materials developed for literacy experiences all provide context for literacy development (Montessori, 1912/1964; Torrence & Chattin-McNichols, 2000).

Montessori (1912/1964, 1914/1965) believed that the practical life activities, with their sequential order and attention to detail, create a foundation for future mathematical concept formation. In addition, development of mathematical concepts results from the use of the didactic materials in that the child explores, compares, sorts, and classifies. Materials are a physical demonstration of mathematical concepts, progressing from concrete to abstract and targeting one concept at a time.

Artistic expression and music are important aspects of the Montessori (1912/1964) method. Attention to aesthetics is found in the learning environment, the sensory training activities, and the didactic materials developed by Montessori. Inclusion of cultural subjects in the classroom, such as geography and science, reflects Montessori’s philosophy of the interrelatedness of all living and nonliving things. Daily contact with the natural world and inclusion of objects representing other cultures and
cultural celebrations provide children with opportunities to form questions and seek answers (Torrence & Chattin-McNichols, 2000).

The environment of the Montessori classroom encourages cooperation and interaction among children. There are few formal group activities, instead many one-on-one exchanges between children can be observed. Montessori (1967) held that these types of interactions, as well as the practical living and sensory education experiences, encouraged the development of characteristics needed to be a contributing member of a group. Experiences that promote responsibility training such as caring for animals and plants are reality based and are important to character development.

**Assessment (Montessori).** In the Montessori classroom, emphasis is placed on cooperation as opposed to competition in completing tasks or outperforming others (Evans, 1971). The use of materials that control for error eliminate the importance of right and wrong answers by design (Wolfgang, C. & Wolfgang, M., 1999). Assessment of children in the Montessori approach reflects the significant role of the teacher as an observer of children and children’s behaviors. Observations assist the teacher in noting a child’s progress, or lack of, as well as when and what intervention is required. In some programs where more formal types of evaluation are required (i.e., school systems), authentic forms of assessment such as portfolios, checklists, and anecdotal records are seen as being compatible with the Montessori method (Torrence & Chattin-McNichols, 2000).

**Learning environment (Montessori).** Montessori’s respect for children and her belief that the child’s mind absorbs his surroundings, led her to develop a uniquely prepared environment that was adapted to the child. The ideal Montessori environment is scaled to the child’s size and functions realistically (Montessori, 1912/1964, 1914/1965, 1967). Lillard (1972) identified six essential characteristics of a Montessori environment: (1) freedom, (2) structure and order, (3) reality and nature, (4) beauty and atmosphere, (5) Montessori learning materials, and (6) community life.

Montessori (1967) believed that a child strives for independence. If given an appropriate environment and freedom to act upon that environment, a child will naturally grow. The child must have the opportunity to choose among the materials and experiences offered in order to develop internal focus and self-discipline.
Children seek cognitive and physical order in their world. Therefore, the external environment should promote the organization that the child seeks. The classroom should provide a routine schedule and predictability in expectations. In addition, materials should be organized according to the child’s needs and lessons must be exact and concise as well (Montessori, 1912/1964).

In keeping with the view that a child’s cognitive processes develop through sensory experiences and a foundation in real-world experiences, Montessori (1967) noted that the child’s world should be grounded in reality. Materials that are available to the child should be authentic and reality-based; opportunities for dramatic play are deemed to be fantasy, which does not promote self-discipline or work ethic. Furniture and items used in practical life exercises must be child-sized and based on objects used in the adult world. Montessori’s observations indicated the child’s interest in the natural world. Inclusion of plants and animals in the learning environment is standard in the Montessori classroom (Torrence & Chattin-McNichols, 2000).

The aesthetic quality of the environment was important to Montessori (1912/1964). She describes the display of artwork in the classroom and the functional, yet attractive, design of the furniture as appropriate for the learning environment. Further environmental design attributes emphasize simplicity, orderliness, cleanliness, and availability of materials to children (Evans, 1971; Gettman, 1987).

Perhaps the most notable elements of the Montessori learning environment are the specially constructed didactic learning resources. The objects are simple by design and made of quality materials such as wood. In general, Montessori materials are designed to prepare the child for concepts that are increasingly more complex (Torrence & Chattin-McNichols, 2000).

The teacher in the Montessori classroom is an observer and facilitator of children’s learning as such most of the interactions are between the children themselves. Classes are multi-age, thus promoting peer teaching through observation or mediation. Cooperation rather than competition is an outcome of the use of materials that are autoeducational in nature. The daily schedule allows for large blocks of uninterrupted work time; this allows time for extended exploration as well as socialization and reflection (Montessori, 1967).
Summary

Early childhood curricular approaches are representations of essential philosophical and pedagogical components. Together these establish a model for the education of young children with specific goals and objectives. Four predominant curricular approaches and four specific models of implementation were identified and six areas of differentiation for each model were discussed. From this review of the literature, belief statements were derived that represented each model according to the six areas of differentiation.

Beliefs

Research regarding teacher thinking is abundant as was seen in Clark and Peterson’s (1986) meta-analysis addressing teacher thought. It has, however, been suggested that an additional perspective is needed to better understand teacher behaviors, a perspective that deals with the things and the ways that teachers believe (Clark, 1988; Kennedy, 1997; Nespor, 1987; Pajares, 1992). Brown (1968), Dewey (1933), Rokeach (1968) and others (Clark & Peterson, 1986; Nisbett & Ross, 1980; Pajares, 1992; Spodek, 1988) indicated that teacher beliefs are the best indicators of classroom decision making and behaviors.

Rokeach (1968) defined a belief as “…any simple proposition, conscious or unconscious, inferred from what a person says or does, capable of being preceded by the phrase “I believe that….“ (p. 113). Dewey (1933) wrote that a belief “covers all matters of which we have no sure knowledge and yet which we are sufficiently confident of to act upon and also the matters that we now accept as certainly true…” (p. 6). Sigel (1985) defined beliefs as “mental constructions of experience—often condensed and integrated into schemata or concepts” (p.351). He indicated that an individual deems his beliefs as truth and that these beliefs in turn guide behavior. Pajares (1992) suggested that one’s beliefs are based on his evaluation and judgment, whereas, his knowledge is based on objective fact. The content of a belief may describe the construct or object of the belief as good or bad, true or false, correct or incorrect, or advocate a certain course of action (Rokeach, 1968). Pajares (1992) found that socially,
and culturally, beliefs “provide elements of structure, order, direction and shared values” (p.318), and, on a personal level, beliefs reduce dissonance and confusion.

Rokeach (1968) posited that a belief has three components: a cognitive component, as it represents a person’s knowledge, positive or negative, good or bad; an affective component, in that the belief is capable of arousing affect of varying intensity; and a behavioral aspect demonstrated by actions motivated by the belief. Pajares (1992) wrote that “beliefs are instrumental in defining tasks and selecting the cognitive tools with which to interpret, plan, and make decisions regarding such tasks; hence they play a critical role in defining behavior and organizing knowledge and information” (p. 325). A person’s behavior in any particular situation greatly depends upon how he perceives that situation; the perception of any given situation is interpreted by the beliefs that one holds (Brown, 1968; Nisbett & Ross, 1980; Rokeach, 1968).

Green (1971) proposed that beliefs never occur in isolation; rather, they are part of a system or a set of beliefs. These systems have a quasilogical structure in that some beliefs are derived from other beliefs held by an individual, while other beliefs are primary in nature. It is not the content of the beliefs that determines the logical order, rather the relationship among the beliefs. When beliefs are held without regard to evidence or contrary to evidence, or apart from good reasons, those beliefs are said to be nonevidential. These beliefs are accepted, not because of evidence, but because of the fit with beliefs that one already holds; an individual may not be able to provide adequate reasons for that belief or be able to defend the belief. However, evidentially held beliefs are those that are defensible, have been examined and are supported by evidence.

Lasley (1980) indicated that, in general, beliefs endure, unaltered, unless deliberately challenged. Nisbett and Ross (1980) concurred citing that beliefs are highly resistant to change and that, generally, individuals do not seek strategies that assist in the strengthening of defensible beliefs or in the alteration or rejection of indefensible beliefs. Rokeach (1968), like Green (1971), proposed that the most central beliefs are those that have connections with other beliefs, are shared by others, are connected to one’s identity, and are formed early in life; these beliefs are the most enduring. Individuals gain their identity from the beliefs that they hold, thereby indicating an
emotional factor that makes beliefs even more stable (Nisbett & Ross, 1980; Pajares, 1992).

Teaching has to do with the formation of beliefs—or what we believe, and the logic of how those beliefs are held—or how we believe. Green (1971) explained that teaching is the effort to reconstitute belief systems, in which the number of evidential beliefs are maximized and nonevidential beliefs are minimized. Therefore, it is the role of teaching, and more specifically, teacher education to examine beliefs about teaching and make these beliefs defensible.

**Preservice Teachers Beliefs**

Lortie (1975) and others (e.g., Feiman-Nemser & Remillard, 1996; Kennedy, 1997; Marsh, 2001) asserted that the biography of preservice teachers is essential to understanding what these students bring to teacher training. The typical teacher education student is female, Caucasian, and hails from a rural town or the suburbs (Feiman-Nemser & Remillard, 1996; Isenberg, 2001). Although general in nature, these demographics provide insight regarding some of the experiences that have shaped the prospective teacher and the individual’s beliefs. Many students, especially women, choose teaching because of the nurturing and caring aspects of the profession. They view teaching as an extension of parenting, emphasizing nurturing over intellectual development, and therefore assume that preservice education has little to teach them (Feiman-Nemser & Remillard, 1996; Kennedy, 1997). The culturally insular nature, or homogeneity, of those in teacher training may indicate limited experiences with diverse groups thereby resulting in stereotypical beliefs pertaining to education (Feiman-Nemser & Remillard, 1996; Hollingsworth, 1989).

Many researchers (e.g., Feiman-Nemser & Floden, 1986; Feiman-Nemser & Remillard, 1996; Goodlad, 1982; Kennedy, 1997; Lortie, 1975; Raths, 2001; Spodek, 1988; Wright & Tuska, 1967; Zeichner, 1986) proposed that, in addition to biography, experiences prior to formal training are the most influential in the development of beliefs and perspectives regarding teaching. What appears over time as a persistence of teaching methods and beliefs about teaching and children may be explained by a person’s early socialization into the teaching profession (Zeichner, 1986). Bruner
(1996) concurred, citing that individuals hold ‘folk pedagogies’ about teaching and learning that reflect one’s human tendencies and deeply ingrained beliefs. Three areas have been noted in the literature as having an influence on preservice teachers prior to enrollment in preparation programs, and it is proposed that these areas serve as a means of socialization into the teaching profession.

The first area of influence cited was the ‘evolutionary’ view regarding the socialization of preservice teachers. According to this view, humans have an ingrained tendency to correct one another, tell others what they know, and to supply answers. This tendency is seen in families and in classrooms with children being taught by parents and teachers. Children learn to be teachers through experiences and observations of family dynamics: parents teaching children and teacher interactions with students (Feiman-Nemser, 1983).

A second area of influence on preservice teachers was explained through the psychoanalytic approach as explored in the work of Wright and Tuska (1967). This perspective explored how the quality of children’s relationships with important adults such as parents and teachers, and the emulation of those adults later in life, affected an individual’s beliefs as a teacher. These relationships served as models for future interactions between adults and children (e.g., teacher and student). In addition, it was found that a preservice teacher may closely identify with a teacher from his or her childhood and may consequently imitate that teacher when teaching (Zeichner, 1986).

The third area of influence reflected the development of beliefs and perspectives concerning teaching through an “apprenticeship of observation” that occurs as a result of thousands of hours spent in classrooms in thirteen plus years as a student (Lortie, 1975). Students internalize the models provided during those many years and consequently develop teaching styles that reflect what they themselves have experienced.

In a study of preservice teachers conducted by Lasley (1980), several general beliefs were evident including students’ perceptions that teacher education courses did little to prepare them for real classroom experiences and that people who like children were effective teachers. Additional research concerning preservice teachers’ beliefs indicated that they enter training with ideas about teacher characteristics, student
behavior, subject matter, and learning (Clark, 1988; Feiman-Nemser & Remillard, 1996; Lasley, 1980; McDiarmid, 1990). Zeichner (1986) noted that new teachers often find initial experiences difficult, in that the techniques, strategies, and ideas gleaned from role models may not have been addressed in programs of teacher education.

Kennedy (1997) found that preservice teachers enter their training with images of themselves as teachers and with high expectations regarding success. Some of these beliefs are compatible with the educational outcomes that teacher training programs have identified for preservice teachers, while other beliefs are more traditional in scope; some of which prove to be inappropriate (Lortie, 1975). Pajares (1993) and Clark (1988) reported that, in general, beliefs held by those entering teacher education programs represent the status quo rather than state-of-the-art practices, which is ultimately reflected in classroom practices. These students may enter the educational system as teachers that may be unwilling, or unable, to serve as change agents or participate in school reform in that they adapt new materials and activities into existing belief systems regarding teaching and learning (Kennedy, 1997; Pajares, 1993).

Unlike students entering other fields of study, such as medicine or law, who have little or no familiarity with the area of study, preservice teachers are insiders who have had extensive experiences in the classroom and enter the field with established beliefs regarding teaching (Lortie, 1975; Pajares, 1993). The established beliefs of the teacher education student serve as a frame of reference through which information and ideas are processed (Clark & Peterson, 1986; Goodman, 1988; Pajares, 1993; Rokeach, 1968). However, efforts to incorporate new information into existing belief systems may prove very difficult. Anderson and Holt-Reynolds (1995) reported that these students may have beliefs regarding education that are contrary to the ideas that they may encounter in teacher education which only serves to hinder the preparatory experience.

Recently, teacher beliefs have garnered the attention of organizations such as the Association of Childhood Education International (ACEI), the Interstate New Teacher Assessment and Support Consortium (INTASC), and the National Council for the Accreditation of Teacher Education (NCATE). These groups guide the development and accreditation of teacher education programs, and have emphasized that in addition to specific knowledge and skills, teachers need to possess certain dispositions to be
effective practitioners. These dispositions are defined as the summary or trend of actions guided by beliefs (Katz & Raths, 1985), and are viewed as “essential contributors, if not determinants, of successful teaching” (Bredekamp, 1994, p.61). An examination and knowledge of underlying beliefs is essential to strengthening targeted dispositions (Raths, 2001).

Preservice teachers’ beliefs have been developed as a result of experiences as a student and through a process of socialization to teaching throughout his or her life. Three main areas of socialization are found in the literature and include the evolutionary view, the psychoanalytic approach, and an apprenticeship of observation. Through these formative experiences the preservice teacher has developed expectations about himself, or herself, as an educator and about his or her students. These beliefs serve as a frame of reference and a lens through which all aspects of preservice training are viewed.

Beliefs Instruments

Many instruments have been developed that aim to explore inservice teachers’ beliefs concerning various ideas. While some tools target specific practitioners, others measure beliefs in more general terms. Studies regarding preservice teachers’ beliefs are somewhat more limited and often utilize a case study approach rather than instruments such as inventories or questionnaires.

An early effort at measuring a teacher’s belief system was the “This I Believe” Test (TIB) (Harvey, 1965). The intent of the instrument was to assess the degree to which a teacher’s belief system ranged from concrete to abstract and the resulting effect on the classroom atmosphere and teaching methods (Harvey, 1965, 1967). Beliefs considered more concrete were seen as reflecting instructional approaches that were more structured, more invariant, and less flexible (Harvey, 1965). The TIB instrument required subjects to write answers to items such as “This I believe about the American way of life…” and “This I believe about religion…” Researchers then analyzed these answers and classified a subject’s beliefs into one of four systems ranging from concrete to abstract. In addition to the TIB, Harvey created the Conceptual Systems Test (CST) as an objective measure of teacher beliefs. The Conceptual Systems Test
consisted of statements that corresponded to the major characteristics of the four levels of concreteness and abstractness as measured by the This I Believe (TIB) instrument.

The Preschool Teachers’ Beliefs Inventory (Kaufman, 1975) was created to measure the degree to which a preschool teacher’s beliefs reflected Piaget’s epistemological belief system. The instrument contained 24 items derived from Piaget’s texts. Subjects classified statements into one of four categories representing constructivist epistemology: (1) nature of knowledge, (2) nature of knowing, (3) nature of representation and memory, and (4) nature of development. Using a six-point Likert scale, respondents rated statements from strongly disagree to strongly agree. High scores indicated strong adherence to Piagetian beliefs.

The Educational Beliefs System Inventory (EBSI) and the Educational Practice Belief Inventory (EPBI) were developed to provide a philosophical profile of educators through their agreement with statements representing three distinct educational camps: Behavioristic psychology – Essentialism philosophy, Cognitive psychology – Experimentalism philosophy, and Humanistic psychology – Existentialism philosophy (Dobson, R., Dobson, J., & Kessinger, 1980). Responses to statements in specific areas corresponding to beliefs and practices were classified as adhering to one of the three philosophies. The Educational Beliefs System Inventory (EBSI) consisted of seven subtests with a total of 69 items. Using a five-point Likert scale, respondents indicated their level of agreement and disagreement to statements representing the three philosophies. Scoring consisted of totaling the scores for the statements representing each philosophy under each subtest and determining a score for each philosophy. The lowest score indicated a greater degree of agreement. Scoring for the 69-item Educational Practice Belief Inventory (EPBI) followed the same procedure.

Smock (1982) developed an instrument to identify the philosophical beliefs of early childhood educators. Statements describing six specific areas of differentiation for each of the three philosophies: psychodynamic, behaviorist, and Cognitive Development were gleaned from relevant literature. Subjects marked the items with which they most strongly agreed. An individual’s philosophical domain was determined by counting the number of statements marked for each theory.
Charlesworth, Hart, Burts, and Hernandez (1991) developed a questionnaire based on the National Association for the Education of Young Children’s (NAEYC) guidelines for developmentally appropriate practices. The questionnaire focused on the beliefs and practices of kindergarten teachers regarding developmentally appropriate practices (DAP). Researchers aimed to identify teachers who valued and demonstrated those practices. The questionnaire was composed of two parts: the Teachers Beliefs Scale (TBS) with 30 items regarding teachers’ beliefs, and the Instructional Activities Scale (IAS) containing 31 items designed to register actual instructional practice. Items were measured on five-point Likert scales. Higher average scores indicated a stronger belief in developmentally appropriate practices.

Building on the work of Charlesworth et al. (1991), Smith (1992) developed the Primary Teacher Questionnaire (PTQ). The instrument examined the beliefs of primary grade teachers in terms of traditional practices and developmentally appropriate practices. Teachers were asked to respond to 42 descriptive statements regarding practices using a four-point Likert-type scale. Scores for statements keyed as traditional and those keyed as developmentally appropriate were totaled with the higher score being indicative of belief.

Rusher, McGrevin, and Lambiotte (1992) looked at the similarities and differences between kindergarten teachers’ and their principals’ belief systems in the areas of child development, early childhood curriculum, and teaching methodology. Researchers developed a 56-item survey consisting of demographic data and 21 belief statements about educational practices concerning young children. Using a five-point Likert scale, respondents indicated their opinion regarding each item twice—once as it pertained to their own beliefs, and then as it pertained to the school district’s identified philosophy. Three belief factors emerged from the study: academic, child-centeredness, and activities issues.

In addition to the development and use of scales, inventories, and questionnaires, many researchers have used the case study approach to explore teachers’ beliefs. Spodek (1988) conducted a study consisting of observations and interviews to explore how the implicit theories of early childhood teachers drive their practices.
Using a case study approach, Porter and Potenza (1983) examined the beliefs and practices of preschool teachers in relation to three theoretical orientations: maturationist, behaviorist, and cognitive developmentalist. Through observations and unstructured interviews, these researchers explored the rationales involved in practices and the role of developmental theory in the preschool classroom.

Interviews and observations were the basis of Wing’s (1989) study that examined the relationship between teacher beliefs and preschool children’s beliefs about reading and writing. The researcher interviewed a director/teacher and ten children from each of two philosophically different preschool programs. Observational data was collected regarding the literacy materials available, methods used, and experiences of the children. Results indicated that preschool children’s conceptions about reading and writing reflected the philosophy of the program in which enrolled.

**Studies of Preservice Teacher Beliefs**

A review of the literature indicated a growing interest in the beliefs of preservice teachers (Anderson & Bird, 1994; Brown & Cooney, 1982; Clark & Peterson, 1986; Feiman-Nemser & Remillard, 1996; Hollingsworth, 1989; Kennedy, 1997; Raths, 2001; Pajares, 1992, 1993). Much of the literature focused on challenging or changing of beliefs rather than the identification of beliefs (Anderson & Holt-Reynolds, 1995; Bird, Anderson, Sullivan, & Swidler, 1992; Bolin, 1990; Feiman-Nemser & Buchmann, 1986; Florio-Ruane & Lensmire, 1990; McDiarmid, 1990). Many studies explored these beliefs through case studies, interviews, and observations. The development and use of instruments (surveys, inventories, questionnaires) to explore the beliefs of preservice teachers’ appeared to have been used to a limited extent.

Anderson and Bird (1994) used a case study approach to compare the responses of prospective teachers to three cases of teaching. Students analyzed videotapes of practicing teachers, responded to accompanying articles, and explored their beliefs in relation to what had been observed. Through this process, researchers hoped to stimulate preservice teachers’ thinking about teaching practices that were in conflict to known practices. Rather than altering beliefs, students tended to interpret case studies through the lens of the beliefs that were already held.
Mayer and Goldsberry (1987) conducted a hypotheses generating study in which they examined how beliefs and practices developed in relation to one another during the student teaching experience. Using observations, semi-structured interviews and journaling, the researchers examined the beliefs of two student teachers prior to and during internship. As a result of the research, seven hypotheses and areas for further examination were cited. Included were the hypotheses that the beliefs of student teachers’ would not to be significantly altered when there was consistency between the philosophical views encountered in the experience and the student teacher’s beliefs, and that a student teacher’s beliefs served as a guide for practices. Researchers offered that student teachers start and end their internship with a set of idiosyncratic ideas that beliefs evolve over the course of the student teaching experience, and that beliefs do not become more custodial and less humanistic over the course of the experience. While the study was small in scope, the authors suggested that further research regarding student teaching and beliefs is warranted in order to develop more effective teacher education programs.

In a study conducted by McDiarmid (1990), teacher education students observed a teacher’s non-traditional practices in teaching mathematics to children. Through questioning, discussion, and practice teaching, the prospective teachers explored their beliefs about the teacher’s role, pedagogy, learning, learners, subject matter, and learning to teach. While some of the preservice teachers involved in the study did question their understandings and beliefs, they were unable to transfer the insights to other situations. The other prospective teachers were intent on keeping beliefs intact; rather than questioning their own ideas and claimed that differences were due to the fact that children involved in the math classes were gifted and that the setting was atypical.

Weinstein (1989) conducted a study pertaining to the beliefs of preservice teachers regarding what it means to be “a really good teacher.” Using a questionnaire consisting of open-ended and fixed-response items, preservice teachers identified characteristics of good teaching as well as their own characteristics as students and potential teachers. The researcher coded and grouped responses according to similar themes and categories of beliefs. In addition, the instrument was administered to
inservice teachers and the outcomes were compared. Preservice and inservice
teachers, alike, emphasized interpersonal and affective variables rather than academic
characteristics when describing good teaching.

The nature of preservice teachers’ beliefs about mathematics, writing, and
teachers’ responsibilities toward diverse learners was the focus of Schmidt and
Kennedy’s (1990) study. Students of teacher education responded to statements that
reflected dichotomous views between content and process in teaching. Using a seven-
point scale, participants indicated levels of agreement or disagreement with each
statement. Responses were compared to those of first-year and experienced teachers.
Patterns of agreement or disagreement within a set of items indicated patterns of belief.
Researchers reported that while more experienced teachers had different patterns of
beliefs than preservice teachers, they were not homogeneous in those beliefs,
suggesting that teachers, preservice and inservice, form their beliefs in isolation.

Research conducted by Brousseau, Book, and Byers (1988) examined the
beliefs of entering and exiting preservice teachers at Michigan State University (MSU)
and beliefs of experienced teachers. Students responded to the Educational Beliefs
Instrument (EBI) designed to reflect the five areas of students, curriculum, social milieu,
teachers, and pedagogy. The 60 statements that comprised the instrument were
contributed by individual faculty members and committees, which reflected the
importance of beliefs particular to teacher education at MSU. Respondents indicated
the extent of their agreement with the statements using a five-point Likert scale and
researchers identified patterns of belief. While a general model explaining group
differences proved difficult to develop, an analysis of belief patterns indicated that,
overall, preservice teachers’ beliefs were more optimistic than those of experienced
teachers.

File and Gullo (2001) examined the similarities and differences in early childhood
and elementary education preservice teachers’ beliefs about classroom practices in the
primary grades. Participants completed the two-section Beliefs about Primary Grades
Curriculum and Teaching Survey to indicate their beliefs concerning the content of
curriculum, teaching strategies, guidance/discipline, classroom activities, and
assessment. Researchers based the scales on the Primary Education Statement
published by National Association for the Education of Young Children (NAEYC). The first section required respondents to address statements about teaching practices using a five-point Likert scale. The second section addressed preservice teachers' beliefs about the appropriateness of a range of instructional activities by indicating how often the activities should take place in the classroom. Higher scores on the two scales indicated beliefs consistent with NAEYC's statement about primary teaching. Results of the study indicated that at the end of the program of study, preservice teachers in early childhood education favored a more child-centered curriculum with less frequent use of teacher-directed activities than did their elementary education counterparts. Those in the early childhood education preparation program favored classroom practices more in line with NAEYC guidelines for developmentally appropriate practices.

**Summary**

The exploration of teachers' beliefs has become a focus of numerous research studies. While much of the research has as its focus the challenging and changing of beliefs, the initial identification of those beliefs is essential to any further discussion. The identification of the beliefs held by preservice teachers is important to the field of teacher education in that these beliefs provide the lens through which these students view their training. Researchers have used various methodologies in the identification of beliefs. These include case studies, interviews, and observations, as well as the limited development and use of instruments such as inventories and surveys.
CHAPTER 3

METHODOLOGY AND PROCEDURE

The purpose of this study was to develop and field test an instrument that provides a means of identifying a preservice teacher’s predominant curricular belief in the area of early childhood education. This chapter describes the methods that were used to develop the Early Childhood Curricular Beliefs Inventory (ECCBI) including methods for exploring the validity and reliability of the instrument.

The literature was reviewed to determine the prevailing curricular approaches used in early childhood education. From the review, four major theoretical bases emerged and four curricular approaches were identified: Developmental Interaction approach implemented as the Developmental Interaction model; Behavioral approach implemented as the Direct Instruction model; Cognitive Developmental approach implemented as the HighScope model, and the Sensory Cognitive approach implemented as the Montessori method. Further analysis of the literature indicated areas in which curricular approaches differed in terms of pedagogical methods and structured characteristics (Evans, 1982, Mayer, 1971; Smock, 1982; Spodek & Brown, 1993; Wolfgang, C. & Wolfgang, M., 1999). For the purposes of this study, six areas of differentiation were considered: the view of the child, role of the teacher, resources utilized, curricular emphasis, assessment methodology, and characteristics of the learning environment.

Development of the Inventory

The Early Childhood Curricular Beliefs Inventory (ECCBI) was developed through procedures that evaluated the content validity of identified statements, explored the criterion and construct validity, and assessed the internal reliability of the instrument.
Gauging the content validity consisted of classification and sorting procedures and subsequent factor analyses to further refine the ECCBI.

**Classification**

Statement classification served to verify the literature review as well as establish content validity by examining the ability of the belief statements to accurately describe a particular curricular approach and specific area of differentiation. The Early Childhood Curricular Beliefs Inventory (ECCBI) was constructed with the assistance of a panel consisting of three experts in the area of early childhood education. These experts are faculty of a major research university and are recognized for their theoretical and practical expertise in the area of early childhood education.

One hundred eighty-two belief statements (see Appendix A) were derived from the relevant literature. Statements described the six areas of differentiation: view of the child, role of the teacher, classroom resources, curricular emphasis, assessment, and learning environment according to the four curricular approaches and associated curricular models: the Developmental Interaction approach implemented as the Developmental Interaction model, the Behavioral approach implemented as the Direct Instruction model, Cognitive Developmental approach implemented as the HighScope model, and the Sensory Cognitive approach implemented as the Montessori method.

The panel of experts classified the belief statements as representing one of the four curricular models: Developmental Interaction, Direct Instruction, HighScope, Montessori, or NI (not identified). Statements were recorded on an index card; three copies of each card were prepared and color-coded according to expert. The experts were instructed to read each statement and to classify the statement as one of the following: Developmental Interaction, Direct Instruction, HighScope, Montessori, or NI-Not Identified. Experts placed the card in a corresponding container labeled to represent each of the four curricular models and one as “NI”, or not identified (see Appendix B).

Upon completion of the classification of the statements by the panel, the researcher analyzed the results for total concurrence among the experts regarding the classifications. One hundred forty-one items received complete consensus of the panel and were included in the next phase of validation -- the sorting procedure.
Sorting

Statement sorting served to identify the most descriptive statements for each curricular approach by area of differentiation. The procedure provided further validation of the statements derived from the literature by examining the accuracy of items to represent a curricular approach in terms of each area of differentiation: view of the child, role of the teacher, resources, curricular emphasis, assessment, and learning environment.

To prepare the items for sorting by the panel of experts, the belief statement cards derived from the classification procedure were grouped by area of differentiation and by curricular approach. For example, all belief statement cards regarding the view of the child that described the Developmental Interaction approach were clustered, as were cards for each area of differentiation by curricular model. Panel members were instructed to sort statements, as related to the area of differentiation, according to each item’s descriptiveness for the curricular model that it represented. Panel members sorted cards into categories of “most”, “somewhat”, and “least” descriptive (see Appendix B). Ninety-eight statements were sorted as most descriptive. From these items, three statements from each area of differentiation by curricular model were drawn at random and a 72-item instrument was prepared.

Instrument Organization

The 72-item Early Childhood Curricular Beliefs Inventory (ECCBI) consisted of eighteen statements describing each of the four curricular models—three items describing each of the six areas of differentiation for each model. The instrument was organized into six sections representing the areas of differentiation. A Likert-type scale (Likert, 1952), ranging from 1 (complete agreement) to 5 (complete disagreement) was applied to each item with respect to the response to “This is what I really believe” regarding the statement. Possible response categories ranged from 1) complete agreement; 2) moderate agreement, 3) uncertain, 4) moderate disagreement, and 5) complete disagreement (see Appendix C).

Scoring

Scoring of the instrument included recording the Likert-scale responses for each statement to a score key divided into four sections, or subtests, representing each
curricular model (see Appendix D). Scores for each section were added and compared. The subtest with the lowest score was deemed most representative of the respondent’s curricular belief.

Participants

Field testing of the instrument was conducted with two groups of participants – practitioners and preservice teachers. Results of the initial field-testing with practitioners explored the content, criterion, and construct validity of the Early Childhood Curricular Beliefs Instrument (ECCBI) as well as the internal reliability. Results of the subsequent field-test of the instrument with preservice teachers were also used to explore the internal reliability of the instrument. Demographics regarding both groups of participants are summarized in Table 3.

Participants for Field-Test 1

Participants for the first field test were practitioners who had received training in one of the four identified curricular models: Developmental- Interaction, Direct Instruction, HighScope, and Montessori. Through early childhood program administrators (principals, a district director of prekindergarten programs, and a director of a school) the researcher identified practitioners trained in the models. Twenty practitioners, five trained in each of the four curricular models (Developmental Interaction, Direct Instruction, HighScope, and Montessori), were identified as participants for the preliminary field test of the Early Childhood Curricular Beliefs Inventory (ECCBI).

Participants representing the Direct Instruction model were identified by the school principal and reading specialist and taught kindergarten in a rural public school district located in north Florida. Each of the five practitioners had received training by a specialist at the district level in SRA and Open Court direct instruction models. Teachers were using both math and reading programs utilizing direct instruction methodology. In addition, a reading coach housed in the school, provided modeling and on-going training in the direct instruction model. Each practitioner had used the approach for at least one year in his/her classroom.
Practitioners using the HighScope model were teachers in a district-wide public prekindergarten program located in north Florida in which all district sponsored programs required the use of HighScope. Practitioners were identified by the district coordinator of prekindergarten programs. The five teachers had received HighScope training through district sponsored and HighScope sponsored training. All practitioners taught in programs that were HighScope certified and each had at least two years of experience using the model.

Participants representing the Montessori aspect of the study were teachers in a privately owned and operated school in central Florida. Teachers were identified by the school administrator. The school was affiliated with the American Montessori Society and was a member of the International Montessori Council. The five teachers included in the study were all 3-6 American Montessori Society credentialed. Each practitioner had implemented the Montessori Method for a minimum of three years.

Practitioners identified as using the Developmental Interaction model were teachers in a county located in north Florida. Practitioners included four from private kindergarten programs and one from a public kindergarten program. Program administrators identified each participant as having used a thematic approach with social and whole child emphasis; block play was used extensively in each of the classrooms. Teachers self-reported the same emphases. All participants held at least a Master’s degree in early childhood education and had a minimum of eight years of experience using this type of curriculum.

**Participants for Field-Test 2**

Participants for the second phase of field-testing were preservice teachers in the areas of early childhood education and elementary education. The 141 preservice teachers were enrolled in one of three undergraduate initial certification programs. Twenty-eight students (20%) were enrolled in an early childhood education (age three through grade three) teacher preparation program at a large state university, 47 students (33%) were enrolled in an elementary education (kindergarten through sixth grade) teacher preparation program at the same institution, and 66 students (47%) were
Table 3

*Descriptive Data of Participants: Practitioners (N=20), Preservice Teachers (N=141)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Practitioners n (%)</th>
<th>Preservice Teachers n (%)</th>
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<td>25-30</td>
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<tr>
<td></td>
<td>36-40</td>
<td>6 (30.0)</td>
<td>2 (1.5)</td>
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<td></td>
<td>41-45</td>
<td>8 (40.0)</td>
<td>4 (2.8)</td>
</tr>
<tr>
<td></td>
<td>50 +</td>
<td>3 (15.0)</td>
<td>1 (0.7)</td>
</tr>
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<td>28 (19.9)</td>
</tr>
<tr>
<td>Degree</td>
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<td>13 (65.0)</td>
<td>2 (1.4)</td>
</tr>
<tr>
<td></td>
<td>Bachelor’s</td>
<td>7 (35.0)</td>
<td>139 (98.6)</td>
</tr>
<tr>
<td>Institution</td>
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<td>--</td>
<td>66 (46.8)</td>
</tr>
<tr>
<td></td>
<td>State</td>
<td>--</td>
<td>75 (53.2)</td>
</tr>
</tbody>
</table>

Participants were not previously certified to teach in any area of study. Descriptive statistics regarding the two sample groups are summarized in Table 1 on page 95.
Field Testing

Prior to conducting the study, the researcher applied to the Florida State University Human Subjects Committee and received permission to conduct the study on February 6, 2003 (see Appendix E).

Field-Test 1

The first field test of the Early Childhood Curricular Beliefs Inventory (ECCBI) was conducted by administering the instrument to twenty practitioners, five representing each of the four early childhood models identified in the study. After a preliminary telephone interview with identified practitioners, in which the researcher confirmed administrator-reported training and a commitment to participate in the study, the instrument with instructions, an informed consent form, and a demographic questionnaire were mailed to the participants with a stamped return envelope (see Appendix F). For this phase of the study, participants were instructed to judge each statement from the viewpoint of “This statement reflects the curricular approach in which I was trained.” The researcher numerically coded the instruments to identify the participants for recording purposes.

Field-Test 2

One hundred sixty-seven preservice teachers, enrolled in one of three initial certification programs, participated in the second field test. With consent of instructors, the researcher met with participants during scheduled class periods at which time the preservice teachers completed the informed consent form, a demographic questionnaire and the Early Childhood Curricular Beliefs Inventory (ECCBI). Participants were instructed to respond to the statements from the viewpoint of “This is what I really believe” (see Appendix G). Instruments that were incomplete or had obvious patterns of response (i.e., all threes, 1,2,3,1,2,3) were not included in the analyses. Twenty-six instruments were eliminated and data from 141 participants were used in analyses.

Validity of the Instrument

Establishing the content, criterion, and construct validity of the Early Childhood Curricular Beliefs Inventory (ECCBI) were the foci of the initial aspects of the study.
Content Validity

In the context of this study, content validity was concerned with the degree to which the items making up the instrument represented the domains that were intended to be measured. Those domains were the four curricular approaches and representative models: the Developmental Interaction approach implemented as the Developmental Interaction model, the Behavioral approach implemented as the Direct Instruction model, Cognitive Developmental approach implemented as the HighScope model, and the Sensory Cognitive approach implemented as the Montessori method.

An accepted means of determining content validity is through the examination of items by a panel of experts (Bryant, 2000; Huck, 2000). The Early Childhood Curricular Beliefs Inventory (ECCBI) was developed with the assistance of a panel composed of three experts in the area of early childhood education theory and practice. These experts aided in establishing the content validity of the instrument items through the classification and sorting procedures previously described. Panelists had the expertise to make good judgments as to content relevance and a willingness to provide honest and appropriate feedback to the researcher (Huck, 2000). In addition to the classification and sorting procedures, upon development of the instrument and after the initial field test, a factor analysis was conducted to further assess the content validity of statements making up the ECCBI.

Using data gathered in the first field-test of the Early Childhood Curricular Beliefs Inventory (ECCBI) with practitioners as participants, an exploratory factor analysis was conducted. This analysis explored the number of factors tapped by the instrument, identified the specific questions or items that constituted each factor, and assessed how strongly those items define the factors (Bryant, 2000; Kim & Mueller, 1978a). In the case of this study, the data matrix consisted of the entity mode, representing participants from the first field-test, and the variable mode, represented by participant responses to each question.

The initial aspect of the exploratory factor analysis was the determination of the minimum number of factors that adequately explained the total variance. Principal components analysis was used to extract the factors so as to explain as much variance as possible in the data (Bryant & Yarnold, 1995; Kim & Mueller, 1978a, 1978b). It was
hypothesized that factors were correlated and a direct oblimin oblique rotation was stipulated in an effort to simplify the factor structure (Bryant & Yarnold, 1995). Upon completion of the initial factor analysis, the number of eigenvectors with values greater than one were determined. Loadings on those eigenvectors, or factors, were examined to determine the number of items that loaded on each factor. Nunnally (1978) indicated that factor loadings of .40 are acceptable; however, a more stringent factor loading of .60 was used to assess the number and strength of items that loaded adequately on each factor. After determining the strength and weakness of factor loadings of individual items, and reviewing the total variance explained by the various factors, a model specifying a particular number of factors was determined. An exploratory factor analysis, using direct oblimin rotation, stipulating a specified number of factors was conducted. Loadings on each factor, number and strength of loadings, were examined. To further test this specified model, two additional exploratory analyses were conducted to evaluate additional factor models that specified the number of eigenvectors to be one greater and one less than the identified model. The loading of individual items was analyzed with results used to evaluate the content validity of the items making up the instrument.

**Criterion Validity**

Criterion validity addressed the issue of whether scores obtained on an instrument correlated to a criterion measure that was assessed at the same point in time (Bryant, 2000). Practitioners trained in one of the four models (Direct Instruction, Developmental Interaction, HighScope, and Montessori) were identified as participants for the initial field test of the Early Childhood Curricular Beliefs Inventory (ECCBI). In the case of this study, curricular training of the participants served as the criterion measure. It was hypothesized that the scores of the practitioners, on the subtests of the ECCBI, were correlated to their curricular training. For example, scores on the ECCBI for participants trained in the Montessori Method would reflect a belief in the Montessori approach.

For the purposes of this study, a contrasted groups approach to assessing criterion validity was employed. This approach examined subtest mean score differences among practitioners. In this study, the groups were composed of individuals
trained in the four curricular models and the variable was defined as curricular beliefs as reflected by subtest scores. An initial repeated measures analysis of variance was conducted to explore the overall effects of training, subtests, and the interaction of training and subtests. If these initial analyses proved to be significant, individual one-way analyses of variance were conducted for each subtest to establish if mean scores among practitioners were significantly different. The null-hypothesis for this phase of the study was as follows: $H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4$, or, there was no variance in mean scores on the subtests of the ECCBI among the four groups of practitioners. The dependent variable for this phase of the study was defined as beliefs (subtest scores), with the independent variable defined as the training of the participants.

**Construct Validity**

Construct validity addressed the issue of whether a given measure, or instrument, assessed the underlying variable (beliefs) that it was intended to represent (Bryant, 2000). To establish construct validity, the researcher evaluated the accuracy with which scores on the subtests of the ECCBI could be used to classify respondents into groups that were known to differ on a specific criterion. It was hypothesized that practitioner scores on the subtests of the ECCBI correlated to training and that mean scores would be significantly less on the subtest representing the area of training.

The researcher determined group membership prior to administration of the new measure and then administered the instrument to each group. The accuracy with which the scores discriminated between group membership was examined by comparing mean scores on the subtests of the ECCBI (Bryant, 2000; Huck, 2000). Initial one-way ANOVAs were conducted to test hypotheses regarding the mean differences between criterion groups on the subtests of the instrument. If these tests proved significant, a *posteriori* pairwise comparisons using parametric (Tukey’s HSD) or nonparametric (Mann-Whitney U) tests were conducted to compare means scores on subtests by each group of practitioners.

The null-hypothesis for construct validity was as follows: $H_0: \mu_{x1} > \mu_{x2}, \mu_{x3}, \mu_{x4}$, or that the criterion group’s score on the associated subtest was significantly greater than the mean scores of other groups of practitioners on the same subtest of the ECCBI. The dependent variable for this phase of the study was defined as beliefs (represented
by a subtest score), with the independent variable defined as the training of the participants (practitioners).

**Reliability**

Results of the field-testing of the Early Childhood Curricular Beliefs Inventory (ECCBI) were used to establish the internal consistency reliability of the instrument. Internal consistency focused on the degree to which the same characteristic was being measured (e.g., curricular belief). Participants for this phase were practitioners trained in one of the four models identified in the study and preservice teachers enrolled in early childhood and elementary education teacher preparation programs. In that the ECCBI was constructed using a Likert-scale consisting of five response options for each statement, ranging from 1: strongly believe to 5: do not believe at all, the suitable technique for establishing reliability of the instrument was Cronbach’s alpha (Huck, 2000; Krathwohl, 1993). Alpha was computed for each subtest and the overall instrument using practitioner and preservice teacher scores.

**Summary**

Statements derived from the literature were classified according to curricular approach by a three-member panel of experts recognized for their theoretical and practical expertise in early childhood education. The panel then sorted the statements gleaned from the classification process. Statements were sorted by curricular approach and area of differentiation according to the level of descriptiveness: “most”, “somewhat”, and “least”. Three statements identified as most descriptive from each curricular approach and area of differentiation were drawn at random and were used to create the 72-item Early Childhood Curricular Beliefs Inventory (ECCBI). The classification and sorting procedures completed by the experts ensured the content validity of the items used to compose the instrument by eliminating incorrect, ambiguous, or redundant statements. In addition, using the results of the initial field-test, an exploratory factor analysis was conducted to assess further content validity of items.
An initial field test of the instrument was conducted to explore criterion and construct validity. Participants were 20 practitioners identified as trained and working in one of the four curricular models identified in the study (Direct Instruction, Developmental Interaction, HighScope, and Montessori). Repeated measures analysis of variance was completed to determine if between subjects, within subjects, and interaction effects were significant. Additional one-way analyses of variances and *a posteriori* pairwise comparisons were completed to assess significance. A subsequent field test was conducted with preservice teachers. Using data from this phase of the study, as well as results from the field-test with practitioners, a test of reliability was completed by computing Cronbach’s alpha for each subtest and the overall instrument.
CHAPTER 4

RESULTS

This chapter presents the results of a study conducted to develop an instrument that provides a means of identifying a preservice teacher’s predominant curricular belief in the area of early childhood education. In that the purpose of the study was instrument construction, the results reported in this chapter are organized as to the development of items, and subsequent procedures to assess the validity and reliability. All statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS 11.5).

Development of the Items

The literature was reviewed to identify the major theoretical positions used in the development of early childhood curriculum. Through this review, four predominant approaches to early childhood education (Developmental Interaction, Cognitive Developmental, Behavioral, and Sensory Cognitive) and four associated models of implementation were identified (Developmental Interaction, HighScope, Direct Instruction, and Montessori). Six areas, in which each of the approaches and models differed, were identified: the view of the child, role of the teacher, resources utilized, curricular emphasis, assessment methodology, and characteristics of the learning environment. A total of 182 statements were derived from the literature describing the four models of implementation and six areas of differentiation (see Appendix A).

Preliminary aspects of the study served to explore the content of the initial pool of 182 statements, or the content validity. Subsequent procedures addressed criterion and construct validity as well as further analysis of content validity of identified items.
Validity

Content Validity

With respect to this study, content validity addressed the degree to which the instrument items represented the four curricular approaches and associated models: the Developmental Interaction approach implemented as the Developmental-Interaction model; Behavioral approach implemented as the Direct Instruction model; Cognitive-Developmental approach implemented as the HighScope model, and the Sensory Cognitive approach implemented as the Montessori method. A panel of three experts in early childhood education classified the 182 statements as one of the four identified curricular models or as NI (not identified). These experts, members of the faculty in early childhood education at a major research university, were recognized for their theoretical and practical expertise in the area of early childhood education. Upon completion of the classification procedure, 141 statements were appropriately classified by all three experts and were used in the subsequent sorting procedure.

Sorting served to further verify the content validity of the 141 statements identified in the classification phase. Panel members sorted statements as to how well each item described the identified area of differentiation (the view of the child, role of the teacher, resources utilized, curricular emphasis, assessment methodology, and characteristics of the learning environment) by curricular model (Developmental Interaction, Direct Instruction, HighScope, and Montessori). Categories for sorting were “most”, “somewhat”, and “least” descriptive. Ninety-eight statements were identified as most descriptive through the sorting procedure. The sorting and classification of statements by a panel of experts served to validate the content of the items derived from relevant literature (see Appendix B).

Upon completion of the sorting procedure, three items from each area of differentiation, by curricular model, were drawn at random from the pool of most descriptive statements. Items were then organized into the 72-item Early Childhood Curricular Beliefs Inventory (ECCBI) (see Appendix C).

To further assess content validity, an exploratory factor analysis was conducted using the data collected in the initial field test with practitioners as the participants. Data
were analyzed using the SPSS 11.5 computer program via principal component analysis. It was hypothesized that the factors were correlated; therefore, an oblique method of rotation, direct oblimin, was utilized. While eleven factors emerged with eigenvalues greater than one, four predominant factors were identified as having high to moderate variable loadings, while explaining 74.69% of the total variance. Communality values for the four-factor structure ranged from .381 to .912, with only five items having values lower than .600 indicating that a high level of the variance for each variable was explained by these four factors.

To insure that the four-factor model was adequate, a factor analysis was conducted using three factors as the stopping rule. This analysis accounted for 67.257% of total variance. Communality values ranged from .140 to .904, with twelve items falling below .600. In addition, an analysis using five factors as the stopping rule was conducted. A total of 79.457% of the overall variance was explained by five factors. As would be expected, communality values were quite high with the addition of a fifth factor; however, factor loadings for the fifth factor were quite low with only three items loading at .50 or higher. These results indicated that the four factor model explained an adequate amount of variance and had appropriate loadings. Therefore, a four-factor model was deemed the suitable factor solution. Loadings for the exploratory factor analysis with four components are shown in Table 4. Items have been organized as to subtests and areas of differentiation for ease of interpretation.

Total variance accounted for by the four-factor model was 74.69%, with each factor accounting for total variance as follows: Factor 1: 33.01%; Factor 2: 24.278; Factor 3: 9.967; and Factor 4: 7.433%.

Additional analyses were conducted to establish which items constituted each factor. Examination of the items loading on each factor, and the strength or weakness of those loadings, lead to further consideration as to the ability of items to represent the four areas of beliefs (Behavioral, Developmental Interaction, Sensory Cognitive, and Cognitive Development). While factor loadings of .40 are satisfactory (Nunnally, 1978), in the case of this study a more stringent rule was applied and those items loading at .60 and above were viewed as acceptable variables. Items loading on any factor below .60 were deemed weak and were identified for possible elimination from the instrument.
Six items were identified as having inadequate loadings in terms of the data collected on the group of practitioners (n=20).

Table 4

*Factor Analysis Results: Four Factors with Direct Oblimin Rotation*  
*(n=20)*

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<tr>
<th>Factor</th>
<th>Item</th>
<th>Subtest 1</th>
<th>Subtest 2</th>
<th>Subtest 3</th>
<th>Subtest 4</th>
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Table 4 (continued).

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<td>56</td>
<td>.702</td>
<td>-.128</td>
</tr>
<tr>
<td>61</td>
<td>.453</td>
<td>.243</td>
</tr>
<tr>
<td>65</td>
<td>.428</td>
<td>.125</td>
</tr>
<tr>
<td>70</td>
<td>.611</td>
<td>.177</td>
</tr>
</tbody>
</table>

Note: Areas of Differentiation: VC=View of the Child; RT=Role of the Teacher; R=Resources; C=Curriculum; A=Assessment; LE: Learning Environment
Results are summarized in Table 5. In addition, five items were shown to load strongly on factors that represented approaches/models other than as originally written (see Table 6). Upon development of the 72-item instrument, focus of the study turned to exploring the criterion-related validity and the construct validity as related to the sample used in this study.

**Criterion Validity**

Criterion validity addressed the issue of whether subtest scores on the 72-item instrument correlated to the criterion measure of training; a contrasted groups approach was used in this part of the study. Participants for this phase were practitioners (n=20) with reported training in one of the four curricular models (Developmental Interaction, Direct Instruction, HighScope, and Montessori).

Table 5

*Items Identified for Possible Deletion*

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Reason for Deletion</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>No loadings over .60; Low/moderate loadings on all factors</td>
</tr>
<tr>
<td>26</td>
<td>No loadings over .60; Low/moderate loadings on 3 factors</td>
</tr>
<tr>
<td>32</td>
<td>No loadings over .60; Low/moderate loadings on all factors</td>
</tr>
<tr>
<td>46</td>
<td>No loadings over .60 Low loadings on factors 1 &amp; 2; and similar on factors 3 &amp; 4</td>
</tr>
<tr>
<td>61</td>
<td>No loadings over .60; Low/moderate loadings on factors 1, 3, and 4</td>
</tr>
<tr>
<td>65</td>
<td>No loadings over .50; Low loadings on all factors</td>
</tr>
</tbody>
</table>
Table 6

*Items Loading Strongly on Factors Representing Other Approaches/Models*

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Approach/Model Statement Written to Represent</th>
<th>Loading</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>Behavioral/Direct Instruction</td>
<td>.664</td>
<td>2 - Sensory Cognitive</td>
</tr>
<tr>
<td>34</td>
<td>Developmental Interaction</td>
<td>.791</td>
<td>1 - Cog Developmental</td>
</tr>
<tr>
<td>66</td>
<td>Sensory Cognitive</td>
<td>.610</td>
<td>1 - Cog Developmental</td>
</tr>
<tr>
<td>68</td>
<td>Behavioral/Direct Instruction</td>
<td>.765</td>
<td>2 - Sensory Cognitive</td>
</tr>
<tr>
<td>71</td>
<td>Behavioral/Direct Instruction</td>
<td>.712</td>
<td>4 - Child Initiated</td>
</tr>
</tbody>
</table>

Mean scores of each practitioner group on the four subtests are summarized in Table 7.

It was hypothesized that mean scores of the practitioners in this study on the subtests of the Early Childhood Curricular Beliefs Inventory differed with respect to their training. The null hypothesis for this phase of the study, \( H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 \), stated that there were no differences in mean scores on the subscales of the Early Childhood Beliefs Inventory (ECCBI) among the groups of practitioners. Parametric and non-parametric analyses of variance were used to explore differences in means.

**Construct Validity**

In the case of this study, construct validity examined the ability of the instrument to tap the construct of curricular beliefs and to discriminate among the groups of practitioners, where scores on the subtests indicated curricular beliefs. The null hypothesis for this phase of the study was \( H_0: \mu_{x1} > \mu_{x2}, \mu_{x3}, \mu_{x4} \); or stated, mean scores on the subtest related to practitioner training would be significantly higher than the scores of practitioners trained in one of the other models on the same subtest. Parametric and non-parametric *a posteriori* pairwise comparisons were completed for this phase of the study.
Table 7

*Practitioner Mean Score Summary on 4 Subtests by Area of Training*

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Training</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(Direct Instruction)</td>
<td>Dev (n=5)</td>
<td>67.40</td>
<td>17.785</td>
</tr>
<tr>
<td></td>
<td>DI (n=5)</td>
<td>35.80</td>
<td>7.050</td>
</tr>
<tr>
<td></td>
<td>HS (n=5)</td>
<td>85.80</td>
<td>3.962</td>
</tr>
<tr>
<td></td>
<td>Mont (n=5)</td>
<td>61.60</td>
<td>8.620</td>
</tr>
<tr>
<td></td>
<td>Total (n=20)</td>
<td>62.65</td>
<td>20.808</td>
</tr>
<tr>
<td>2 (Developmental Interaction)</td>
<td>Dev (n=5)</td>
<td>26.00</td>
<td>6.442</td>
</tr>
<tr>
<td></td>
<td>DI (n=5)</td>
<td>59.20</td>
<td>12.091</td>
</tr>
<tr>
<td></td>
<td>HS (n=5)</td>
<td>57.60</td>
<td>1.342</td>
</tr>
<tr>
<td></td>
<td>Mont (n=5)</td>
<td>39.80</td>
<td>8.319</td>
</tr>
<tr>
<td></td>
<td>Total (n=20)</td>
<td>45.65</td>
<td>15.842</td>
</tr>
<tr>
<td>3 (Montessori)</td>
<td>Dev (n=5)</td>
<td>56.00</td>
<td>13.229</td>
</tr>
<tr>
<td></td>
<td>DI (n=5)</td>
<td>70.60</td>
<td>8.820</td>
</tr>
<tr>
<td></td>
<td>HS (n=5)</td>
<td>69.80</td>
<td>12.988</td>
</tr>
<tr>
<td></td>
<td>Mont (n=5)</td>
<td>21.80</td>
<td>1.924</td>
</tr>
<tr>
<td></td>
<td>Total (n=20)</td>
<td>54.55</td>
<td>22.390</td>
</tr>
<tr>
<td>4 (HighScope)</td>
<td>Dev (n=5)</td>
<td>45.00</td>
<td>11.225</td>
</tr>
<tr>
<td></td>
<td>DI (n=5)</td>
<td>65.40</td>
<td>8.264</td>
</tr>
<tr>
<td></td>
<td>HS (n=5)</td>
<td>22.80</td>
<td>2.588</td>
</tr>
<tr>
<td></td>
<td>Mont (n=5)</td>
<td>41.20</td>
<td>5.357</td>
</tr>
<tr>
<td></td>
<td>Total (n=20)</td>
<td>43.60</td>
<td>17.009</td>
</tr>
</tbody>
</table>

Note: Scale scores ranged from 1: Complete agreement to 5: Complete Disagreement. Therefore, low scores are indicative of agreement with model; high scores represent disagreement.

**Validity Testing**

The initial procedure in assessing validity was to investigate the significance of the overall effects. An alpha level of .05 was the bases for all statistical tests. A preliminary test of sphericity was conducted and, in that the Mauchly’s test was not significant (p=.07), testing continued without any adjustments to procedures. A one-way repeated measures analysis of variance (ANOVA) was conducted to investigate if differences existed among the practitioners on the subtests of the Early Childhood
Curricular Beliefs Inventory (ECCBI). Practitioner training was identified as the between-subjects variable and subtest scores (or beliefs) as the within subjects variable. Analysis showed a significant main effect of training \( [F (3,16)=11.756; p<.01 (\eta^2=.792)] \), a significant within subjects effect of subtest \( [F(1,16)=27.574; p<.01 (\eta^2=.633)] \), and a significant interaction effect of subtest X training \( [F(3, 16)=39.128; p,.01 (\eta^2=.879)] \). Results are summarized in Table 8.

In that there were significant results regarding training, subtests and the overall interaction of training and subtests, further analyses were warranted to examine the performance of each group of practitioners on each of the subtests.

This phase of the study aimed to either accept or reject the null hypotheses:

Hypothesis 1: \( H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 \) and Hypothesis 2: \( H_0: \mu_x > \mu_{x1}, \mu_{x2}, \mu_{x3} \), which ultimately addressed construct and criterion validity of each subtest.

**Criterion and Construct Validity: Subtest Performance**

Individual one-way analyses of variance (ANOVA) were conducted to test for significance of performance among the four groups of practitioners on each of the four subtests [Direct Instruction (DI), Developmental Interaction (Dev), Montessori (Mont), and HighScope (HS)]. Results of these analyses were used to accept or reject the first null hypothesis, \( H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 \), or that mean scores on each subtest were equal among the four groups that varied in terms of training on each of the four subtests. If the first null hypothesis was rejected, pairwise comparisons were conducted to accept or reject the subsequent null hypothesis, \( H_0: \mu_x > \mu_{x1}, \mu_{x2}, \mu_{x3} \).

**Subtest 1: Direct Instruction**

Initial evaluation of the means of the four groups of practitioners on Subtest 1: *Direct Instruction* indicated that the data failed the test of homogeneity of variance assumption (Levene Statistic=7.294; \( p<.01 \)), therefore a nonparametric analysis of variance using the Kruskal-Wallis test was indicated as the appropriate method of testing group means (Huck, 2000).

**Null Hypothesis 1:** \( H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 \). The results of this analysis [Kruskal-Wallis test, \( H_{3,19}=14.931, p=.002 (\eta^2=.778) \)] showed that there was a significant
difference in the means of the four groups of practitioners, that varied in terms of training, and the null hypothesis was rejected.

Table 8

One-Way Repeated Measures Analysis of Variance for Subtests and Training

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>F</th>
<th>η²</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training (T)</td>
<td>3</td>
<td>11.756**</td>
<td>.792</td>
<td>.00</td>
</tr>
<tr>
<td>error</td>
<td>16</td>
<td>(120.13)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Within Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtest (S)</td>
<td>1</td>
<td>27.574**</td>
<td>.633</td>
<td>.00</td>
</tr>
<tr>
<td>S X T</td>
<td>3</td>
<td>39.128**</td>
<td>.879</td>
<td>.00</td>
</tr>
<tr>
<td>error</td>
<td>16</td>
<td>(84.43)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Values enclosed in parentheses represent mean square errors. *p<.05, **p<.01.

**Null Hypothesis 2: H₀: μₓ > μₓ₁, μₓ₂, μₓ₃.** Rejection of the first null hypothesis indicated that further *a posteriori* pairwise comparisons using the non-parametric Mann-Whitney U statistic were appropriate and were conducted to compare the means of the four training groups (Huck, 2000; Weinfurt, 2000). Visual observation of the data deemed that the mean score of the practitioners trained in Direct Instruction was the lowest. Pairwise tests comparing mean scores of practitioners trained in Direct Instruction and mean scores of the other three training groups indicated significant differences between means on Subtest 1 (see Table 9).
Table 9

Subtest 1: Direct Instruction

Mann-Whitney U Non-Parametric Test of Means vs. Training: Direct Instruction

<table>
<thead>
<tr>
<th>Area of Training</th>
<th>Mean</th>
<th>Mann-Whitney U</th>
<th>Z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Instruction</td>
<td>35.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>v. Develop. Int.</td>
<td>67.40</td>
<td>1.000</td>
<td>-2.410**</td>
<td>.008</td>
</tr>
<tr>
<td>v. HighScope.</td>
<td>85.80</td>
<td>.000</td>
<td>-2.619**</td>
<td>.005</td>
</tr>
<tr>
<td>v. Montessori</td>
<td>61.60</td>
<td>.000</td>
<td>-2.619**</td>
<td>.005</td>
</tr>
</tbody>
</table>

Note: *p<.05; **p<.01

Subtest 2: Developmental Interaction

The initial test of homogeneity of variances was not significant (Levene Statistic= 2.814; p>.05), thereby indicating the use of a one-way analysis of variance of the data.

Null hypothesis 1: H₀: μ₁ = μ₂ = μ₃ = μ₄. For this sample, the overall F test indicated a rejection of the null hypothesis in that the mean scores of the four training groups on Subtest 2: Developmental Interaction were significantly different [F(3,16)=19.244; p<.01 (η²=.783)] (see Table 10).

Table 10

One-Way Analysis of Variance for Subtest 2: Developmental-Interaction

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>η²</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>3</td>
<td>3733.75</td>
<td>1526.00</td>
<td>19.244**</td>
<td>.783</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>16</td>
<td>1034.80</td>
<td>64.66</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>4768.55</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *p<.05, **p<.01.
**Null hypothesis 2:** \( H_0: \mu_x > \mu_{x1}, \mu_{x2}, \mu_{x3} \). *A posteriori* pairwise comparisons using Tukey’s HSD were conducted to compare differences in mean scores between practitioners trained in Developmental-Interaction and the other three groups. The mean score of practitioners trained in Developmental-Interaction was deemed the lowest. Comparisons indicated significant differences between mean scores on *Subtest 2* with the exception of mean scores of practitioners trained in Montessori. Mean scores of these two groups: (Developmental Interaction and Montessori) were not significantly different. Table 11 summarizes these comparisons.

**Subtest 3: Montessori Method**

For these data, Levene’s test of homogeneity of variances was not significant (Levene Statistic=1.185; \( p>.05 \)), and a subsequent one-way analysis of variance F test was conducted.

Table 11

*Subtest 2: Developmental Interaction*

*Tukey’s HSD Comparison of Means*

<table>
<thead>
<tr>
<th>Area of Training</th>
<th>Mean</th>
<th>Mean Differences</th>
<th>Std. Error</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop. Int.</td>
<td>26.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>v. Montessori</td>
<td>39.80</td>
<td>-13.80</td>
<td>5.086</td>
<td>.066</td>
</tr>
<tr>
<td>v. HighScope</td>
<td>57.60</td>
<td>-17.80*</td>
<td>5.086</td>
<td>.014</td>
</tr>
<tr>
<td>v. Direct Instruction</td>
<td>59.20</td>
<td>-33.20**</td>
<td>5.086</td>
<td>.000</td>
</tr>
</tbody>
</table>

Note: *\( p<.05 \), **\( p<.01 \).*

**Null hypothesis 1:** \( H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 \). Results indicated the rejection of the null hypothesis in that the overall means for the four groups were significantly different \([F(3,16)=24.535; \ p<.01 (\eta^2=.821)]\) (see Table 12). These results indicated *a posteriori* comparisons were appropriate.

**Null hypothesis 2:** \( H_0: \mu_x > \mu_{x1}, \mu_{x2}, \mu_{x3} \). Visual observation of the mean scores for *Subtest 3: Montessori* indicated that the mean score for practitioners trained in the Montessori method was the lowest. Pairwise comparisons using Tukey’s HSD
demonstrated significant differences between the mean score of the Montessori trained practitioners and those in the remaining three training groups (see Table 13).

Table 12

One-Way Analysis of Variance  Subtest 3: Montessori

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>$\eta^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>3</td>
<td>7824.15</td>
<td>2608.05</td>
<td>24.535**</td>
<td>.821</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>16</td>
<td>1700.80</td>
<td>106.30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>9524.95</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *p<.05, **p<.01.

Table 13

Subtest 3: Montessori Method
Tukey's HSD Comparison of Means

<table>
<thead>
<tr>
<th>Area of Training</th>
<th>Mean</th>
<th>Mean Differences</th>
<th>Std. Error</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montessori</td>
<td>21.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>v. Develop Int.</td>
<td>56.00</td>
<td>-34.20**</td>
<td>6.521</td>
<td>.000</td>
</tr>
<tr>
<td>v. HighScope</td>
<td>69.80</td>
<td>-48.00**</td>
<td>6.521</td>
<td>.000</td>
</tr>
<tr>
<td>v. Direct Instruction</td>
<td>70.60</td>
<td>-48.80**</td>
<td>6.521</td>
<td>.000</td>
</tr>
</tbody>
</table>

Note: *p<.05, **p<.01.

Subtest 4: HighScope

For this sample, an initial test of homogeneity of variances was not significant (Levene Statistic= 2.223; p>.05), and a one-way analysis of variance was indicated.

Null Hypothesis1: $H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4$. The overall F test lead to the rejection
of the null hypothesis in that an overall test of the means indicated that they were significantly different \([F(3,16)=27.036; p<.01 \ (\eta^2=.835)]\) (see Table 14).

Table 14

**One-Way Analysis of Variance for Subtest 4: HighScope**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>(\eta^2)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>3</td>
<td>4665.80</td>
<td>1555.267</td>
<td>27.036**</td>
<td>.835</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>16</td>
<td>920.40</td>
<td>57.425</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>5586.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *p<.05, **p<.01.

**Null hypothesis 2:** \(H_0: \mu_x > \mu_{x1}, \mu_{x2}, \mu_{x3}\). *A posteriori* pairwise comparisons of means between training groups were conducted using Tukey’s HSD test. With the lowest mean score being the HighScope trained group, comparisons indicated significant differences in means on Subtest 4 between the HighScope practitioners and each of the other groups of practitioners (see Table 15).

Table 15

**Subtest 4: HighScope**

*Tukey’s HSD Comparison of Means*

<table>
<thead>
<tr>
<th>Area of Training</th>
<th>Mean</th>
<th>Mean Differences</th>
<th>Std. Error</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>HighScope</td>
<td>22.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>v. Montessori</td>
<td>41.20</td>
<td>-18.40**</td>
<td>4.797</td>
<td>.007</td>
</tr>
<tr>
<td>v. Develop. Int.</td>
<td>45.00</td>
<td>-22.20**</td>
<td>4.797</td>
<td>.001</td>
</tr>
<tr>
<td>v. Direct Instruction</td>
<td>65.80</td>
<td>-43.00**</td>
<td>4.797</td>
<td>.000</td>
</tr>
</tbody>
</table>

Note: *p<.05, **p<.01.
Reliability

The focus of reliability was the internal consistency of the four subtests of the Early Childhood Curricular Beliefs Inventory (ECCBI) and the 72-item instrument as a whole. Internal reliability was determined using Cronbach’s alpha (Cronbach, 1951). The internal reliability coefficients (alphas) were based on the practitioner sample and the preservice teacher sample and are presented in Table 16.

Table 16

*Internal Reliability (Alpha) Estimates for ECCBI and Subtests by Participants*

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Practitioners (n=20)</th>
<th>Preservice Tchrs (n=141)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtest 1: Direct Instruction</td>
<td>.96</td>
<td>.76</td>
</tr>
<tr>
<td>Subtest 2: Developmental Inter.</td>
<td>.91</td>
<td>.77</td>
</tr>
<tr>
<td>Subtest 3: Montessori</td>
<td>.97</td>
<td>.75</td>
</tr>
<tr>
<td>Subtest 4: HighScope</td>
<td>.95</td>
<td>.78</td>
</tr>
<tr>
<td>Total ECCBI</td>
<td>.90</td>
<td>.90</td>
</tr>
</tbody>
</table>

Revised Instrument

Statistical analyses were conducted on the data gathered through the field testing of the 72-item instrument (see Appendix C). Through the factor analysis, eleven items were identified for possible deletion; elimination of these items would have reduced the instrument to 61 items. However, in reviewing literature concerning inventories of this type (i.e., Charlesworth et al., 1991; Kaufmann, 1975; Rusher et al., 1992; Smith, 1992), and in that these inventories averaged 30 items, the researcher viewed an inventory of 72 items, or 61 items (after eliminating the 11 identified statements), as cumbersome and saw the need to offer a condensed version of the ECCBI.
In that careful attention was given to content validity of individual items through classification and sorting procedures as well as the applied factor analysis, development of a shortened form of the instrument using selected items from the 72-item, or full version of the ECCBI, appeared appropriate and feasible. Using knowledge of the existing items and the factor loading of these items, twenty-four statements were chosen for the condensed instrument; six items representing each of the four models/subtests (Direct Instruction, Developmental Interaction, Montessori, and HighScope). The six items with the highest factor loadings from each of the four subtests were identified and were organized into the ECCBI-SV and a corresponding score sheet (Appendix H). Selected items, area of differentiation and loadings on the identified factors are summarized in Table 17. In that factor loadings of chosen items were extremely high and indicated that each identified item strongly represented the specified model, no consideration was given to choosing statements from each of the six areas of differentiation. Both the 72-item and the 24-item instruments may be used to identify a preservice teacher’s curricular beliefs with the complete version (72-items) providing additional information regarding a student’s specific beliefs regarding each area of differentiation.

Summary

Initial phases of the study addressed the content validity of the items, or statements, derived from a review of the relevant literature. To begin with, a panel of experts classified the statements as to the representative approach/ models and followed up by sorting statements as to descriptiveness. Statements were organized into a 72-item instrument, which was administered to a group of practitioners with training in one of four areas of early childhood education. A factor analysis was conducted to further assess the content validity of the items. Statistical analyses were conducted to assess criterion and construct validity. A repeated measures ANOVA indicated a significant effect of training with beliefs, represented by mean scores on the four subtests. These findings warranted further analyses and training group performances on each individual subtest were explored. Appropriate analyses of
variance (parametric or non-parametric) were conducted on each subtest (1-4). Results indicated a rejection of the null hypothesis for each of the subtests, thereby supporting criterion validity. *A posteriori* pairwise comparisons between training groups were then conducted for each subtest and construct validity was assessed in terms of the scores on each subtest when compared to corresponding training groups. Internal reliability of the instrument was evaluated via Cronbach’s alpha using both practitioner and preservice teacher scores on subtests and the overall instrument. Seeing the need for an abbreviated form of the instrument, a 24-item version of the ECCBI was created using the results of the exploratory factor analysis.
Table 17

*Factor Loadings of ECCBI-SV 24- Items*

<table>
<thead>
<tr>
<th>Item #</th>
<th>Area of Differentiation</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
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<td>1</td>
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<td>3</td>
<td>4</td>
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Note: Areas of Differentiation: VC=View of the Child; RT=Role of the Teacher; R=Resources; C=Curriculum; A=Assessment; LE: Learning Environment
CHAPTER 5

DISCUSSION AND RECOMMENDATIONS

The purpose of this study was to develop an instrument that provides a means of identifying a preservice teacher's predominant curricular belief in the area of early childhood education. The rationale for this instrument was drawn from the literature regarding the important role of preservice teachers' beliefs in teacher preparation (Anderson & Bird, 1994; Bird, Anderson, Sullivan, & Swidler, 1992: Feiman-Nemser & Remillard, 1996; Hollingsworth, 1989; Kennedy, 1997; McDiarmid, 1990; Pajares, 1993; Patrick & Pintrich, 2001; Raths, 2001; Weinstein, 1989). Following the tradition of researchers such as Charlesworth, et al. (1991), Smith (1992), and File and Gullo (2001), and the related methodologies of instrument development found in studies such as Brown (1968), Dobson et al. (1980), and Smith (1992), the aim of this study was to develop and field test an instrument that provides an efficient and scholarly tool for exploring curricular beliefs of preservice teachers in the area of early childhood education. The parallel nature of the framework used in the development of early childhood curricular models and the schema, or beliefs, that preservice teachers have upon entering their training provides a holistic structure for an instrument to examine those beliefs and makes the development of a new scale worthwhile.

The final chapter of this report is presented in three parts. Part one is a discussion of the results of the study and the limitations of the methodology. The second section includes suggestions for further study, while the third section presents concluding remarks.
Discussion of the Results of the Study

In that the purpose of this study was instrument construction, the focus of the research was item development and exploration of the validity and reliability of the instrument in relation to data gathered. As such, the discussion that follows concerns the outcome of the procedures to assess internal reliability, content validity, criterion validity, and construct validity using data obtained with a sample of practitioners and preservice teachers.

Development of ECCBI Items and Instrument

The initial set of 182 items for the Early Childhood Curricular Beliefs Inventory (ECCBI) (see Appendix A) was derived from literature describing the four approaches and models: Developmental Interaction approach implemented as the Developmental Interaction model; Behavioral approach implemented as the Direct Instruction model; Cognitive Developmental approach implemented as the HighScope model, and the Sensory Cognitive approach implemented as the Montessori method. Statements were written so as to operationalize the models, or to represent working aspects of the models. A panel of experts in early childhood education classified and sorted the items, and 72 statements were ultimately chosen for the instrument. Eighteen statements (three describing each area of differentiation) representing each of the four models were organized as the Early Childhood Curricular Beliefs Inventory (ECCBI) and were used in the field testing phase of the study (see Appendix C).

Evaluation of Reliability

Internal consistency reliability coefficients were calculated for the four subtests of the 72-item ECCBI and the overall instrument for both the practitioner sample and the preservice teacher sample. In respect to the two samples, adequate internal consistency reliabilities were obtained (Cronbach, 1951). Reliability coefficients (Cronbach’s alphas) for this sample of practitioners ranged from .91 to .97 on the subtests indicating that each scale represented the identified approach/model and the underlying construct of curricular beliefs. The coefficient for the overall test was .90. These values exceeded the acceptable standards for Cronbach’s alpha (.70 and above) as described by Nunnally (1978). Coefficient values obtained on the four subtests for the sample of preservice teachers were deemed adequate--ranging from .75 to .78, and
.90 for the overall instrument. In that the construct being evaluated was beliefs, differences in coefficients for the samples of practitioners and preservice teachers may be accounted for by experiences, personal and professional, which served to shape and define beliefs, in that practitioners have more solidified beliefs.

**Evaluating Content Validity**

The classification and sorting procedures, conducted by the panel of experts, served to verify statements from the initial pool. This methodology has been recognized as an appropriate means of establishing content validity of instrument items and has been used in a number of studies (i.e., Brown, 1968; Dobson et al., 1980; Smith, 1992). Seventy-two items, derived from the procedures, were used in the final instrument development, and in that the items received the full support of the experts, resulting statements were deemed to be acceptable instrument items and representative of the four models for the instrument.

In addition to the work of the expert panel, an exploratory factor analysis was conducted to further verify the content of the items chosen for the instrument. Data for this phase of the study were collected through the first field-test of the instrument. Participants for this phase were practitioners trained in one of the four curricular models.

The researcher identified four factors through the analysis, which accounted for 74.69% of the total variance. The percentage of variance explained was substantially above chance levels indicating that the factors accounted for an adequate amount of the total variance. Analysis of item-loadings on the four-factor matrix resulted in the following labeling: Factor 1: Cognitive Developmental; Factor 2: Sensory Cognitive; Factor 3: Developmental Interaction; Factor 4: Developmentally Appropriate. Summaries of each are included below.

Factor 1: The first factor explained 33.0113% of total variance. Examination of the items loading at .60 or greater on this component, were those drawn from the literature regarding the Cognitive Developmental approach and the HighScope model and the factor was labeled as such. In addition, 16 items derived from the literature addressing the Behavioral approach/Direct Instruction model had very strong negative loadings on the first factor, indicating a strong inverse relationship to the first factor, which is supported in the literature.
Factor 2: The second factor explained 24.278% of the total variance. Items loading on this component were primarily drawn from literature regarding the Sensory Cognitive, or Montessori method. This factor was labeled Sensory Cognitive.

Factor 3: Variance explained by the third factor was 9.967%. Items loading on this component reflected statements derived from the literature describing the Developmental Interaction approach and model and was labeled as such.

Factor 4: While a three factor model provided adequate explanation regarding these data, the addition of a fourth factor added depth to the interpretation of the instrument. Variance explained by the fourth factor was 7.433%, for a total 74.690% of variance explained. Items loading on this factor were drawn primarily from the literature regarding the Developmental Interaction approach/model and the Cognitive Developmental approach/HighScope model. Seven items representing these two approaches/models loaded at .60 and above. Using a less conservative, and still acceptable, factor loading of .50 (Nunnally, 1978) fifteen items loaded on the fourth factor; five representing the Developmental Interaction Approach/model and ten representing the Cognitive Developmental approach/HighScope model. An examination of the items resulted in labeling the fourth factor as Child-Initiated (Bredekamp & Copple, 1997).

The strength of each item in regard to the four identified factors was evaluated. Using a stringent factor loading of .60 as a minimum, six items did not meet the standard and were identified for possible elimination. Two items were originally written to represent the Developmental Interaction approach/model (items 7 and 46), and four represented the Cognitive Developmental approach/HighScope model (items 26, 32, 61, and 65). In addition, five items were identified as loading strongly on factors that did not represent the approach/model for which they were developed (items 28, 34, 66, 68, 71). As such, in respect to the sample from which the data was gathered, eleven items were identified as needing to be rewritten for subsequent testing or for possible elimination from the statement pool.

In reviewing literature concerning inventories of this type, the length of the instrument became a concern. Therefore, the researcher used the results of the factor analysis to develop a shortened version of the ECCBI. The six highest loading items
from each subtest (Direct Instruction, Developmental Interaction, Montessori, and HighScope) were identified and formatted into an abridged inventory (see Appendix H). This shortened inventory is meant to be less cumbersome and an alternative to the longer inventory in that it provides an efficient means of identifying a preservice teacher’s curricular beliefs. However, the 72-item instrument does present a more detailed indication of the teacher education student’s beliefs in each of the areas of differentiation (view of the child, role of the teacher, resources, curricular emphasis, assessment, and learning environment). Therefore, these two versions offer alternative means of exploring curricular beliefs.

**Evaluation of Criterion Validity**

The relationship of training to practitioner performance on the subtests of the ECCBI was the focus of criterion validity. An initial overall test of means showed a significant effect of training and subsequent individual tests of means were conducted to explore the results of training on each subtest. Individual ANOVAS for each subtest were significant. Results indicated that practitioners’ scores on the subtests correlated to their areas of training and the instrument behaved as predicted.

**Evaluation of Construct Validity**

Pairwise comparisons were conducted to test if means of practitioner groups on the correlated subtest were significantly lower than the scores of other practitioners on the same subtest. With the exception of one case, comparisons were significantly different. These results indicated that the instrument adequately predicted membership to an assigned group, a requirement for construct validity (Bryant, 2000; Huck, 2000). In the case of this study, the mean score of participants trained in Developmental Interaction on the Developmental Interaction subtest of the ECCBI while lowest, was not significantly lower than the mean score of practitioners trained in the Montessori method as was predicted. These results may indicate that the Montessori trained practitioners in this study closely identified with statements describing the Developmental Interaction approach/model. In that practitioners trained in Developmental Interaction did not closely identify with statements representing the Montessori method, it appears that the Montessori trained practitioners were more eclectic in their training and beliefs.
Limitations of the Study

In relation to this study, certain limitations must be noted:

1) Examinee characteristics cannot be separated from test characteristics. There are characteristics of the practitioners that cannot be accounted for but are reflected in the results of the study.

2) While practitioners were asked to respond to the instrument according to the area of training, the influence of existing beliefs may be evident and eclectic in nature, spanning across training areas.

3) Preservice teachers may be in the process of trying to reconcile beliefs with program expectations. Therefore, reported beliefs may not be representative of true beliefs.

4) Sample sizes used in the study were small; however, the data gathered were meaningful and provided a basis for further work (Bryant & Yarnold, 1995).

Recommendations for Future Research

The goal of this study was to develop an instrument to explore the early childhood curricular beliefs of preservice teachers, and analyses using the data gleaned from the panel of experts, practitioner, and preservice teacher participants indicated content, criterion, and construct validity and internal reliability of the items comprising the ECCBI, and the instrument behaved as predicted. While evaluation of the instrument proved promising, additional testing and analyses are recommended to further refine the instrument and/or the concept of the instrument. As such, the process of conducting this study naturally suggested refinement of the process and additional areas of research.

To enhance the ECCBI and the data generated, certain refinements should be considered:

1) Replicate the study using larger and more diverse samples, which will serve to strengthen validity and reliability studies. Participants may include preservice teachers from wider geographic areas, representatives of urban, rural, and suburban areas, ethnic and racial diversity, as well as age and gender.
2) Conduct further field-testing and analyses of the shortened 24-item version of the ECCBI to establish reliability and validity of this version.

3) Field-test the instrument with participants other than preservice teachers (inservice teachers, directors, administrators, and curriculum specialists) to explore validity and reliability of the ECCBI when used with these professionals.

4) Statements may be rewritten to reflect scenarios more familiar to preservice teachers, avoiding technical language and vocabulary.

5) Format the instrument as a forced-choice inventory.

6) Restrict the Likert scale to four choices, eliminating the ‘unsure’, or midrange score of ‘3’; thereby, forcing participants to reflect upon statements and to make a choice.

In addition, areas for further study have evolved over the course of the study. These include the following:

1) Pursuing the use of the ECCBI (Early Childhood Curricular Beliefs Inventory) with additional professionals in the field of early childhood education (inservice teachers, curriculum specialists, directors, and program administrators).

2) Exploration of preservice teachers' beliefs upon entrance to and upon completion of a program of teacher education—do beliefs solidify or change over the course of the training?

3) In that teacher shortages are a concern, and avenues for alternative certification continue to be developed, exploration of the existing curricular beliefs held by those choosing these various routes may aid in the development of strategies for preparing these future teachers.

4) Longitudinal studies of belief development/consolidation of preservice and inservice teachers to establish if correlations exist between this aspect and the developmental stages of teachers set forth by Katz (1972).

5) Explore development/consolidation of beliefs of preservice(inservice) teachers in programs that adopt a particular curricular approach/model (e.g., Montessori, HighScope).
6) Investigate the relationship between identified curricular beliefs and actual classroom practices (Buchanan, Burts, Bidner, White & Charlesworth, 1998; Charlesworth et al., 1991; Dobson et al., 1980; Spodek, 1988; Stipek & Byler, 1997; Vartuli, 1999).

**Conclusions**

Teachers of young children receive training in a variety of ways and through a variety of programs. Preservice teachers receive training not only in colleges and universities, but through associate degree programs, vocational preparation programs, Child Development Associate training, and summer institutes. While it has not been determined whether teachers employed in different settings need the same or different levels of training, the field of early childhood education continues to strive for the professionalism of the career (Isenberg, 2001; Katz & Goffin, 1990). This professionalism, however, extends beyond the teachers that work directly with children, it extends to program administrators, curriculum specialists, and others involved in planning and implementation. Professionalism demands that all involved in the education of young children move from being technicians who know what to “do”, but also demands that they develop mental structures of “why” they do what they do (Green, 1971; Silin, 1988; Spodek, Saracho, & Peters, 1988). Opportunities to explore these beliefs are essential to developing a defensible philosophy of education that serves to benefit children through promoting reflective practices that strengthen the profession.

The use of an instrument such as the Early Childhood Curricular Beliefs Inventory (ECCBI), that uses curricular models as the basis for organization, provides a cohesive means of exploring beliefs. When used with the various groups of preservice teachers as well as other professionals currently working in the field of early childhood education the instrument has several possible uses such as determining a prospective teacher’s belief system as suitable for a given school or program philosophy or for working with an identified group of children, or as a tool for preservice teachers and/or teacher educators to stimulate critical and reflective thinking on the part of the soon-to-be teacher as well as making individuals aware that they do have systems of beliefs
regarding the education of young children. While the researcher makes no argument that these tools (72-item and 24-item inventories) should be, by any means, the sole sources of tapping or assessing a one’s curricular beliefs, the use of instruments such as the ECCBI does provide opportunities for reflective practices necessary to become a quality educator.
APPENDIX A

182 Initial Belief Statements
Belief Statements
HighScope

View of the Child

1. Planning with children helps them to picture what they want to do before they begin. (VC)

2. Having the child recall what she did during work time allows her to reflect on, talk about, and exhibit what she has done.

3. How children perceive their world, what they do, and the kinds of activities that are important for cognitive development are defined by key experiences in areas such as language and literacy, seriation, number, and classification.

4. Children learn best when they have a consistent daily routine that incorporates plan-do-review, small-group time, and large-group time.

5. Children learn to solve their own problems and resolve conflicts with the help of adults that approach them calmly, acknowledge their feelings, gather information, help children restate the problem, and ask the children for solutions.

6. Key experiences define the kinds knowledge that children are acquiring as they interact with materials, people, ideas, and events.

Role of the Teacher

1. During work time, adults pay close attention to the children, checking the status of the plans that children have made, looking for key experiences, recording anecdotal notes and being actively involved with children.

2. Adults conduct a recall time with the children, listening carefully and talking with the children about their activity during work time.

3. Using two telephones, the adult “calls” a child and they talk about the child’s plans for work time “over the phone”; this encourages the child to anticipate what he is going to do rather than where he is going to work.

4. Adults acknowledge and encourage children’s work-time experiences rather than praising them. “I see that you are using red and blue paint today.

5. Adults are playful; during work time they get down on the floor to play with blocks, are “rescued” from burning buildings, and dig in the sandbox.
6. Key experiences guide adults as they observe, support, and plan activities for children and as they evaluate the growth of children.

7. Adults meet and plan each day, using their daily observations and the key experiences as guides to develop small and large group experiences.

Resources

1. Key experiences are tools for assessing materials available to children—resources can be chosen to support the problem solving and active learning of the children.

2. Equipment for the house area should include child-sized appliances that are easy to reach and adult-sized utensils that allow them to imitate adult actions.

3. Interest areas should be stocked with "real" adult-sized materials—real telephones, adult-sized cooking equipment, and unbreakable tableware—to promote dramatic play that is based on children’s experiences.

4. Many "open-ended" materials are included in the interest areas, such as: blocks, paper, cardboard, string, paper towel tubes, pipe cleaners, glue, tape, boxes, etc.—that encourage problem-solving and cognitive development.

5. The storage of materials promotes the find-use-return cycle, with materials stored in clear containers that have a picture or item attached to match with the shelf label.

6. Whenever possible, at least two of everything – dump trucks, hammers, staplers, dress-up shoes, etc., are found in the interest areas.

7. Materials and labels are introduced throughout the school year during planning and small-group times and are then placed in the interest area for the children’s use.

Curriculum

1. The curriculum is built around active learning periods that include the plan-do-review sequence, small-group times, and large-group times.

2. Children explore materials and problem solve in a small-group time that has been planned by adults.
3. Children carry out a purposeful sequence of actions that they have thought about and described during planning time, while also following through on new ideas and plans that arise while they play.

4. Each child begins their work-time by deciding what to do and sharing these plans with an adult.

5. Work time encourages children to focus on both play and problem solving.

6. Five basic principles – active learning, positive adult-child interactions, the learning environment, a consistent daily routine, and assessment form the framework for the curriculum.

7. Key experiences are used as a guide for planning large and small group times. For example, as the children enter in the morning they are talking about the love bugs that are on the door and windows—noting this interest, the adult takes the children outside to observe and draw the bugs during small group time and notes a child’s creative representation through drawing and painting.

8. Key experiences provide a guide for on-the-spot interactions with children. For example, the adult sees a child having trouble with the glue--the first impulse is to help. Reflecting on the key experience: solving problems encountered in play, the adult continues to observe the child as she creates a solution rather than intervening.

9. Music and movement are essential elements of active learning. Steady beats are used as signals for transitions.

10. At large group time, the whole group meets together with adult guidance for 10-15 minutes to play games, sing songs, perform basic movement exercises, play musical instruments, or reenact a special event

**Assessment**

1. Assessment is a system of taking anecdotal notes on children’s daily activities and then classifying the observations into categories that reflect the key experiences.

2. The Child Observation Record (COR) is a means of organizing anecdotal records according to key experiences. For example, an observation of “Johnny was playing in the sand filling pots and pans,” provides an anecdotal record of the key experience of filling and emptying and is recorded in the Space category.

3. Anecdotal note taking helps adults learn the key experiences and understand a child’s development.
4. Assessment, through daily observations of children, provides the information needed for daily planning by teams of adults.

5. Key experiences are used to organize and interpret observations of children. When Jonah picked all of the gold keys out of the container and then placed all of the silver keys in a separate pile, the adults made an observation of his classification and sorting.

Classroom (Learning Environment)

1. The active learning environment is divided into well-defined interest areas to encourage distinctive types of play, such as: block area, computer area, reading and writing area, house area, toy area, and art area.

2. Children are free to move materials from interest area to interest area. Dolls from the house area are brought to the water table for a bath, or play dough is brought to the house area as food for the baby.

3. Adults have a space that is separate from the play space that is used for daily team meetings and allows for organization of anecdotal records and Child Observation Records.

4. Shelves and furniture are placed at angles that allow the children and adults to view all areas and materials that are available and makes moving from one area to another easy.

5. Within each interest area, placing materials with similar functions close together helps children see alternatives and think about the different ways of accomplishing tasks. For example, in the art area items that are used for fastening such as glue, tape, paper clips, staplers, string, and yarn will be stored together, while materials used for drawing (crayons, markers, pencils, and chalk) are stored on a separate shelf.

6. Large tables and floor space are available for workspace—with children choosing where they prefer to work during work-time.

7. To maintain an active learning environment, children need a consistent daily classroom routine that incorporates small-group time, large-group time, planning time, work-time, cleanup time, and recall time.
Belief Statements
Developmental Interaction

View of the Child

1. The age and interest of the children determines how long a study of a planned theme should go on.

2. The idea of preparing children to live in a democratic society guides the development and education of the learner.

3. Taking a trip to the train station or the grocery store gives children the chance to gain knowledge about their world.

4. Ideas for the curriculum come from children’s interest in their families, the foods they eat at home, and how they celebrate holidays as well as things they see in their neighborhoods.

5. Children need to make connections between concepts through their study of themes and topics rather than learning isolated facts.

6. Learning cannot be separated from the child’s social and emotional growth.

7. Children use art and writing to recreate and integrate their experiences in social studies, math, and science.

8. School is responsible for helping the child deal with her environment and become a competent member of society.

9. A good part of the child’s learning takes place at home and in the neighborhood.

Role of the Teacher

1. During a walk in a nearby park, the children collect things in paper bags. Back in the classroom, the teacher provides each child with a tray and talks to them about what they have found. She asks the children to “put things that are alike or go together on the same tray”; with her help they then count and graph the objects.

2. The teacher initiates the writing of group books with her students—topics might include a class trip, a special visitor to the class, or the class pet.

3. The teacher, as the developer of the curriculum, explores topics to gather more information about themes that the class will be studying. She takes trips into the community, collects books and materials to become “an expert” on the subject.
4. The teacher provides the children with resources and opportunities for learning by planning trips, collecting props for dramatic play, gathering books, locating resources, and finding experts.

5. Observing that Travis is getting frustrated with a 12-piece puzzle the teacher intervenes and offers him a puzzle that is less complicated.

6. The teacher identifies concepts that the children should learn about and the big ideas that they should think about, teaching skills as needed.

7. The teacher takes on an authority role helping children to understand the needs for rules and regulations, offering other ways to handle situations, and using non-punitive means of redirecting behavior.

8. Teachers plan sessions in which experiences are introduced to teach specific concepts. For example, the teacher plans experiences to help children identify the color orange. After showing the children an orange they play “I spy…orange” looking for the color in the environment and giving children opportunities to paint with red and yellow at the art center.

9. Teachers promote children’s desirable behaviors with a smile, nod or comment such as, “I like the way that you two decided who would paint first.”

**Resources**

1. The community and the people in the community provide children with the opportunity to observe their world. For example a trip to the police station helps children become more aware of their community and those in it.

2. Pictures, posters, videos, software, books, and artifacts gathered by the teacher extend children’s knowledge of the social studies based topics.

3. Many materials are teacher and child created such as posters and class books that are written and illustrated by the children.

4. Materials such as sand, water, blocks, etc. are chosen to provide children with sensory experiences that make the child more aware of her environment.

5. Props for sociodramatic play represent the curriculum and topic that the children are studying. The teacher has placed hard hats and big hollow blocks in the dramatic play area after a trip to a construction site.

6. Materials that provide opportunities to transform objects (i.e., sand, clay, paint, etc.) present opportunities for the child to use and change the physical world.
7. Equipment such as balancing boards, sawhorses, large wooden crates, slides, wagons, tricycles, carts, and swings allow the child to explore the physical world.

8. Wooden unit blocks that include many shapes and props help children explore relationships and a chance to represent their experiences on a smaller scale.

Curriculum

1. Social studies, the relationships between and among people and their environment is at the core or center of the curriculum.

2. Topics for integrated studies take into account the children’s ages, their interests, where they live, and what they see everyday.

3. The teacher identifies concepts that the children should learn about and the big ideas that they should think about.

4. Trips, such as taking the class to the local grocery store to purchase apples for applesauce, are essential elements of the curriculum providing firsthand experiences relevant to their studies.

5. Families are important to the social studies based curriculum in that they provide resources for children’s learning. During a study of careers, Jenny’s father, who works on a fishing boat, comes to school to tell the children about his work.

6. Studies have a culminating experience that brings all the learning together. A class studying families makes a book with pictures and stories and shares the book at a potluck lunch.

7. Using social studies topics as a framework, children have opportunities to learn concepts about the social world and to develop important skills. For example, through a study of families, children explore diversity and have experiences in art, movement, building, cooking, science, reading, writing, math, dramatics, and music in a meaningful context.

8. Trips into the community help to guide the activity in the classroom. The teacher records what the children saw on large charts and displays photographs taken on the trips (stimulating story writing). The children reflect their experiences in the community through their sociodramatic play, artwork, and block building.

9. Language is found throughout the curriculum with children narrating stories, captions for artwork, and summaries of experiences that they have had—often resulting in books and language experience posters.
10. Discussions of current events that children are aware of (e.g., war, violence, exploration, hurricanes) are used to increase awareness, introduce concepts of beginning-end, and cause and effect.

11. Topics of study are often planned using strategies such as webbing or curriculum wheels.

Assessment

1. The assessments help to evaluate the success of the teacher—to determine her ability to create a democratic and integrated curriculum.

2. Children are assessed in terms of their individual potential rather than in terms of developmental milestones or attainment of specific skills.

3. Authentic forms of assessment such as anecdotal records and portfolios are used to view the growth of the child over a lengthy period of time.

4. Parent and family observations of the child are important and useful tools in the authentic assessment of the child.

5. Social characteristics of the learner, such as the ability to work collaboratively and independently, are key aspects of assessment.

6. Assessments recognize individual differences in style and rates of learning as well as the knowledge, experience, and culture of the child.

Learning Environment (Classroom)

1. The learning environment is a reflection of what the teacher values.

2. The classroom is divided into areas that include a sociodramatic play area that can reflect what the children are studying such as a grocery store after a trip to purchase apples.

3. The learning environment includes the traditional classroom, the school as a whole, and the community.

4. When possible the children and their teacher venture into the school or community to see how the world is organized and how it “works.

5. The classroom is organized into activity areas such as a quiet place with soft pillows for reading, a space to do creative and messy projects, a space for one
child to be alone, and at least two spaces that accommodate larger groups of active children.

6. The classroom takes on a homey feel with soft materials such as a couch, rugs, curtains, and pillows—all which reflect the personality of the children in the class.

7. Materials are displayed on the child’s level and signs and charts are hand lettered by teachers and children.

8. The area used for block building is large, often taking up one third to one half of the space the class uses.

Belief Statements

Direct Instruction

View of the Child

1. Children may become over-stimulated by too many objects or too much equipment in the classroom.

2. Children who pay attention to the teacher’s lesson should be rewarded. The child who does not try should have rewards withheld and be told why.

3. Children are willing to work hard for rewards such as praise or food.

4. When a child acts up, pouts, or refuses to respond to the teacher, she should be isolated from the group and put into an environment that is far less enjoyable.

5. By responding as a group to the teacher’s questioning, children have many more opportunities to practice the targeted skill during the instructional period.

6. When a child is being helped as an individual, the other children are not learning—children should answer as a group, in unison, whenever possible.

7. Children should respond in rhythmic unison to aid the teacher in hearing what each child is saying.

8. If a child makes a mistake, the teacher assumes that he will make the same mistake until corrected.

9. Children are required to speak in full sentences, rather than nodding or pointing, to get what they want or when answering questions.
10. Children experience frequent academic success because as they learn a new skill, they apply it to another task, and review the same skill in another task.

**Role of the Teacher**

1. The teacher uses prompts such as clapping, snapping fingers, or raising a hand to signal children when to respond.

2. The teacher must keep the lessons moving at a fast pace to keep the children’s attention and to maintain the momentum of the lesson.

3. The teacher must adhere to a rigid and repetitive presentation pattern that includes modeling or saying the concept, showing the action, and checking for children’s understanding. She then quickly moves on to the next lesson, which begins with a review of skills that were previously covered.

4. The teacher must let the child know when a response is correct or incorrect. For example, if the teacher asks the child to put the yellow pencil on the book and the child puts the red pencil on the book. The teacher should give the correct information in a matter-of-fact-way, such as “No, that is not right. You put the red pencil on the book.”

5. The teacher should assume that while she is working with only one child, the others are not learning anything – she should have children respond in unison as often as possible.

6. The teacher can assist children who are having trouble learning a skill by correcting them and by telling them what they need to do.

7. If the student makes an error, or fails to respond at all, the teacher immediately models how to answer correctly and makes the child respond again.

**Resources**

1. Toys are rewards for completing work and should be limited to form boards, puzzles, drawing and tracing materials, and a miniature house and barn.

2. Paper, crayons, and chalk (but no paint) should be available for expressive play that reinforces the skills that have been learned.

3. Motor toys such as tricycles, wagons, and climbing equipment are not necessary for academic learning.
4. The teacher is provided manuals with scripted lessons that give her step-by-step strategies that include the exact words for her to speak and the child’s likely responses.

5. Teaching materials, such as worksheets, have been developed that provide individual practice for skills that have been taught by the teacher to a small group.

6. A worksheet that has the letter ‘B’ printed on it and contains many incomplete versions of the letter is given to the child to provide practice for writing the letter once the teacher completes the lesson.

7. Teachers are provided with complete instructions for using a system of prompts that signal group responses from children—the teacher raises and lowers her hand to prompt the children to respond to her questions.

Curriculum

1. The curriculum is based on the idea of forcing the child to respond to the teacher to acquire needed skills in language, reading, and/or math.

2. The educational program is designed so that children are consistently motivated with either praise or rewards such as food.

3. Academic skills and strategies need to be taught to children in a systematic, sequential, and highly structured way.

4. Highly structured, teacher-directed lessons proceed at a fast pace which encourages children to pay attention and reduces the errors that they make.

5. Music is used as an extension of language building—only songs that contribute to the development of language should be included in the music portion of the program.

6. The oral language component of the curriculum is aimed at helping children understand teacher instructions. Therefore lessons focus on providing experiences and practice with vocabulary and concepts such as same/different, first/last, and above/below.

7. During guided practice the teacher asks questions, checks for understanding, provides positive feedback through praise and/or rewards, or immediately corrects mistakes.
8. Pre-reading instruction involves development of an understanding of letter-sound relationships; children are taught through scripted lessons the sounds that letters make before they learn the name of the letters.

9. The teacher teaches the concept and continues by teaching what the concept is not. Pointing to “s” in the center of a group of letters, the teacher says, “This is ‘ssss’.” After repeating this several times, the teacher asks the group to identify “s”. Pointing to another letter, the teacher says, “This is not ‘sssss’”. She continues to point to letters and asks each child, “Is this ‘sssss’?" She reinforces the children's correct answers and corrects any mistakes that they make.

Assessment

1. Assessment is used to identify children who are having trouble mastering specific skills and concepts or children who are progressing at a very slow pace.

2. Tests that assess children’s performance are given after phases of instruction.

3. By studying children’s performance on criterion-referenced tests, the teacher can see what areas of instruction require more review and reinforcement.

4. Worksheets and exercises that a child completes after small group instruction provides the teacher with an indication of mastery.

5. Teachers assess whether a student has attained a skill during a lesson through observation and questioning. As children repeat the words doll, will, hill, and mill the teacher checks for the placement of their tongues when pronouncing “ll”. If needed, she reminds the children to put their tongues behind their front teeth.

6. Assessment is used to aide teachers with placing children into homogeneous groups for instruction.

Learning Environment (Classroom)

1. The work area should be free from excess noise, allowing a small group of children to concentrate on the teacher's cues and the lesson that she is teaching.

2. The classroom is very plain. Only items that provide practice for skills that have been taught by the teacher are available to the children.

3. Uncluttered surroundings help to ensure that children will not get caught up in the unproductive activity that equipment and object-filled rooms promote.
4. Small groups of approximately five to ten children rotate through intensive lessons with the teacher and then return to tables for work that reinforces the skills taught in the small group.

5. For instruction, the teacher is seated in front of a small group of children who are within an arms reach. With the close proximity, the teacher can assess children and redirect them when needed.

6. Small groups of children are involved in intensive 15- to 20-minute periods of drill and practice under the direction of the teacher.

Belief Statements
Montessori

View of the Child

1. The child is free to actively use learning materials and objects that have been demonstrated by the teacher.

2. After the child has had a lesson on how to use a piece of equipment, she should be permitted many hours, days, or weeks to use the materials that hold her attention.

3. Development of the young child is marked by six overlapping sensitive periods that include sensory perception, language, order, small detail, movement, and social relations.

4. The child should be involved in realistic work activities, such sweeping sawdust or washing tables, rather than sociodramatic play.

5. Through activities, such as arranging flowers or building a pink tower, children learn habits of work and order.

6. Through auto-education and the use of carefully selected learning materials such as the buttoning frame, the child is allowed to learn at his own rate, at his own level and in his own way, to develop a sense of his own worth, and to enjoy success.

7. The control of error designed in didactic equipment, such as the graduated cylinders, enables the child to see his own mistakes and make necessary changes.
**Role of the Teacher**

1. The teacher names the Pink Tower, shows the child how to carry the materials to the floor mat. She then looks over the cubes intently, picks a cube and compares it to the other pink cubes. Repeating the process, without speaking and being very deliberate with her actions, she models the entire activity. She then offers the child a turn to do the very same actions while observing.

2. Rather than being the provider of knowledge, the teacher is an observer of the child’s progress in the use of specially designed learning materials.

3. The teacher limits her interactions with the children because praise or attention from the teacher interrupts the process of auto-education.

4. Through observation the teacher identifies children as ready for instruction in the use of didactic materials such as button-frames, pouring beans between two jugs, or building the Brown Stair.

5. The teacher is responsible for preparing the classroom environment for the child’s work, providing a table and chair or a rug for each child and well-organized learning equipment.

6. The teacher organizes the classroom into areas that includes the practical life area with exercises such as lifting, carrying, and putting down a tray with objects on it, arranging flowers, and polishing shoes.

**Resources**

1. Materials, such as sound boxes or graduated cylinders, are placed in the classroom for the child’s individual use; providing the child with the opportunity to practice skills demonstrated by the teacher.

2. The design of the learning materials allows the child to see by the result of his work whether he has succeeded; the child can use the material without the aid of the teacher or other outside help.

3. Learning materials, such as those that develop the child’s senses, are designed to be used by one person in a defined space such as on a small rug or at a table that seats one child.

4. Materials are designed to focus on exercises for daily living (buttoning, zipping, and tying), sensorial development (Pink Tower, Brown Stair, and Color Boxes, and conceptual development (Classified Pictures, Sandpaper Letters, and Spindles).
5. Learning equipment is designed for a specific use, which is clearly indicated by the design of the material. The Red Rods help the child develop visual discrimination in terms of length.

6. Equipment is simple in appearance and reflects colors found in nature such as the Brown Stairs, Pink Tower, or the natural wood of the graduated cylinders.

7. The design of the learning materials allows for easy handling by child-sized hands and arms.

8. Equipment is made of material such as wood and is designed to be aesthetically appealing to children.

**Curriculum**

1. Through the Fundamental Lesson the teacher presents the learning materials to the child using simple and few words and demonstrating how the equipment is to be used.

2. Exercises in daily living (physical care of the person and the environment), sensory discrimination, academics (language and math), and cultural and artistic pursuits are the main components of the curriculum and are supported with materials that actively involve the child.

3. Classroom activities include exercises in practical life such as pouring, folding, polishing, buttoning, and sweeping the floor.

4. Curriculum is not imposed on the child but is built into the learning materials, for example exercises in daily living such as shoe polishing or floor sweeping encourage self-care skills and competence in daily activities.

5. For the most part there are few formal group activities; instead children are encouraged to work with materials in a defined space such as on a small rug or at a small table.

6. Exercises in daily living are the first activities that the child is introduced to. They are simple, precise tasks that the he has seen the adults doing at home.

7. Sensory exercises using materials such as the Thermic Bottles or the Sound Boxes assists the child in the development of his intelligence, which depends on the organization of the sense perceptions.

8. The goal of the academic materials is not to build a store of knowledge; rather it is to satisfy the child’s innate desire for learning.
Assessment

1. The teacher observes the child’s interaction with the didactic material to determine if the timing of the lesson was appropriate.

2. The teacher closely observes the student to see if the child is exploring new materials and provides a lesson on the use of the new material.

3. If use of the didactic materials is inappropriate the teacher provides another lesson in the use of the materials or suggests that the child try again at a later time.

4. Within the Fundamental Lesson, the teacher checks the child’s understanding by asking the child to imitate, show, or name a concept or material. If she is not able to successfully complete the Fundamental Lesson, the teacher discontinues the lesson and returns to it at a future time when the child appears ready.

5. The child receives immediate feedback from the design of the learning materials, which eliminates the importance of right and wrong answers and teacher feedback.

6. Observation of the child focuses on three areas: the development of work habits, the order or disorder of conduct, and the development of self-discipline.

7. Because materials are designed so that errors are obvious, the teacher need not monitor every action of each child, instead she is free to observe the child’s development and patterns in behavior.

Learning Environment (Classroom)

1. Tables are positioned to facilitate individual work rather than group or whole class instruction and floor space is available to spread out small rugs on which to work.

2. Children have the freedom to work with the equipment that is available in the classroom, such as graduated cylinders, for extended periods of time and within the limits that are part of the design of the materials.

3. The child knows where to go to find the materials of his choice. Learning materials are grouped according to focus areas such as practical living or sensory discrimination and are ordered by the difficulty or degree of complication of the materials.
4. Children participate in keeping the classroom orderly and clean by putting material neatly back in the appropriate place as well as sweeping and mopping the classroom and wiping tables.

5. Classrooms are furnished very simply with wooden furniture and low open shelves to house the learning materials. In keeping with the real world, where everyone cannot have the same thing at once, there is only one piece of each type of learning material in the classroom.
APPENDIX B

Panel Instructions:

Instructions for the Classification Procedure
Instructions for the Sorting Procedure
Because of your expertise in early childhood theory and practice, you have been selected as an panelist in the study entitled: *The Development and Field Testing of the Early Childhood Curricular Beliefs Inventory (ECCBI): An Instrument to Identify Preservice Teachers’ Early Childhood Curricular Beliefs.*

You are being asked to classify statements in the areas of differentiation (view of the child, role of the teacher, resources, curricular emphasis, assessment, and learning environment) as to the curricular approach that it best describes or represents (Developmental-Interaction, Montessori, High/Scope, Direct Instruction or Not Identified (NI)).

Please know how much your assistance is greatly appreciated!

Most sincerely,
Materials:
You have been provided with the following materials:

Six envelopes representing six areas of differentiation and labeled as follows:

- View of the Child
- Role of the Teacher
- Resources
- Curricular Emphasis
- Assessment
- Learning Environment.

Each envelope contains a packet of cards with statements representing each of the four approaches: Developmental-Interaction, Montessori, High/Scope, and Direct Instruction.

Cards are color-coded, according to expert, and contain initials identifying the area of differentiation. Each card carries a numeral (from 1 to 179) that represents a number randomly assigned to each statement—thus allowing the researcher to identify each statement as to approach.

In addition, you have been supplied with five envelopes labeled as follows:

- Developmental-Interaction
- Montessori
- High/Scope
- Direct Instruction
- NI: Not Identified.
Directions:

• Consider one envelope (area of differentiation) at a time.
• Read each statement and classify it as representing, or describing, one of the following: Developmental-Interaction, Montessori, High/Scope, Direct Instruction, or NI (not identified).
• Place the card in the envelope labeled with the chosen approach, or NI (not identified).

Upon completion of all six areas, seal each envelop [labeled Developmental-Interaction, Montessori, High/Scope, Direct Instruction, or NI (not identified)] and notify the researcher that the classification of the statements has been completed.

Melanie Jensen
e-mail: jensenm@tcc.fl.edu
phone: 201-8908 (office) or 893-8202 (home).

Thank you so much for sharing your expertise!
Appendix B

Instructions for the Sorting Procedure

Because of your expertise in early childhood theory and practice, you have been selected as an panelist in the study entitled: *The Development and Field Testing of the Early Childhood Curricular Beliefs Inventory (ECCBI): An Instrument to Identify Preservice Teachers’ Early Childhood Curricular Beliefs.*

For this phase of the study, you are being asked to sort statements previously identified in the classification phase. Statements will be sorted as to how well they describe the specified curricular model.

Please know how much your assistance is greatly appreciated!

Most sincerely,
Materials:
You have been provided with the following materials:
Four packets representing the four curricular models, labeled as follows:

- High/Scope
- Developmental Interaction
- Direct Instruction
- Montessori

Each packet contains six envelopes labeled as follows:

- View of the Child
- Role of the Teacher
- Resources
- Curricular Emphasis
- Assessment
- Learning Environment

These envelopes contain cards (belief statements) that have been previously classified by all three experts as representing the particular curricular model.

As before, cards are color-coded, according to expert, and contain initials identifying the area of differentiation* and curricular model**. Each card carries a numeral (from 1 to 179) that represents a number randomly assigned to each statement.

* Areas of differentiation:  ** Curricular Model
  VC= View of the Child               M = Montessori
  R = Resources                       DI = Direct Instruction
  RT= Role of the Teacher             HS = High/Scope
  C = Curriculum                      Dev= Developmental
  LE = Learning Environment           Interaction
  A = Assessment
In addition, you have been supplied with three (3) card-file boxes labeled as follows:

- Describes the Model BEST
- Describes the Model SOMEWHAT
- Describes the Model LEAST

**Directions:**

- Consider one curricular model and area of differentiation (e.g., Montessori/View of the Child) at a time.
- **Before sorting** read all of the statements in the area of differentiation by curricular model and sort them as: “Describes the Model BEST”, or “Describes the Model SOMEWHAT”, or “Describes the Model Least”.
- Place the card in the corresponding card-file box.

Upon completion of sorting all statements, please seal the three boxes and seal with the enclosed stickers. E-mail or call Melanie Jensen when you have completed the sorting, OR should you have any questions.

E-mail: jensenm@tcc.fl.edu
phone: 201-8908 (office) or 893-8202 (home).

Thank you so much for sharing your expertise!
APPENDIX C

72-item Early Childhood Curricular Beliefs Inventory (ECCBI)
Early Childhood Curricular Beliefs Inventory (ECCBI)

Please give us information about yourself. Circle the most appropriate answer.

1. Gender: Male Female

2. Age (years): 18-24 25-30 31-35 36-40 41-45 50+

3. Degree you are currently seeking: Bachelor's Master's

3a. If seeking a Master's degree what was your undergraduate major: __________________

4. Type of Institution: State University Private College

5. Area of Certification: Elementary Ed Early Childhood

You are going to rate your belief about each statement (1-72) using the rating scale below. Write your rating (number) in the box to the left of the item number.

Rate each item quickly and rate every statement!

<table>
<thead>
<tr>
<th>Strongly Believe</th>
<th>Believe Somewhat</th>
<th>Unsure</th>
<th>Don't Believe</th>
<th>Do Not Believe at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

This is what I believe about children and their education:

☐ 1. By responding as a group to the teacher’s questioning, children have many more opportunities to practice the targeted skill during the instructional period.

☐ 2. Children learn best when they have a consistent daily routine that incorporates plan-do-review, small-group time, and large-group time.

☐ 3. Children who pay attention to the teacher’s lesson should be rewarded. The child who does not try should have rewards withheld and be told why.

☐ 4. Children need to make connections between concepts through their study of themes and topics rather than learning isolated facts.

☐ 5. The child should be involved in realistic work activities, such sweeping sawdust or washing tables, rather than socio-dramatic play.

☐ 6. Having the child recall what she did during work time allows her to reflect on, talk about, and exhibit what she has done.
7. Learning cannot be separated from the child’s social and emotional growth.

8. The age and interest of the children determines how long a study of a planned theme should go on.

9. Development of the young child is marked by six overlapping sensitive periods that include sensory perception, language, order, small detail, movement, and social relations.

10. Children are willing to work hard for rewards such as praise or food.

11. Through activities, such as arranging flowers or building a pink tower, children learn habits of work and order.

12. Planning with children helps them to picture what they want to do before they begin.

<table>
<thead>
<tr>
<th>Strongly Believe</th>
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<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

This is what I believe about the role of teachers:

13. The teacher, as the developer of the curriculum, explores topics to gather more information about themes that the class will be studying. She takes trips into the community, collects books and materials to become “an expert” on the subject.

14. Through observation the teacher identifies children as ready for instruction in the use of didactic materials such as button-frames, pouring beans between two jugs, or building the Brown Stair.

15. The teacher initiates the writing of group books with her students—topics might include a class trip, a special visitor to the class, or the class pet.

16. During work time, adults pay close attention to the children, checking the status of the plans that children have made, looking for key experiences, recording anecdotal notes and being actively involved with children.

17. The teacher names the Pink Tower, shows the child how to carry the materials to the floor mat. She then looks over the cubes intently, picks a cube and compares it to the other pink cubes. Repeating the process, without speaking and being very deliberate with her actions, she models the entire activity. She then offers the child a turn to do the very same actions while observing.

18. The teacher must keep the lessons moving at a fast pace to keep the children’s attention and to maintain the momentum of the lesson.
19. The teacher organizes the classroom into areas that includes the practical life area with exercises such as lifting, carrying, and putting down a tray with objects on it, arranging flowers, and polishing shoes.

20. Adults meet and plan each day, using their daily observations and the key experiences as guides to develop small and large group experiences.

21. The teacher uses prompts such as clapping, snapping fingers, or raising a hand to signal children when to respond.

22. The teacher provides the children with resources and opportunities for learning by planning trips, collecting props for dramatic play, gathering books, locating resources, and finding experts.

23. The teacher must adhere to a rigid and repetitive presentation pattern that includes modeling or saying the concept, showing the action, and checking for children’s understanding. She then quickly moves on to the next lesson, which begins with a review of skills that were previously covered.

24. Key experiences guide adults as they observe, support, and plan activities for children and as they evaluate the growth of children.

25. Learning equipment is designed for a specific use, which is clearly indicated by the design of the material. The Red Rods help the child develop visual discrimination in terms of length.

26. Materials and labels are introduced throughout the school year during planning and small-group times and are then placed in the interest area for the children’s use.

27. Materials are designed to focus on exercises for daily living (buttoning, zipping, and tying), sensorial development (Pink Tower, Brown Stair, and Color Boxes, and conceptual development (Classified Pictures, Sandpaper Letters, and Spindles).

28. A worksheet that has the letter ‘B’ printed on it and contains many incomplete versions of the letter is given to the child to provide practice for writing the letter once the teacher completes the lesson.

29. Props for socio-dramatic play represent the curriculum and topic that the children are studying. The teacher has placed hard hats and big hollow blocks in the dramatic play area after a trip to a construction site.

30. The community and the people in the community provide children with the opportunity to observe their world. For example a trip to the police station helps children become more aware of their community and those in it.

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This is what I believe about resources for the classroom:

25. Learning equipment is designed for a specific use, which is clearly indicated by the design of the material. The Red Rods help the child develop visual discrimination in terms of length.

26. Materials and labels are introduced throughout the school year during planning and small-group times and are then placed in the interest area for the children’s use.

27. Materials are designed to focus on exercises for daily living (buttoning, zipping, and tying), sensorial development (Pink Tower, Brown Stair, and Color Boxes, and conceptual development (Classified Pictures, Sandpaper Letters, and Spindles).

28. A worksheet that has the letter ‘B’ printed on it and contains many incomplete versions of the letter is given to the child to provide practice for writing the letter once the teacher completes the lesson.

29. Props for socio-dramatic play represent the curriculum and topic that the children are studying. The teacher has placed hard hats and big hollow blocks in the dramatic play area after a trip to a construction site.

30. The community and the people in the community provide children with the opportunity to observe their world. For example a trip to the police station helps children become more aware of their community and those in it.
31. The storage of materials promotes the find-use-return cycle, with materials stored in clear containers that have a picture or item attached to match with the shelf label.

32. Key experiences are tools for assessing materials available to children—resources can be chosen to support the problem solving and active learning of the children.

33. Teaching materials, such as worksheets, have been developed that provide individual practice for skills that have been taught by the teacher to a small group.

34. Materials such as sand, water, blocks, etc. are chosen to provide children with sensory experiences that make the child more aware of her environment.

35. The teacher is provided manuals with scripted lessons that give her step-by-step strategies that include the exact words for her to speak and the child’s likely responses.

36. Materials, such as sound boxes or graduated cylinders, are placed in the classroom for the child’s individual use; providing the child with the opportunity to practice skills demonstrated by the teacher.

<table>
<thead>
<tr>
<th>Strongly Believe</th>
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</table>

This is what I believe about curriculum (what is taught and how it is taught):

37. For the most part there are few formal group activities; instead children are encouraged to work with materials in a defined space such as on a small rug or at a small table.

38. Academic skills and strategies need to be taught to children in a systematic, sequential, and highly structured way.

39. Curriculum is not imposed on the child but is built into the learning materials, for example exercises in daily living such as shoe polishing or floor sweeping encourage self-care skills and competence in daily activities.

40. During guided practice the teacher asks questions, checks for understanding, provides positive feedback through praise and/or rewards, or immediately corrects mistakes.

41. Classroom activities include exercises in practical life such as pouring, folding, polishing, buttoning, and sweeping the floor.

42. The curriculum is built around active learning periods that include the plan-do-review sequence, small-group times, and large-group times.

43. Highly structured, teacher-directed lessons proceed at a fast pace which encourages children to pay attention and reduces the errors that they make.
44. Using social studies topics as a framework, children have opportunities to learn concepts about the social world and to develop important skills. For example, through a study of families, children explore diversity and have experiences in art, movement, building, cooking, science, reading, writing, math, dramatics, and music in a meaningful context.

45. Five basic principles – active learning, positive adult-child interactions, the learning environment, a consistent daily routine, and assessment form the framework for the curriculum.

46. Social studies, the relationships between and among people and their environment, is at the core or center of the curriculum.

47. Families are important to the social studies based curriculum in that they provide resources for children's learning. During a study of careers, Jenny's father, who works on a fishing boat, comes to school to tell the children about his work.

48. Each child begins their work-time by deciding what to do and sharing these plans with an adult.

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<tr>
<th>Strongly Believe</th>
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This is what I believe about the assessment of children:

49. The child receives immediate feedback from the design of the learning materials, which eliminates the importance of right and wrong answers and teacher feedback.

50. Authentic forms of assessment such as anecdotal records and portfolios are used to view the growth of the child over a lengthy period of time.

51. Assessment, through daily observations of children, provides the information needed for daily planning by teams of adults.

52. The Child Observation Record (COR) is a means of organizing anecdotal records according to key experiences. For example, an observation of "Johnny was playing in the sand filling pots and pans," provides an anecdotal record of the key experience of filling and emptying and is recorded in the Space category.

53. By studying children's performance on criterion-referenced tests, the teacher can see what areas of instruction require more review and reinforcement.

54. Social characteristics of the learner, such as the ability to work collaboratively and independently, are key aspects of assessment.

55. Worksheets and exercises that a child completes after small group instruction provides the teacher with an indication of mastery.
56. Anecdotal note taking helps adults learn the key experiences and understand a child’s development.

57. If use of the didactic materials is inappropriate the teacher provides another lesson in the use of the materials or suggests that the child try again at a later time.

58. Children are assessed in terms of their individual potential rather than in terms of developmental milestones or attainment of specific skills.

59. Assessment is used to aide teachers with placing children into homogeneous groups for instruction.

60. Within the Fundamental Lesson, the teacher checks the child’s understanding by asking the child to imitate, show, or name a concept or material. If she is not able to successfully complete the Fundamental Lesson, the teacher discontinues the lesson and returns to it at a future time when the child appears ready.

<table>
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<tr>
<th>Strongly Believe</th>
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This is what I believe about the learning (classroom) environment:

61. Large tables and floor space are available for workspace—with children choosing where they prefer to work during work-time.

62. The classroom takes on a homey feel with soft materials such as a couch, rugs, curtains, and pillows—all which reflect the personality of the children in the class.

63. The classroom is divided into areas that include a socio-dramatic play. The teacher sets up the area to reflect what the children are studying—such as a grocery store.

64. The work area should be free from excess noise, allowing a small group of children to concentrate on the teacher’s cues and the lesson that she is teaching.

65. Adults have a space that is separate from the play space that is used for daily team meetings and allows for organization of anecdotal records and Child Observation Records.

66. Children have the freedom to work with the equipment that is available in the classroom, such as graduated cylinders, for extended periods of time and within the limits that are part of the design of the materials.

67. When possible the children and their teacher venture into the school or community to see how the world is organized and how it "works."
68. Small groups of approximately five to ten children rotate through intensive lessons with the teacher and then return to tables for work that reinforces the skills taught in the small group.

69. The child knows where to go to find the materials of his choice. Learning materials are grouped according to focus areas such as practical living or sensory discrimination and are ordered by the difficulty or degree of complication of the materials.

70. To maintain an active learning environment, children need a consistent daily classroom routine that incorporates small-group time, large-group time, planning time, work-time, cleanup time, and recall time.

71. Small groups of children are involved in intensive 15- to 20-minute periods of drill and practice under the direction of the teacher.

72. Classrooms are furnished very simply with wooden furniture and low open shelves to house the learning materials. In keeping with the real world, where everyone cannot have the same thing at once, there is only one piece of each type of learning material in the classroom.
APPENDIX D

72-item ECCBI Score Sheet
Interpretation of Scores
### SCORING

Referring back at the instrument, write the rating for each statement in the space provided.

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<td><strong>Teacher:</strong></td>
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Total each Column:  A = _____  B = _____  C = _____  D = _____

Which column has the lowest score? ______ This low score identifies the curricular approach that reflects your beliefs. See the next page for descriptions of these approaches.
Curricular Approaches and Models

A = Behavioral (Direct Instruction)
Based on the work of Pavlov, Thorndike, Skinner, etc.
- Academic achievement is the focus of schooling.
- The role of the teacher is authoritative—the teacher plans and carries out all activities.
- Children receive knowledge from the teacher.
- Grouping children according to ability helps to maintain the fast-paced learning.
- Rewards and praise keep children motivated.
- Resources, such as workbooks and worksheets, are mainstays of the classroom.
- Teacher guides provide exact wording of explanations and questions that work with a wide range of students.
- Criterion-referenced tests, worksheets, and verbal responses provide checks of children’s progress and identify areas that need remediation.
- The classroom is highly structured, work oriented and fully focused on academics. It should be free of clutter and plain. This prevents the over stimulation of children and discourages roaming and exploration.

B = Developmental Interaction (Bank Street)
Based on the work of Dewey, Erikson, A. Freud, and S. Freud.
- The goal of education should not be only intellectual but takes into account the child’s social, emotional, and physical growth—development as a social being is most important.
- Children are seen as curious beings that should be allowed to explore and experiment in the classroom.
- The primary role of the teacher is to observe children, ask them questions to help guide learning, and plan experiences, especially through play.
- The community plays an important role in the education of the child—field trips are important parts of the curriculum—social studies concepts act as a guide for the curriculum.
- Assessment is not based on standardized tools, but instead is based on teacher observations and portfolios of children’s work.
- Rooms are arranged into learning centers that allow children to pursue special projects such as blocks, dramatic play, construction, art, math, and reading. Flexible schedules allow children time for exploration and play.

C = Sensory Cognitive (Montessori)
Based on the work of Montessori
- The classroom is self-regulated by the children. Children have the chance to guide their own learning through auto-education and at their own pace.
• Specially designed equipment (didactic material) provides the core of the curriculum.
• The teacher is an observer of children’s development. S/he serves as a resource, providing guidance in the use of the materials.
• The materials and curriculum are based on practical life activities, development of the senses, conceptual development, and character development.

**D = Cognitive Developmentalist (HighScope)**

Based on the work of Piaget
  • Intellectual growth is the most important component in children’s development.
  • Almost all aspects of one’s life are influenced by thought and language.
  • Children construct knowledge through active involvement with people, things, and ideas.
  • The teacher’s role is to follow the child’s interests -- this is the basis for the curriculum. Teachers join into the children’s activities as appropriate.
  • Planning is done daily as the teacher sees what the child is most interested in.
  • The child’s growth is based on developmental milestones that have been identified as areas of intellectual growth (logic, spatial awareness, language, problem-solving, etc.).
  • A consistent routine, the same activities, at the same time of day is necessary for children.
  • Materials are very open-ended and can be used as the children want.
APPENDIX E

Human Subjects Approval

Informed Consent Form
APPROVAL MEMORANDUM

Human Subjects Committee

Date: 2/6/2003

Melanie Jensen 440
Frank Shaw Rd.
Tallahassee, FL 32312

Dept: Elementary and Early Childhood Education

From: David Quadagno, Chair

Re: Use of Human Subjects in Research
The Development and Field Testing of the Early Childhood Curricular Beliefs Inventory (ECCBI): An Instrument To Identify Preservice Teachers' Early Childhood Curricular Beliefs

The forms that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Secretary, the Chair, and two members of the Human Subjects Committee. Your project is determined to be exempt per 45 CFR § 46.101(b) 2 and has been approved by an accelerated review process.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If the project has not been completed by 2/5/2004 you must request renewed approval for continuation of the project.

You are advised that any change in protocol in this project must be approved by resubmission of the project to the Committee for approval. Also, the principal investigator must promptly report, in writing, any unexpected problems causing risks to research subjects or others.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols of such investigations as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Protection from Research Risks. The Assurance Number is IRB00000446.

Cc: Charles Wolfgang,
PhD HSC No. 2003.035
Informed Consent Form

Please read this document carefully before you decide to participate in this study.
I am freely and voluntarily and without element of force or coercion, consent to be a participant in the research project entitled "The Development and Field Testing of the Early Childhood Curricular Beliefs Inventory: An Instrument to Identify Preservice Teachers' Early Childhood Curricular Beliefs".

Purpose of the research study:
This research is being conducted by Melanie Jensen, a graduate student in Early Childhood Education at the Florida State University. I understand that the purpose of this research project is to develop an instrument to explore the early childhood curricular beliefs of preservice teachers. I understand that if I participate in the project, I will be asked to respond to statements about early childhood curriculum as well as general questions about myself.

What you will be asked to do in the study:
I understand that I will be asked to fill out paper and pencil questionnaires. The total time commitment would be about 30 minutes. There is no monetary compensation provided for participating in this study. While the results of this study may not directly benefit you today, the study may benefit future teachers. The knowledge gained from the study may help teacher educators better design instruction.

Risk:
I understand that there are no known risks for participating in this study.

Voluntary participation:
I understand that my participation is totally voluntary. There is no penalty for not participating.

Right to withdraw:
I can withdraw consent at any time without penalty and have the results of my participation, to the extent that it can be identified as mine, returned to me, removed from the records, or destroyed. I have been given an opportunity to ask questions about this study. Questions, if any, have been answered to my satisfaction.

Confidentiality:
I understand that all my answers to the questions will be kept confidential. All materials resulting from this study (participant codes and completed instruments) will be kept by the researcher in a secure location and will be destroyed within five years of the completion of the study. I also understand that information obtained during the course of this study will remain confidential, to the extent allowed by law.

Whom to contact if you have questions about the study:
Melanie Jensen, Researcher -or- Charles Wolfgang, PhD -or- Human Subjects Committee
jensenm@tcc.fl.edu Major Professor Florida State University
850-201-8908 850-644-8484 2035 E. Paul Dirac Dr.
115 Stone Building 115 Stone Building Box 15
Florida State University Florida State University Tallahassee, FL 32310
Tallahassee, FL 32306

Results of the study will be sent to me upon request.

I have read and understand this consent form.

Participant's Signature: ___________________ Date: ___________________
APPENDIX F

Practitioner Instructions
Appendix F

Practitioner Letter

March 29, 2003

Dear Teacher,

You are being asked to participate in a research study that will ultimately explore the beliefs of preservice teachers regarding early childhood curriculum. This research is a part of my doctoral studies at Florida State University in the area of early childhood education and teacher preparation.

As a teacher and teacher educator, I am very interested in the beliefs that my students hold and how these beliefs may ultimately affect their classroom practices. The beliefs that preservice teachers bring to their training provide the lens through which they view all aspects of teaching. I am in the process of developing an instrument that will assist teacher educators in identifying the curricular beliefs of preservice teachers and will assist in promoting dialog regarding beliefs and practices.

Your expertise regarding the INSERT AREA OF TRAINING is needed to aid in the development of statements for the belief instrument—to explore whether statements are representative of the INSERT AREA OF TRAINING. Enclosed is a list of statements that describe various aspects of the early childhood classroom and curriculum: the view of the child, the role of the teacher, classroom resources, curricular emphasis, assessment, and the learning environment. You are being asked to respond to each statement in regard to your area of training—the INSERT AREA OF TRAINING. Please note that your participation in this study is voluntary. However, your responses are vital to my research. If you choose to participate, please read each statement quickly and respond as to its representation of your area of training using the enclosed Likert scale. In other words, “How well does the statement represent the model in which you are trained?” It should take approximately thirty minutes to complete the inventory.

Upon completion, please return the instrument in the enclosed stamped and addressed envelope. It is my hope that you will choose to participate and that you might return your responses by April 10, 2003. I want to thank you for your assistance and willingness to participate in the initial phase of this study. Your participation is invaluable to me!

Sincerely,

Melanie K. Jensen
(850) 893-8202
jensenm@tcc.fl.edu
Appendix F

Practitioner Instructions

Dear Practitioner,

As part of my doctoral research, I am developing an instrument that explores the beliefs of teacher education students regarding early childhood curriculum. Your assistance is needed in the development of statements for the inventory. You are being asked to complete the following steps:

1. Complete the Informed Consent form
2. Complete the Inventory:

   A. You will be using the following scale

<table>
<thead>
<tr>
<th>Strongly Represents My Training</th>
<th>Represents Somewhat</th>
<th>Unsure</th>
<th>Does Not Represent My Training</th>
<th>Absolutely Does NOT Represent</th>
</tr>
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<tr>
<td>1</td>
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<td>3</td>
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<td>5</td>
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</tbody>
</table>

   B. **Base your rating strictly on your training in the insert model model**

   C. Rate each item *quickly* and rate *every* item

   D. Return the instrument and consent form in the attached stamped envelope

Thank you for helping me with my research—your participation is invaluable to me!
Appendix F

Practitioner Demographic Survey

Please circle the most appropriate answer.

1. Gender:    Male    Female

2. Age (years):  25-30  31-35  36-40  41-45  46-50  50+

3. What degree do you hold?  Bachelor’s  Master’s  EdS  PhD

4. Area of Certification:  Elementary Ed  Early Childhood Ed

Thank you!
APPENDIX G

Preservice Teacher Instructions
Appendix G

Preservice Teacher Demographic Survey

Please circle the most appropriate answer.

1. Gender: Male Female

2. Age (years): 18-24 25-30 31-35 36-40 41-45 50+

3. Degree you are currently seeking: Bachelor's Master's

3a. If seeking a Master's degree what was your undergraduate major? __________

4. Type of Institution: State University Private College

5. Area of Certification: Elementary Ed Early Childhood

6. How many semesters have you been in the education program?
   1 2 3 4 5

7. Do you have children of your own? Yes No
   If yes, what is (are) the age(s): ______

8. Other than for your course requirements, do you (or have you) worked with children? YES NO
   If yes, what was the position you held? __________________________

   What were the ages of the children? __________________________

Thank you!
Appendix G

Preservice Teacher Instructions

Dear Student,

For my doctoral research I am developing an instrument that looks at the beliefs of teacher education students about curriculum.

1. Complete the Informed Consent form -place it in the labeled box.

2. Complete the Beliefs Inventory:

   A. You will be using the following rating scale:

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<thead>
<tr>
<th>Strongly Believe</th>
<th>Believe Somewhat</th>
<th>Unsure</th>
<th>Don't Believe</th>
<th>Do Not Believe at all</th>
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   B. Base your rating on what you believe about the information given in each statement.

   C. Rate each item quickly and rate every item.

There are NO right or wrong answers. The ratings will be used to make the instrument more meaningful.

Thank you for helping me with my research, your participation is invaluable to me!
APPENDIX H

24-Item Shortened Version
Early Childhood Curricular Beliefs Inventory-SV (ECCBI-SV)
with Score Sheet
Early Childhood Curricular Beliefs Inventory-short form (ECCBI-S)

Please give us information about yourself.  Circle the most appropriate answer.

1. Gender:  Male       Female

2. Age (years):  18-24    25-30     31-35    36-40    41-45    50+

3. Degree you are currently seeking:  Bachelor's    Master's

   3a. If seeking a Master's degree what was your undergraduate major:  
   

4. Type of Institution:  State University    Private College

5. Area of Certification:  Elementary Ed    Early Childhood

Thank you!

You are now going to rate your belief about each statement using the rating scale below.  Write your rating (number) in the box next to the item number.

Rate each item quickly and rate every statement!

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<tr>
<th>Strongly Believe: 1</th>
<th>Believe Somewhat: 2</th>
<th>Unsure: 3</th>
<th>Don’t Believe: 4</th>
<th>Do Not Believe at all: 5</th>
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☐ 1. The teacher names the Pink Tower, shows the child how to carry the materials to the floor mat. She then looks over the cubes intently, picks a cube and compares it to the other pink cubes. Repeating the process, without speaking and being very deliberate with her actions, she models the entire activity. She then offers the child a turn to do the very same actions while observing.

☐ 2. Five basic principles – active learning, positive adult-child interactions, the learning environment, a consistent daily routine, and assessment form the framework for the curriculum.

☐ 3. The teacher, as the developer of the curriculum, explores topics to gather more information about themes that the class will be studying. She takes trips into the community, collects books and materials to become “an expert” on the subject.

☐ 4. Materials, such as sound boxes or graduated cylinders, are placed in the classroom for the child’s individual use; providing the child with the opportunity to practice skills demonstrated by the teacher.
5. Classrooms are furnished very simply with wooden furniture and low open shelves to house the learning materials. In keeping with the real world, where everyone cannot have the same thing at once, there is only one piece of each type of learning material in the classroom.

6. Families are important to the social studies based curriculum in that they provide resources for children’s learning. During a study of careers, Ray’s father, who works on a fishing boat, comes to school to tell the children about his work.

7. During work time, adults pay close attention to the children, checking the status of the plans that children have made, looking for key experiences, recording anecdotal notes and being actively involved with children.

8. Planning with children helps them to picture what they want to do before they begin.

9. Children who pay attention to the teacher’s lesson should be rewarded. The child who does not try should have rewards withheld and be told why.

10. For the most part there are few formal group activities; instead children are encouraged to work with materials in a defined space such as on a small rug or at a small table.

11. Highly structured, teacher-directed lessons proceed at a fast pace which encourages children to pay attention and reduces the errors that they make.

12. The teacher uses prompts such as clapping, snapping fingers, or raising a hand to signal children when to respond.

13. Children learn best when they have a consistent daily routine that incorporates plan-do-review, small-group time, and large-group time.

14. Using social studies topics as a framework, children have opportunities to learn concepts about the social world and to develop important skills. For example, through a study of families, children explore diversity and have experiences in art, movement, building, cooking, science, reading, writing, math, dramatics, and music in a meaningful context.

15. If the child uses the didactic materials inappropriately, the teacher provides another lesson in the use of the materials or suggests that the child try again at a later time.

16. The teacher initiates the writing of group books with her students—topics might include a class trip, a special visitor to the class, or the class pet.

17. The teacher must keep the lessons moving at a fast pace to keep the children’s attention and to maintain the momentum of the lesson.

18. Materials are designed to focus on exercises for daily living (buttoning, zipping, and tying), sensorial development (Pink Tower, Brown Stair, and Color Boxes, and conceptual development (Classified Pictures, Sandpaper Letters, and Spindles).
19. The curriculum is built around active learning periods that include the plan-do-review sequence, small-group times, and large-group times.

20. Academic skills and strategies need to be taught to children in a systematic, sequential, and highly structured way.

21. The teacher must adhere to a rigid and repetitive presentation pattern that includes modeling or saying the concept, showing the action, and checking for children’s understanding. She then quickly moves on to the next lesson, which begins with a review of skills that were previously covered.

22. The community and the people in the community provide children with the opportunity to observe their world. For example a trip to the police station helps children become more aware of their community and those in it.

23. When possible the children and their teacher venture into the school or community to see how the world is organized and how it “works”.

24. Key experiences guide adults as they observe, support, and plan activities for children and as they evaluate the growth of children.

**SCORING**

Referring back at the instrument, write the rating for each statement in the space provided.

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Total each Column:

A =     B =     C =     D =

Which column has the lowest score?     This low score identifies the curricular approach that reflects your beliefs. See the next page for descriptions of these approaches and curricular models.
Curricular Approaches and Models

A = Behaviorism (Direct Instruction)
Based on the work of Pavlov, Thorndike, Skinner, etc.

- Academic achievement is the focus of schooling.
- The role of the teacher is authoritative—the teacher plans and carries out all activities.
- Children receive knowledge from the teacher.
- Grouping children according to ability helps to maintain the fast-paced learning.
- Rewards and praise keep children motivated.
- Resources, such as workbooks and worksheets, are mainstays of the classroom.
- Teacher guides provide exact wording of explanations and questions that work with a wide range of students.
- Criterion-referenced tests, worksheets, and verbal responses provide checks of children’s progress and identify areas that need remediation.
- The classroom is highly structured, work oriented and fully focused on academics. It should be free of clutter and plain. This prevents the over stimulation of children and discourages roaming and exploration.

B = Developmental Interaction (Bank Street)
Based on the work of Dewey, Erikson, A. Freud, and S. Freud.

- The goal of education should not be only intellectual but takes into account the child’s social, emotional, and physical growth – development as a social being is most important.
- Children are seen as curious beings that should be allowed to explore and experiment in the classroom.
- The primary role of the teacher is to observe children, ask them questions to help guide learning, and plan experiences, especially through play.
- The community plays an important role in the education of the child—field trips are important parts of the curriculum—social studies concepts act as a guide for the curriculum.
- Assessment is not based on standardized tools, but instead is based on teacher observations and portfolios of children’s work.
- Rooms are arranged into learning centers that allow children to pursue special projects such as blocks, dramatic play, construction, art, math, and reading. Flexible schedules allow children time for exploration and play.
C = Sensory Cognitive (Montessori)  
Based on the work of Montessori  
- The classroom is self-regulated by the children. Children have the chance to guide their own learning through auto-education and at their own pace.  
- Specially designed equipment (didactic material) provides the core of the curriculum.  
- The teacher is an observer of children’s development. S/he serves as a resource, providing guidance in the use of the materials.  
- The materials and curriculum are based on practical life activities, development of the senses, conceptual development, and character development.

D = Cognitive Developmentalists (HighScope)  
Based on the work of Piaget  
- Intellectual growth is the most important component in children’s development.  
- Almost all aspects of one’s life are influenced by thought and language.  
- Children construct knowledge through active involvement with people, things, and ideas.  
- The teacher’s role is to follow the child’s interests -- this is the basis for the curriculum. Teachers join into the children’s activities as appropriate.  
- Planning is done daily as the teacher sees what the child is most interested in.  
- The child’s growth is based on developmental milestones that have been identified as areas of intellectual growth (logic, spatial awareness, language, problem-solving, etc.).  
- A consistent routine, the same activities, at the same time of day is necessary for children.  
- Materials are very open-ended and can be used as the children want.
REFERENCES


Melanie Kannwischer Jensen was born in Jacksonville, Florida on March 2, 1959. She graduated from Florida High School, Tallahassee, Florida, in 1976. Her Bachelor of Science degree in Agriculture was earned at The University of Florida, Gainesville, Florida, 1979. She earned a Master of Science in Early Childhood Education from The Florida State University in August 1992.

As a classroom teacher, she taught prekindergarten and kindergarten. In addition, she has post secondary experience teaching methods courses and field supervision coordination at The Florida State University. She currently serves on the faculty of Flagler College in Tallahassee where she is Coordinator of Clinical Education.

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