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The Relationship between Teacher Certification and the Use of Developmentally-  
Appropriate Practices in Kindergarten Classrooms in Northeast Tennessee

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A dissertation

presented to

the faculty of the Department of Educational Leadership and Policy Analysis

East Tennessee State University

In partial fulfillment

of the requirements for the degree

Doctor of Education

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by

Tracey M. Cook

May 2002

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Keywords: Kindergarten, Teacher Certification, Early Childhood, Elementary Education,  
Developmentally-Appropriate Practices

## ABSTRACT

### The Relationship between Teacher Certification and the Use of Developmentally-Appropriate Practices in Kindergarten Classrooms In Northeast Tennessee

by

Tracey M. Cook

This study examined two types of teacher certification. The certifications of elementary teachers and early childhood teachers were the focus of the study. The purpose of the study was to determine if a relationship existed between teacher certification (early childhood grades pre-kindergarten through fourth and elementary education grades one through eight) and the use of developmentally-appropriate practices in kindergarten classrooms in northeast Tennessee.

The approach to the study was quantitative. Data were collected from teacher and classroom observations using the Early Childhood Rating Scale-Revised. Participants included kindergarten teachers in northeast Tennessee.

The researcher investigated the extent to which kindergarten teachers were implementing developmentally-appropriate practices in kindergarten classrooms in northeast Tennessee. There were no statistically significant differences between the extent to which kindergarten teachers with early childhood certification and kindergarten teachers with elementary education certification were implementing developmentally-appropriate practices as determined by the Early Childhood Rating Scale-Revised. There were statistically significant differences in the extent to which kindergarten teachers with early childhood certification and kindergarten teachers with elementary education certification working in the city and county were implementing personal care routines. Differences were also noted between groups in parent and staff variables.

## DEDICATION

I dedicated this work to my parents, who believed in me when I did not believe in myself. Without their support, encouragement, love, patience, and understanding, this would have only been a dream. I would like to give all thanks to God for providing me this opportunity to learn more about who I am during this process.

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The completion of my dissertation would not have been possible without the continued support from Dr. Rebecca Walters, Randall Jones, Dr. Rick McInturf, Rebecca Craddock, and Dr. Steve Dixon. They empowered me to be successful and provided numerous opportunities for growth and feedback while writing my dissertation.

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## CHAPTER 1

### INTRODUCTION

The field of early childhood education has experienced a resurgence of the child-centered progressive education movement over the last decade. Since the mid-1980s there has been yet another plea among early childhood scholars to move toward a child-centered, developmentally-appropriate curriculum and away from the “back to basics,” academically-oriented curriculum. The rationale behind this movement has evolved from belief that school systems are putting too much stress on children by overemphasizing academics. Froebel, considered the father of kindergarten, had a profound impact on early childhood education. Materials used for early childhood classrooms were indigenously prepared and reflected the cultural values of the populations served (Insenberg & Jalongo 1997). More recently, an academically-oriented trend has made its way down to kindergarten where teachers are introducing skills to five-year-olds that are more suitable for first or even second grade children’s learning abilities. The academic emphasis has resulted in an increased number of children retained in kindergarten due to inappropriate academic expectations and their inability to pass first grade entrance tests (Shepard & Smith, 1988).

The National Association for the Education of Young Children (NAEYC) is the nation’s largest professional association of early childhood educators (Shepard, 1994). In 1997, the NAEYC published a document authored by Bredekamp (1997) in which guidelines for developmentally-appropriate practice (DAP) were outlined. Nationally, early childhood education has undergone many changes in recent years as a result of these guidelines (Christian & Bell, 1992). Developmental appropriateness is a philosophy. It incorporates the thinking of theorists like Dewey, Erikson, Piaget, and Vygotsky as to how children learn, and how success is determined in learning situations (Galen, 1994). A developmentally-appropriate curriculum can be described as “a curriculum that is appropriate for the child’s age and all areas of the individual child’s development, including educational, social, cognitive, and communication” (Federal Register, 1991, p. 318-319).

The earliest studies on DAP focused on stress and emotional development. Two research teams documented that children exhibited more stress in didactic environments than in child-initiated environments (Dunn & Kontos, 1997). Contained in these guidelines were the educational goals and objectives appropriate for children from birth through age eight. Current developmentally-appropriate practices are based on Piagetian theory, in which the education of the child depends on a match between the curriculum and the child's emerging mental abilities (Sameroff & McDonough, 1994).

Piaget (1952) documented children's cognitive development progresses through a series of four stages, each qualitatively different from the other and each building upon previously acquired skills. The first two stages of cognitive development, sensorimotor and preoperational, encompass the first six to seven years of the child's life. At around age eight, the child's cognitive developmental abilities make a major transformation into concrete operations, the third stage of cognitive development. Piaget further emphasized the need for children to be actively involved in the learning process through hands-on, manipulative, learning. He identified play as the vehicle for children's learning. Piaget's theory has been around for nearly four decades, yet many early childhood educators continue to dismiss his writings and to insist on curriculum content and materials that are developmentally inappropriate for most kindergarten children. If ample documentation from the literature clearly points out the damaging effects of the academically oriented curriculum, why, then, does current practice continue to override current theory?

The NAEYC position statement on DAP states that too many schools narrow the curriculum to adopt instructional approaches that are incompatible with current knowledge about how young children learn and develop (NAEYC, 1997).

Day (1988) stated that the academic focus has become common practice in most kindergarten programs because of the absorption of the kindergarten by the public school system. Granucci (1990) referred to kindergarten as the public school "stepchild," a misfit in the public school system. She further elaborated that because an increased number of states have mandated public kindergarten attendance, teachers who are moved out of upper grades to teach kindergarten may not have been trained as early childhood educators. In fact, only 11 states require that kindergarten teachers be certified in early childhood education. Teachers not trained in early childhood education continue to align

themselves with the elementary school philosophy: worksheets, testing, individual seatwork, and academics. Even many teachers trained in early childhood education programs often default to implementing developmentally inappropriate practice once they are hired as kindergarten teachers.

Low levels of administrative support and understanding have been cited in the literature as reasons for the escalating academic demands on kindergarten children. A number of elementary public school administrators are also unaware of the developmental needs of kindergarten children and place the same demands for school performance on these children that they place upon upper-grade-level children. Such training is seldom offered in administrator training programs. Moyer, Egertson, and Isenberg (1987) cited the aggressive marketing of commercial materials, many of which are inappropriate for kindergarten children, as a possible reason for the developmentally inappropriate curriculum content. It appears that many educators have lost sight of the traditional Froebelian kindergarten philosophy. Instead of preparing a curriculum to meet the “unfolding” needs of the child, we expect the child to meet the prepackaged, developmentally inappropriate curriculum objectives of the publishing company. The purpose of this study was to determine if a relationship exists between teacher certification--early childhood (pre-kindergarten through fourth grade) and elementary education (grades one through eight)--and developmentally-appropriate kindergarten programs in school districts in northeast Tennessee and to determine the extent to which kindergarten teachers are actually implementing developmentally-appropriate curricula.

### Statement of the Problem

How well teachers incorporate DAP may be a function of the type of training/education they bring to their classrooms. This study explored a possible connection by asking the question: Does a relationship exist between teacher certification and the use of developmentally-appropriate practices kindergarten classrooms in northeast Tennessee schools?

Research on early childhood programs that reflect DAP continues to demonstrate positive effects when measured by quality indicators for young children (Blau, 1997; Begley, 1997; Lewis, 1993; Sherman & Mueller, 1996). Although questions continue to

exist as to whether DAP is for everyone (Charlesworth, 1998a; Lubeck, 1998), review of the literature indicates that program quality is positively correlated to the knowledge and use of developmentally-appropriate practice (Arthur, 1993; Barclay & Benelli, 1995; Bredekamp & Copple, 1997; Elkind, 1989; NAEYC, 1997). Some early childhood educators have recognized that developmentally-appropriate teaching practices enhance student learning. Therefore, knowing teacher certification patterns and the extent to which teachers implement DAP may lead to an answer to the question, “ Does a relationship exist between teacher certification and the use of developmentally-appropriate practices kindergarten classrooms?”

### Research Questions

To ascertain the classroom practices and teacher certification information the following research questions were posed:

1. What is the demographic profile of the kindergarten teachers?
2. What developmentally-appropriate characteristics are most and least exhibited in kindergarten classrooms in northeast Tennessee?
3. Are there differences in the extent to which developmentally-appropriate space and furnishings are being used in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight)?
4. Are there differences in the extent to which developmentally-appropriate personal care routines are being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) or elementary education certification (grades one through eight)?
5. Are there differences in the extent to which developmentally-appropriate language reasoning skills are being implemented in kindergarten classrooms of teachers with early childhood certification (pre-kindergarten through fourth) and elementary education certification (grades one through eight)?
6. Are there differences in the extent to which developmentally-appropriate activities are being implemented in kindergarten classrooms of teachers with

- early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight)?
7. Are there differences in the extent to which developmentally-appropriate interaction skills are being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) or elementary education certification (grades one through eight)?
  8. Are there differences in the extent to which developmentally-appropriate program structures are being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight)?
  9. Are there differences in the extent to which developmentally-appropriate parent and staff communication is being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight)?
  10. Are there differences in the extent to which developmentally-appropriate practices are being implemented in kindergarten classrooms and locations (city or county)?

#### Hypotheses

- Ho1. There are no differences in the extent to which developmentally-appropriate space and furnishings are being implemented in kindergarten classrooms of teachers with early childhood and elementary certification.
- Ho2. There are no differences in the extent to which developmentally-appropriate personal care routines are being implemented in kindergarten classrooms of teachers with early childhood and elementary certification.
- Ho3. There are no differences in the extent to which developmentally-appropriate language reasoning skills are being implemented in kindergarten classrooms of teachers with early childhood and elementary education certification.

- Ho4. There are no differences in the extent to which developmentally-appropriate activities are being implemented in kindergarten classrooms of teachers with early childhood and elementary certification.
- Ho5. There are no differences in the extent to which developmentally-appropriate kindergarten interaction skills are being implemented in kindergarten classrooms of teachers with early childhood and elementary certification.
- Ho6. There are no differences in the extent to which developmentally-appropriate kindergarten program structures are being implemented in kindergarten classrooms of teachers with early childhood and elementary certification.
- Ho7. There are no differences in the extent to which developmentally-appropriate parents and staff communication is being implemented in kindergarten classrooms of teachers with early childhood and elementary certification.
- Ho8. There are no differences between kindergarten teachers in the city and county school systems on the space and furnishings variable.
- Ho9. There are no differences between kindergarten teachers in city and county school systems on personal care routines variable.
- Ho10. There are no differences between kindergarten teachers in city and county school systems on the language-reasoning skills variable.
- Ho11. There are no differences between kindergarten teachers in city and county school systems on the activities variable.
- Ho12. There are no differences between kindergarten teachers in city and county school systems on the interactions variable.
- Ho13. There are no differences between kindergarten teachers in city and county school systems on the program structure variable.
- Ho14. There are no differences between kindergarten teachers in city and county school systems on the parent and staff variable.

#### Significance of the Study

This study was significant in providing useful information to school leaders concerning teachers' certification and the use of developmentally-appropriate practices in kindergarten classrooms. Administrators often must choose between teachers with an

elementary endorsement (grades one through eight) and teachers with early childhood endorsement when hiring teachers for lower grades. This study provides information for administrators to assist them when hiring early childhood teachers.

#### Limitations of the Study

1. This study was limited to kindergarten teachers who worked in participating school systems in northeast Tennessee during the 2000-2001 school year.
2. The researcher was not involved in the selection process for teachers participating in the study.

#### Assumptions

It was assumed that the Early Childhood Environment Rating Scale, Revised Edition (Harms, Clifford, & Cryer, 1998) supplied appropriate and accurate information regarding space and furnishings, personal care routines, language-reasoning, activities, interaction, program structure, and parents and staff. The 43 items were selected to provide a comprehensive assessment of the preschool and kindergarten environments for children two-and-a-half through five years of age. The six subscales dealing with the children's program cover basic dimensions that are equally important in full-day and part-day programs of various types. The seventh subscale covers the needs of the key teaching staff, support staff, and parents.

#### Definitions of Terms

The definitions of key terms used in this study are as follows:

1. Early Childhood - period of life: birth to age eight (Bredekamp, 1997).
2. Early Childhood Settings – a part- or full-day program in a center, school, or home that serves children from birth to age eight and their families, including children with special developmental needs.
3. Developmentally-appropriate Practice (DAP) - practices that are known to contribute to a child's unique development. Programs that are comprehensive in nature, developmentally-appropriate for children so that both age-specific and individual characteristics are addressed and designed

to meet the needs of children and families served. Program planning and implementation that recognizes the integrated nature of care and education for young children and does not treat child care and early education as separate or program functions.

4. Kindergartners - children who are attending public or private kindergarten.
5. National Association for the Education of Young Children (NAEYC) - the nation's largest early childhood professional membership association for early childhood.
6. Teachers/teaching staff - paid adults who have direct responsibilities for the care and education of the children.
7. Teacher Certification - early childhood education (pre-k through fourth grade). Elementary education (first through eighth grade). The qualified educator demonstrates professional knowledge, abilities, dispositions, values, and attitudes regarding child development and learning, curriculum development and implementation, family and community relationships, assessment and evaluation, professionalism, and practice during field experiences.
8. Early Childhood Environment Rating Scale- Revised (ECERS-R) - based on a broad definition of environment including organization of space, interaction, activities, schedule, and provisions for staff and parents and through revision of the widely used program quality assessment instrument. Designed for use in preschool, kindergarten, and child care classrooms serving children two-and-a-half through five years of age; the ECERS-R can be used for program improvement, by teaching staff for self-assessment, by agency staff for monitoring, and in teacher training programs. The established reliability and validity of the scale make it particularly useful for research and program evaluation (Harms, Clifford, & Cryer, 1998).
9. NAECS/SDE- National Association of Early Childhood Specialists in State Departments of Education

## Research Procedures

A list of school districts in northeast Tennessee was obtained and each school district was contacted to determine the number of kindergarten classrooms in each district. The ECERS-R was selected as an appropriate instrument for the study. A determination of the number of teachers in each school system to participate in the study was approved by each director of schools. A letter explaining the nature of the study, and a postage-paid, self-addressed, return envelope was given to the director of schools for approval to proceed with the study. After obtaining approval from the directors of schools, the elementary supervisor and the building-level principals were sent letters explaining the study and the requirements for completion. The principals were allowed to choose whether or not their school's kindergarten teachers would participate in the study. Some teachers were selected by the elementary supervisor, or by the school principals, and some teachers simply volunteered to participate in the study. I was not involved in the selection process of the teachers. Upon approval from principals, the kindergarten teachers were contacted. A time to administer the ECERS-R was arranged. Two follow-up letters were sent to non-respondents. Two observations took place in each kindergarten classroom to establish interrater reliability. The data were gathered and analyzed. Conclusions were drawn and recommendations were developed based on the results.

## Overview of the Study

Chapter 1 consists of an introduction, background information, and a discussion of developmentally-appropriate practices. Chapter 2 contains a review of literature related to teacher certification and developmentally-appropriate practices for young children. Chapter 3 describes the methodology used to administer the instruments for the study, collect the data, and analyze the data. The findings from the data are presented in Chapter 4. Chapter 5 presents the summary, conclusions, and recommendations based on the data collected.

## CHAPTER 2

### REVIEW OF LITERATURE

A major premise of developmentally-appropriate practices (DAP) is that each child is unique and has individual personality characteristics, learning styles, group and individual experiences, group and individual characteristics, and a particular family background. Developmentally-appropriate classes set high standards for children's learning but are flexible in their expectations about when and how children gain certain competencies (NAEYC, 1997). Indicators of quality in an early childhood program have consistently included the use of DAP (Blau, 1997; Begley, 1997; Lewis, 1993; NAEYC, 1991, 1997; Sherman & Mueller, 1996). Although quality indicators are not always labeled as DAP by some authors, the underlying premise remains consistent with the philosophy of DAP.

Thus is the case with Rasmussen (1998). She did not specifically use the term "developmentally-appropriate practice" to describe the tenets of a high quality program. Yet the characteristics she listed were consistent with DAP--use of experience and touching, child play leading to child learning, children choosing centers, and planning based on observation of the children. The kindergarten year of schooling marks an important life transition in many ways. Historically, kindergarten was a preparatory year of formal education, designed primarily to support children's social and emotional adjustment to group learning. The increased number of children attending preschool and child care centers at younger ages combined with the increased academic demands of the early years of school has greatly transformed the role of kindergarten. In most places in America today, kindergarten is considered the beginning of formal schooling. However, the age at which children begin kindergarten varies from state to state (NAEYC, 1997). DAP is universal, and accommodates the needs of children who come from varied cultural and economic backgrounds, live in diverse family settings, are bilingual or multilingual, and have physical and/or mental disabilities (Galen, 1994).

The main problem among early childhood educators is simply the different conceptions of the ultimate goals of development. The links between child development knowledge and teacher preparation could simply be argued on the basis of diverse

cultural expectations and preferences, rather than on whether this particular field of knowledge is an appropriate basis for making decisions about curriculum and teaching methods (Katz, 1996). Culturally appropriate practice and community appropriate practice should be central tenets of early childhood education training programs and services specifically, and developmental policies generally (Ball & Pence, 1999).

NAEYC (1997) also encourages teachers of kindergarten and primary groups to foster children's intrinsic motivation. As children make meaningful and appropriate choices and realize the consequences of their actions, they become increasingly responsible and self-motivated (Wilt, 1997). Stipek, Feiler, Daniels, and Milburn (1995) reported that "Teacher-controlled instruction that emphasizes performance undermines young children's intrinsic interest in learning (Katz, 1988), their perceptions of competence (Kamii, 1985; Katz, 1988), and their willingness to take academic risks (Elkind, 1987)." (p. 210) According to Stipek et al.,

Children in child-centered programs were favored on most of the motivational-related measures. Children in child-centered programs rated their abilities higher, had higher expectations for success on school-like tasks, selected more challenging math problems to complete, showed less dependency on adults for permission and approval, evidenced more pride in their accomplishments, and claimed to worry less about school. (p. 220)

Adults often either empower or impair children as they are allowed to make independent choices and take greater responsibility for their actions (Wilt, 1997). As Elkind, as cited in Rowley (1991), pointed out great damage can be done to a child through unnecessary pressure to learn and perform. According to Stipek et al. (1995), studies conducted by a team of researchers at Louisiana State University suggest other negative consequences to developmentally inappropriate early childhood education programs. Burts, Hart, Charlesworth, and Kirk (1990) found that children in developmentally inappropriate kindergartens evidenced more stress behaviors than children in developmentally-appropriate (child-centered) programs. Stipek et al., reported higher stress levels in developmentally inappropriate kindergartens for boys, but not for girls. Low-socioeconomic African American children manifested more stress behavior than white children in developmentally inappropriate classrooms during whole group, waiting, and group transitions (Stipek et al.).

Many school districts throughout the nation have already organized schools in kindergarten through first, kindergarten through second, and kindergarten through third grade configurations. To provide the most developmentally-appropriate and successful learning environment, we may need to restructure schools to serve young children between the ages of three to seven (Rowley, 1991). Understanding child development provides practitioners with insight into children's behavior and helps adults better grasp the context within which those actions occur. Familiarity with child development also offers clues to child care workers about the sequence in which activities might be presented to children and the degree of developmental readiness necessary for children to achieve particular goals (Kostelnik, 1993).

Understanding how young children think and expand their concepts and skills is the key to creating appropriate physical environments for children, to determining appropriate adult/child interactions, and to developing activities and routines that support rather than undermine children's natural ways of learning. The adult must weigh such variables as the child's current level of comprehension and what experiences the child has had. Although age is not an absolute measure of a youngster's capabilities and understanding, it does serve as a guide for establishing appropriate expectations (Kostelnik, 1993). Useful questions to ask include:

1. Is this practice in keeping with what I know about child development and learning?
2. Does this practice take into account the children's individual needs?
3. Does this practice demonstrate respect for children?

Successful learning requires a match between the curricular materials and the level of the child's understanding (Sameroff & McDonough, 1994). Developmental advances in the understanding of the physical world were matched by advances in the logic children applied to social situations, especially in the area of rules and moral judgment (Sameroff & McDonough).

When first grade expectations were pushed down to kindergarten, shifts in practice were referred to as the "scalation of curriculum" or "academic trickle-down." The result of these changes was an aversive learning environment inconsistent with the learning needs of young children. Developmentally inappropriate instructional practices, characterized by long periods of seatwork, high levels of stress, and a plethora of fill-in-

the-blank worksheets, placed many children at risk by setting standards for attention span, social maturity, and academic productivity that could not be met by many normal five-year-olds (Shepard, 1994). Stipek et al.(1995) reported that “Practices that were previously not usually encountered until first grade or later--such as whole-class, teacher-directed instruction, formal reading instruction, written assignments out of workbooks, and frequent grading--are now common in kindergarten” (p. 209). Stipek et al. stated that “many child development experts fear that a proliferation of early childhood programs that focus on basic skills may have more negative than positive effects on children” (p. 209). Children of low socioeconomic status attending developmentally-appropriate kindergarten classrooms tend to have better reading achievement scores in first grade than children attending inappropriate classrooms. The fact that differences between children in more or less appropriate classrooms are evident a year or more later suggests that children’s learning environments during these early years are important (Dunn & Kontos, 1997). DAP involves looking at every practice in context and making judgments about each child and the environment in which he or she is functioning.

Developmentally-appropriate programs are ones in which children of all abilities, ages, races, cultures, religious beliefs, socioeconomic status, and family and lifestyle backgrounds feel lovable, valuable, and competent (Kostelnik, 1993).

Earliest studies on DAP focused on stress and emotional development. Two research teams documented that children exhibit more stress in didactic environments than in child-initiated environments (Dunn & Kontos, 1997). Children’s receptive language was better in programs with higher quality literacy environments and when developmentally-appropriate activities were more prevalent (Dunn, Beach, & Kontos, 1994).

Young children in developmentally-appropriate programs also seemed more confident in their own cognitive skills. Studies following children over time suggest there may be academic benefits to DAP in the long run (Dunn & Kontos, 1997). DAP is not the norm in early childhood programs. Although many teachers endorse this pedagogical method, they often struggle with implementation. Professional preparation designed to help teachers implement DAP can be quite effective. We need to learn more

about how to most effectively support teachers' implementation of DAP (Dunn & Kontos).

DAP creates a positive classroom climate conducive to children's healthy emotional development. The research favors DAP in general; child-initiated environments were associated with higher levels of cognitive functioning (Dunn & Kontos, 1997). While the incorporation of such DAP in early elementary classrooms is increasing nationally, there has been relatively little research to date documenting the effects of DAP implementation on student performance in the primary grades (Gutirrex & Slvain, 1992).

Leibowitz and Chates (1998) concluded that school classrooms that received considerable resources to create developmentally-appropriate classrooms and had a principal committed to the philosophy of DAP were further advanced in providing developmentally-appropriate environments for children than schools that did not receive or fully implement these resources. The authors concluded that there was some evidence that the focused investment of resources in school classrooms was reflected in the individual classroom curriculum approach and encouraged a more developmentally-appropriate classroom environment (Leibowitz & Chates).

For decisions to be developmentally-appropriate, teachers must have drawn on at least three important sources of knowledge of how young children learn and develop, including knowledge of the sequences and structures of content learning and skills acquisition. Teachers also make decisions in terms of what they know about the individual children and their families. Finally, teachers need to use their knowledge of the social and cultural context within which children and families live (NAEYC, 1997). Many public school districts have made changes to ensure that curricula are responsive to children's developmental needs and programs are responsive to the more comprehensive needs of children and their families (Cummings, 1990). Dunn (1993) found similar results in her study indicating that "caregivers' child-related major was a positive predictor of children's development" (p. 190). The author deduced from her findings that "It may be that regardless of other features of the day care environment (i.e., ratio, group size, etc.), a well-trained caregiver can make an important difference in children's day care experiences" (p. 190).

## The Foundations of Developmentally-Appropriate Practices

Current DAP are based on Piagetian theory, in which the education of the child depends on a match between the curriculum and the child's emerging mental abilities (Sameroff & McDonough, 1994). While many authors hold that DAP defines the ultimate learning environment for young children, others have sought to illuminate the cultural, social, and developmental inadequacies of NAEYC's 1997 statement on DAP. Mallory and New (1994) explained, "The current conceptualization of DAP is overly narrow in its general interpretation of the role of the teacher and specifically with respect to acknowledging variations associated with cultural and developmental diversity" ( p. 2). The authors continued their advocacy by seeking an inclusive framework, which communicates that "all children, including those who may be seen as different, will be included in the articulation and implementation of developmentally-appropriate early childhood practices" (Mallory & New, p. 7). History has demonstrated "children who are 'different' remain socially and psychologically separate from their peers even when placed in common schools or classrooms" (Mallory & New, p. 7).

Barclay and Benelli (1995) stated that program quality must be driven by ongoing program evaluation. Again, the authors did not label the characteristics as DAP, but there is fundamental agreement between the two: (a) the program is based on an understanding of child development; (b) the program is individualized to meet the needs of every child; (c) children may select activities and materials that interest them, and they learn by being actively involved; and (d) adults show respect for children's needs and ideas and talk with them in caring ways.

Christian and Bell (1992) stated,

... when observing programs using developmentally-appropriate practices, one can note basic differences between those types of programs and those of a more traditional nature. In developmentally-appropriate practices, the learner is viewed as having developing abilities while in a traditional program the learner is viewed as having measurable abilities. The teacher in a developmentally-appropriate practices program tries to match the curriculum to the child's developing abilities. (p. 6)

Christian and Bell (1992) reported that the teacher who is traditional gives children information while one using DAP lets children construct their own knowledge.

Katz and Chard (1987) pointed out that teachers using meaningful experiences to teach academic skills are a key part of DAP.

A systems approach was used by Katz (1993) to examine quality in early childhood settings from five perspectives: top-down, bottom-down, inside-outside, outside, and inside. The top-down perspective looked at quality from some measurable standards that included characteristics of adult-children relationships, qualifications of the staff, and the quality and quantity of equipment and materials. A child's view of the setting is incorporated in the bottom-up perspective by asking such questions as "Do I feel welcome rather than captured?" "Do I usually feel accepted, understood, and protected by adults rather than scolded or neglected by them?" The outside-inside perspective is related to the quality and type of relationships that parents perceive themselves to have with staff. The fourth perspective of quality, inside, included perceptions that staff have about each other, parents, and the sponsor. And finally, the community is represented in the outside perspective. Katz alluded to DAP as representative of quality, particularly in the bottom-up view of a child's perspective. The author suggested that children's negative subjective experiences could be avoided in many cases if "staff is accountable for applying all practices acknowledged and accepted by the profession to be relevant and appropriate to the situation at hand" (Katz, p. 5). Her examination of quality ended with an urgent call for "the early childhood profession ... to continue its efforts to develop, adopt, and apply an accepted set of professional standards of practice for which practitioners can fairly be held accountable" (p. 14).

### Indicators of Quality

Research clearly demonstrates the impact of quality on young children in early childhood settings. However, it is the research findings of Chugani, Phelps, and Mazziotta (1987) that suggest brain development in the early years holds the key for defining how the early childhood community can consistently achieve such quality. The critical questions now become: What are the indicators of quality in an early childhood setting? What types of environments promote brain growth and development? Do the tenets of those environments coincide with the accepted indicators of quality in early childhood settings?

Lindsey (1998/99) reported the basics of the connection between the brain research and practices:

Stimulated in part by growing concern about the overall well-being of children in America, the brain research findings affirm what many parents and caregivers have known for years: (a) good prenatal care, (b) warm and loving attachments between young children and adults, and (c) positive, age-appropriate stimulation from the time of birth really do make a difference in children's development for a lifetime. (p. 99)

The Los Angeles Times stated another simple but dramatic impact of quality: "Kids learn in kindergarten (or preschool) whether they like school and whether school likes them" ("Importance of Early Grades," November, 1996, p. 4). Because thousands of children spend a large portion of their days in settings away from home, providing quality early environments becomes a requirement shaping the future of society. Quality educational settings have been associated with positive results not only for the individual child but also for society. Weikart (1988) stated, "part of any solution to the prevention of major social and personal problems in adults is to provide high-quality preschool child development programs to them when they are young" (p. 63). The Perry Preschool Study was designed on such a belief and the findings revealed the positive impact high quality programs for the child can mean for society. The authors of the longitudinal study considered a number of factors including amount of higher education, length of significant relationships, and number of criminal arrests. When compared to a control group, those children who went to a "high-quality, cognitively oriented" preschool program did significantly better in all areas" (Bracey, 1994). Therefore, society profited from the benefits that quality preschool programs offered those individuals.

The impact of high quality in early childhood settings has also been supported as a deterrent to the continuing cycle of poverty, a pressing societal issue. Even before welfare reform, the Association for Supervision and Curriculum Development (ASCD, 1988) recognized that at-risk children needed more than intervention. Indeed, ASCD stressed that at-risk preschool children needed effective programs that not only increased their chances for success throughout life but offered enduring benefits to society as well. Hayes, Palmer, and Zaslow (1990) concurred, "Poor-quality care, more than any single

type of program or arrangement, threatens children's development, especially children from poor and minority families" (p. xii).

### Philosophies that Guide the Developmentally-Appropriate Practices

Two basic tenets of DAP are age appropriateness and individual appropriateness. The first refers to the universal and predictable changes in children's physical, social, emotional, and cognitive domains as they grow through stages. The second takes into consideration each child's unique growth pattern, cultural background, learning style, and personality (Galen, 1994). Developmentally-appropriate programs are ones in which children of all abilities, ages, races, cultures, creeds, socioeconomic, and family lifestyle backgrounds feel lovable, valuable, and competent (Kostelnik, 1993). Figuring out what does or does not constitute DAP requires more than simply memorizing a particular set of "do's and don'ts." It involves looking at every practice in context and making judgements about each child and the environment in which he or she is functioning (Kostelnik). The basic nature of DAP includes the following:

1. Developmentally-appropriate means taking into account everything we know about how children develop and learn and matching that to the content and strategies planned for them by early childhood programs.
2. Developmentally-appropriate means treating children as individuals, not as a group.
3. Developmentally-appropriate means treating children with respect.

### Current Trends and Outcomes in Early Childhood Education

DAP creates a positive classroom climate conducive to children's healthy emotional development (Dunn & Kontos, 1997). Public school districts are examining practices in early childhood education in response to recommendations about school entry, developmentally-appropriate curriculum, testing, and reform in elementary schools. According to Cummings, (1990) current research and positions are critical of the practices of:

1. denying entry to kindergarten,

2. assigning children to differentiated kindergartens and transition first grades based on results of screening instruments (which are often not standardized),
3. using an inflexible, highly structured, teacher-directed curriculum with many paper and pencil tasks,
4. using total-group instruction,
5. placing emphasis on skills taught in isolation, and
6. using widespread retention, referrals, or assignment to remedial classes if expectations are not met.

Jensen (1998), writing about brain-compatible learning, stated, “Good quality education encourages the exploration of alternative thinking, multiple answers, and creative insights” (p. 16). While the brain is developing at its fastest and easiest during the early years, “Stimulation, repetition, and novelty are essential to laying the foundation for later learning” (Jensen, p. 32). With this in mind, Jensen stated, “The critical ingredients in any purposeful program to enrich the learner’s brain are that first the learning is challenging, with new information or experience. In addition, there must be some way to learn from the experience through interactive feedback” (p. 32). Jensen explained that “Challenges are presented in the form of problem-solving, critical thinking, relevant projects and complex activities while feedback needs to be specific, multi-modal, timely, and learner controlled” (p. 32).

Wolfe and Brandt (1998) stated that no environment including a classroom environment is a neutral place. “We educators are either growing dendrites or letting them wither and die” (p. 11). The authors provided some parameters of an enriched environment: (a) students are given opportunities to engage in meaningful learning; (b) multiple aspects of development are addressed simultaneously; (c) learners are engaged in an active process of learning construction, relating what they are learning to what they already know; and (d) students have opportunities to interact with others about their thinking, as well as to produce collaborative work (Wolfe & Brandt). Many of the same dimensions are included in Diamond and Hopson’s (1998) list of descriptors for an enriched environment: (a) emotional support is positive and consistent; (b) a nutritious diet is available; (c) activities are stimulating to the senses; (d) atmosphere is one of pleasurable intensity without undue pressure; (e) activities are appropriately challenging,

tempting students to reach beyond what they already know; (f) many activities allow social interaction; (g) a broad range of skills and interests are addressed including mental, physical, aesthetic, social, and emotional; (h) learners are given opportunities to choose how they spend their efforts as well as the chance to modify them; (i) the environment promotes exploration and the fun of learning, factors leading to internal motivation; and (j) children can be actively involved in the learning process rather than passive observers. Sherman and Mueller's (1996) study of Head Start students indicated that there are significant positive relationships between DAP in the classroom and early student achievement in mathematics and reading. In addition, Dunn, Beach, and Kontos (1994) found that early language development was also enhanced by the quality of the childcare settings. The expansion of the provision of early childhood programs in the last decade has heightened educators' awareness of the complexity of assessing the quality of those programs (Katz, 1994).

#### Teachers' Knowledge about Developmentally-Appropriate Practices

According to Hawk and Schmidt (1989), "Recent educational reform movements have emphasized that classroom teachers need to have a strong foundation in their teaching content areas" (p. 53). However, theories and methods of early childhood education taught in most universities and colleges, though well grounded in developmental theory and research, are often seen as not being fully transferable to, relevant to, or perhaps even desirable within the cultural enclaves, socioeconomic conditions, and sometimes remote geographic settings of many communities (Ball & Pence, 1999). DAP involves looking at every practice in context and making judgements about each child and the environment in which he or she is functioning (Kostelnik, 1993). For decisions to be developmentally-appropriate, teachers must draw on at least three important sources of knowledge of the sequences and structures of content learning and skills acquisition. Teachers also make decisions in terms of what they know about the individual children and families with whom they work. Finally, teachers need to use their knowledge of the social and cultural context within which children and families live (NAEYC, 1997).

Teachers who have embraced DAP at the kindergarten and primary levels have reported that their adaptation of their own teaching approaches has taken two to three years, and their development of a comfort level with DAP has taken five years (Gronlund, 1995). According to Gronlund, advantages of DAP included children learning to manage themselves, children taking risks, and feeling more competent, children gaining self-confidence, and self-esteem moving up to another grade level, children feeling happier, more valued, and in control, children not failing, and children's needs being individualized. Disadvantages included evaluating, managing behavior, dealing with change, needing extra time for planning and making materials.

DAP is taking into account everything we know about how children develop and learn and matching that to the content and strategies planned for them in early childhood programs. Specialized knowledge about child development and learning is the cornerstone of professionalism in early childhood education. Such knowledge encompasses recognizing common developmental threads among all children and understanding significant variations across cultures. Teachers and caregivers with knowledge needed to do these things are better equipped and more likely to engage in DAP, more likely to accept typical variations among children and accurately recognize potential problems that may require specialized intervention, and more likely to understand the degree of developmental readiness children need to achieve particular goals (Kostelnik, 1993). Treating children with respect by recognizing their changing capabilities and viewing them in the context of their families, cultures, and communities, as well as their past experiences and current circumstances are all part of DAP (Kostelnik).

Kindergarten and primary teachers have a professional responsibility to look at their particular group of children and determine the range of activities that will best meet their needs. The first key has been the notion that children learn by doing through active engagement (Gronlund, 1995). Gronlund proposed that kindergarten and primary teachers' visions are to help children learn, grow, and develop to their full potential. The second key element that has been found to be successful with kindergarten and primary teachers is introducing the idea of play with intent and purpose. The third key element is

the idea of moving from the simple to the complex in planning for learning in active and engaging ways.

According to the Kentucky State Department of Education (1991),  
... effective early childhood teachers are interested in the world of ideas and love learning. Such teachers understand themselves and their own needs and make sure that these needs do not intrude on their work with children. Good teachers are able to invent curriculum which satisfies children's needs while keeping the aims of the school in mind. (p.3)

The Kentucky State Department (1991) further stated that "teachers' awareness of their own stages of development and training needs can lead to strengthened professional commitment" (p.5).

When people are asked to change themselves, disequilibrium, if not total rejection, occurs. However, identifying the three key elements cited above provides a beginning for teachers to consider for themselves (Gronlund, 1995). Giving teachers opportunities to explore and play with DAP in their own classrooms is essential to building the skills they need to use these approaches successfully (Gronlund). We have to look at children within the context of their families, cultures, communities, past experiences, and current circumstances to create age-appropriate, as well as individually appropriate, living and learning environments (Kostelnik, 1993).

#### Foundations for Defining High Quality Early Childhood Programs

Developmentally-appropriate programs are ones in which children of all abilities, ages, races, cultures, creeds, socioeconomic levels, and family lifestyle backgrounds feel lovable, valuable, and competent (Kostelnik, 1993).

Having specialized knowledge about child development and learning is the cornerstone of professionalism in early childhood education. Such knowledge encompasses recognizing common developmental threads among all children as well as understanding significant variations across cultures. Those who have such knowledge are better equipped and more likely to engage DAP (Kostelnik, 1993).

Dunn (1993) studied several intrinsic (caregiver goals, strategies, guidance, etc.) and structural (group size, ratio, caregiver characteristics, etc.) features of day care quality and their relationship to children's development. She found that "Correlations

between the proximal and distal variables provide tentative support for the validity of using NAEYC's developmentally-appropriate practice guidelines as an assessment of day care quality and as theory of practice" (p. 187).

It is apparent that the teachers of early childhood programs are instrumental in providing developmentally-appropriate programs. Therefore, teacher preparation and compensation are critical. Goffin (1996) summarized, "Developing a more coherent and coordinated system of professional preparation and development and linking it to increased compensation is one of the major challenges confronting the field and its development as a profession" (p. 124).

According to the Association of Colleges for Teacher Education, good teacher preparation programs include opportunities to learn and practice the following skills:

1. knowledge of the subjects they teach,
2. diagnostic and planning skills,
3. organization and management techniques,
4. an understanding of how children develop,
5. a variety of ways to present information and to develop students' thinking,
6. the ability and knowledge to make valid evaluations of student learning,
7. a willingness to participate in lifelong professional growth,
8. the capacity to make judgments about the effects of particular teaching practices on individual students' learning,
9. knowledge of parental involvement strategies, and
10. ways to deal with culturally diverse populations.

Those who advocate for DAP do so based on the conviction that these classroom practices enhance children's development and facilitate learning (Dunn & Kontos, 1997). Young children in DAP seem more confident in their own cognitive skills. Children described their cognitive competence more positively when they attended child-initiated rather than academically oriented programs (Dunn & Kontos).

Many public school teachers have not had preservice training in dealing with young children, and state certification requirements for teaching primary grades differ markedly. Many teachers need information and training about developmental needs of young children and may need to learn about setting up activity areas, managing children

during child-choice time, organizing small group projects, and integrating learning activities. Strategies and techniques used with young children differ from those used in the upper elementary teacher grades. An elementary teacher does not always have the skills and confidence necessary to teach three- to eight-year-old children. Districts cannot assume that all teachers are prepared to make the changes they will need to make in order to improve the quality of programs. Districts must provide not only information and training but also materials and time for planning and group problem solving (Cummings, 1990).

### Teacher Certification Programs

According to the American Association for Employment in Education (2002), a teacher certification is valid only in the state for which it is issued, and certification and testing requirements are never static. To a large extent, existing certification patterns (K-6, K-4; K-8, 7-12) are artifacts of school building organizational structures that are rapidly becoming obsolete (NAEYC, 1991). Each state in the United States sets its own teacher licensure requirements to ensure that every teacher comes to the classroom with a certain level of competence in subject areas, educational methods, teaching skills, and classroom management abilities. Teacher certification is the education system's process for assuring that public school teachers possess minimum qualifications. Each state determines its own certification standards (ERIC Digest 11, 2002). Certification is a process by which the state evaluates the credentials of prospective teachers to ensure that they meet the professional standards set by the state education agency. Closely linked to certification is state program approval or institutional approval, which is the state's process of evaluating schools, colleges, and departments of education. The purpose of such approval is to ensure a common curriculum framework and professional standards so that the state's teacher education programs produce graduates who meet the state's certification requirements. Certification is a legal process. Certification requirements differ nationwide. The National Teacher Recruitment Clearinghouse (2002) reported that licensure requirements vary significantly from state to state and are revised frequently. Despite differences in state licensure requirements, most agree that teacher candidates should: have at least a bachelor's degree, and in some states, a fifth year or master's

degree; complete an approved, accredited education program; have a major or minor in education (for elementary teaching); have a strong liberal arts foundation; and pass either a state test, such as the widely used PRAXIS exam, or another exam.

The Office of Teacher Licensing (2002) reported that a Tennessee teacher license is required for employment as a teacher in Tennessee. To become a licensed elementary teacher, a person must successfully complete a preparation program in the area of interest at an approved teacher education institution. The requirements for the additional endorsement of early childhood education, elementary education or middle grades education may not exceed 30 semester hours with the following exceptions: requirements for adding early childhood education to a license endorsed middle grades education may not exceed 21 semester hours, requirements for adding early childhood education to a license endorsed elementary education may not exceed 21 semester hours, and requirements for adding middle grades education to a license endorsed elementary education or secondary education may not exceed 21 semester hours.

The Office of Teacher Licensing reported (2002) that the teacher preparation program must include all required professional education courses, student teaching and/or internship, and passing all appropriate portions of the Praxis Exam Series. The actual number of courses will vary with each college/university. Those who advocate DAP do so based on the conviction that these classroom practices enhance children's development and facilitate learning (Dunn & Kontos, 1997). Stipek et al., (1995) stated that research is necessary to challenge conventional wisdoms, to sharpen the debate, and to increase our understanding of the effects of different instructional approaches on children's development.

Christian and Bell (1992) suggested, "Teachers in early childhood programs, regardless of credentialed status, should be encouraged and supported to obtain and maintain current knowledge of child development and its application to early childhood educational practices."(p. 10)

## CHAPTER 3

### RESEARCH METHODS

The purpose of this chapter is to describe the target population, the method of selecting kindergarten classrooms and kindergarten teachers, the research design, instrumentation, data collection, and data analysis.

#### Population

The population consisted of kindergarten teachers and their classrooms in school systems in northeast Tennessee. The instrument was designed to assess environments ranging from childcare facilities to public school kindergarten programs. The instrument was based on the 1997 NAEYC guidelines for developmentally-appropriate practice.

One of the revisions of the 1997 NAEYC guidelines emphasized the teacher's role as decision-maker. In this position, the teacher must accumulate and reflect upon a number of areas of information and/or knowledge:

1. What is known about child development and learning...
2. What is known about the strengths, interests, and needs of each individual child in the group...
3. Knowledge of the social and cultural contexts in which children live  
(Bredekamp & Copple, 1997, p. 9).

It is this requisite knowledge and/or information that served as the basis for the NAEYC guidelines for decision-making regarding developmentally-appropriate practices.

The resulting conclusions and/or analysis of the decision-making process should prompt the teachers' actions about nurturing the well being of children. The variables surrounding children are endless, placing the teacher in the position of "active investigator" or "ongoing decision-maker," who respects these variables as well as the integrity and information of teachers. Teachers' abilities to be reflective about their practice do indeed need to be a part of providing quality environments for children and an agreed upon body of knowledge is necessary for reflective practice to take place. The 1997 NAEYC document supported DAP as the agreed upon body of knowledge.

### Sampling Method

A purposeful sampling method was involved in selecting the sample. The purpose was to establish that the sampling procedure was not biased (Gall, Borg, & Gall, 1996). According to Gall et al., “It is clear that purposeful sampling was not designed to achieve population validity. The intent was to achieve an in-depth understanding of selected individuals, not to select a sample that will represent accurately a defined population” (p. 218).

Based on conversations with elementary supervisors or principals, classrooms were initially selected on the basis of previous observations or reputation to ensure a good distribution. The classrooms observed for the current study had reputations of being either child-centered, defined as developmentally-appropriate, or of having a structured program, defined as developmentally inappropriate. The elementary supervisors or principals of the schools identified kindergarten teachers and kindergarten classrooms chosen for the study. In a few schools teachers were allowed to volunteer. The teachers were chosen in public schools in northeast Tennessee to allow me to travel to the schools to administer the ECERS-R. Seven school systems participated in the study. School administrators of the participating schools selected one or more kindergarten teachers to participate in the study.

### Instrumentation

Given the potential impact of DAP on young children and the opportunities that early childhood instructors have to implement these practices, as well as the need for teachers to actively use reflective practices, it was of benefit to use an instrument that (a) assessed developmentally-appropriate practice from the revised edition (1997) of NAEYC’s position statement on the subject, (b) incorporated the use of teacher reflective practice, and (c) was designed to address the entire span of diversely trained and educated personnel who are lead instructors in early childhood classrooms.

To achieve the desired aspects of evoking knowledge, application of DAP, as well as reflection on that knowledge, the ECERS-R, developed by Harms, Clifford, and Cryer (1998) was administered. The instrument was developed at the Frank Porter Graham Child Development Center at the University of North Carolina at Chapel Hill. The

ECERS-R was indeed a revision of the ECERS; it is not a new scale. The same general rationale and underlying constructs are evident in this revision. The ECERS-R retains the original scale's broad definition of environment, including those spatial, programmatic, and interpersonal features that directly affect the children and adults in early childhood settings. The seven subscales of the ECERS-R are space and furnishings, personal care routines, language-reasoning, activities, interaction, program structure, and parents and staff. The ECERS-R is reliable at both the indicator and item levels and at the total score level. For the entire scale, the correlations between the two observers were .921 product moment correlation (Pearson) and .865 rank order (Spearman). The interclass correlation was .915. These figures were within the generally accepted range with the total levels of agreement being quite high. The field tests revealed quite acceptable levels of interrater agreement at the levels of scoring indicators, items, and total score.

### Procedures

Approval to conduct this study was requested and granted from both the Institutional Review Board at East Tennessee State University (Appendix A), and directors of public school systems of northeast Tennessee (Appendix B). A copy of the letter sent to teachers may be found in Appendix C and the demographic survey may be found in Appendix D.

The ECERS-R instrument was administered in kindergarten classrooms in northeast Tennessee city and county public schools. I went to the kindergarten classrooms to administer the ECERS-R rating scale. Teachers who participated in the study completed a survey about their educational experience and training. My telephone number and e-mail address were provided to the participants if they wished clarification concerning any aspect of the study.

The teachers use of DAP was measured by the average score given between observation one and observation two using the ECERS-R.. The percentage of agreement across the full 470 indicators in the scale was 86.1% with no item having an indicator agreement level below 70%. At the item level, the proportion of agreement was 48% for exact agreement and 71% for agreement within one point. The interrater internal consistency on the early childhood rating scale is represented in Table 1. The 1997

NAEYC guidelines for making developmentally-appropriate decisions were used to derive six DAP indicators. The parameters of these six DAP indicators were then delineated as a rubric and used to judge the appropriateness of the responses. Using these parameters for analysis produced a body of information that would allow investigation toward the research question.

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Table 1  
Interrater Internal Consistency on the Early Childhood Rating Scale

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Scale	Interrater Internal Consistency
Space and Furnishings	0.76
Personal Care Routines	0.72
Language-Reasoning	0.83
Activities	0.88
Interaction	0.86
Program Structure	0.77
Parents and Staff	0.71
Total	0.92

---

The participants' responses were evaluated and sorted according to the education group they indicated on the demographic form that accompanied each response. Results of the evaluation of DAP indicators were then compiled into four tables according to the teacher certification and DAP classroom practices.

#### Data Analysis

The ECERS-R data were analyzed to answer the research questions using the Likert scale. Descriptive statistics, frequencies, and independent sample t-tests were used to analyze the data in this study. All returned kindergarten ECERS-R documents were analyzed quantitatively based on two variables: teacher certification (pre-kindergarten through fourth or first through eight) and whether or not the classrooms were developmentally-appropriate programs. Seven systems agreed to participate in the

study, three were city systems and four were county school systems. Table 2 shows the number of classrooms that participated by system.

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Table 2

School Systems and Number of Classroom Participation

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Schools	Number of Participating Kindergarten Classrooms	Total Number of Kindergarten Classrooms
Bristol Tennessee City Schools	11	13
Carter County Schools	7	15
Elizabethton City Schools	4	7
Greeneville City Schools	5	11
Sullivan County Schools	14	51
Washington County Schools	4	24
Greene County Schools	10	25

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Summary

Chapter 3 presented the methodology and procedures used in this study. The population included teachers of kindergarten students in northeast Tennessee city and county public school systems. Results of the research are discussed in Chapter 4.

## CHAPTER 4

### RESEARCH FINDINGS

This chapter includes the findings from the study and addresses the research questions and hypotheses presented in Chapter 1. The results are presented as a series of responses to the guiding research questions and hypotheses.

The purpose of the study was to determine if there was a relationship between the type of certification held by kindergarten teachers and the use of developmentally-appropriate kindergarten practices in their classrooms in the northeast Tennessee region. Classrooms of teachers with early childhood certification (pre-k through fourth) were compared to classrooms of those with certification in elementary education (first through eight).

Eleven research questions guided the study and nine null hypotheses were tested. In the text that follows, each research question is stated and followed by the related analysis.

#### Participating Systems

A list of school districts in northeast Tennessee was obtained and each school district was contacted to determine the number of kindergarten classrooms in each district. After obtaining approval from the directors of schools, the elementary supervisor and the building-level principals were sent letters explaining the study and the requirements for completion. The principals were allowed to choose whether or not their school's kindergarten teachers would participate in the study. The researcher was not involved in the selection process of the teachers. Upon approval from principals, the kindergarten teachers were contacted. A time to administer the ECERS-R was arranged. Two follow-up letters were sent to non-respondents. Two observations took place in each kindergarten classroom. The data were gathered and analyzed. Conclusions were drawn and recommendations were developed based on the results. Seven systems agreed to participate in the study, three were city systems and four were county school systems. Table 1 shows the number of classrooms that participated by system.

### Participating Teachers

Fifty-five teachers participated in the study. The percentage of teachers participating from each school varied, based upon the level of emphasis placed on the observation by the principal or elementary supervisor. Some teachers were selected by the elementary supervisor or by the school principals, and some teachers simply volunteered to participate in the study. The researcher was not involved in the selection process of the teachers

### Research Question #1

What is the demographic profile of the kindergarten teachers in the study? Fifty-five teachers comprised the group in northeast Tennessee. The demographic characteristics of the kindergarten teachers are presented in Table 3.

Table 3  
Demographic Profile of Kindergarten Teachers

Demographic	N	%
Certification Type:		
Early childhood	26	47.3
Elementary Education	<u>29</u>	<u>52.7</u>
Total	55	100.0
Degree Level:		
Bachelor's	42	76.4
Master's	<u>13</u>	<u>23.6</u>
Total	55	100.0
Location:		
City	22	40.0
County	<u>33</u>	<u>60.0</u>
Total	55	100.0
Years of Experience:		
0 – 10	24	43.6
11 – 20	19	34.6
21+	<u>12</u>	<u>21.8</u>
Total	55	100.0

As shown in Table 3, the percentages of teachers with early childhood (47%) and elementary education (53%) certification were nearly equal. The majority (76%) had a bachelor's degree as their highest degree. Most (60%) were employed by county school systems and had less than 11 years of experience (44%). However, nearly 22% reported over 20 years of experience.

### Research Question #2

What developmentally-appropriate characteristics are most and least exhibited in schools from northeast Tennessee? Descriptive statistics (measures of central tendency and dispersion) were used to address question two. Means were calculated for each item and then listed in rank order. The results of the rankings for observation one are shown in Table 4, observation two in Table 5, and the average of both observations in Table 6.

Table 4

#### Rank Order of Developmentally-Appropriate Practices Exhibited During Observation One

During Observation One Characteristic	Category	n	M*	SD	Rank
Encouraging children to communicate	LR	55	6.89	.69	1
Indoor space	SF	55	6.87	.70	2
Staff interaction and cooperation	PS	54	6.85	.79	3
Safety practices	PCR	55	6.82	.94	4
Interactions among children	I	55	6.80	1.04	5
Using language to develop reasoning skills	LR	55	6.78	.79	6
Furniture for routine care, play, and learning	SF	55	6.78	.81	7
Provisions for children with disabilities	PS	35	6.71	1.13	8
Supervision of gross motor activities	I	55	6.71	1.08	9
Interactions among children	I	55	6.65	1.28	10
General supervision of children (other than gross motor)	I	55	6.62	1.30	11
Greetings/departing	PCR	55	6.62	1.31	12
Toileting/diapering	PCR	55	6.58	1.33	13
Staff-child interactions	I	55	6.53	1.44	13
Provisions for professional needs of staff	PARST	55	6.35	1.62	14
Room arrangement for play	SF	55	6.31	1.05	15
Discipline	I	55	6.18	1.78	16
Informal use of language	LR	55	6.15	1.96	17
Opportunities for professional growth	PARST	55	6.15	1.11	18
Nap/rest	PCR	54	6.11	.32	19

Table 4 (continued)

Characteristic	Category	n	M*	SD	Rank
Supervision and evaluation of staff	PARST	55	5.96	1.55	20
Space for gross motor play	SF	55	5.87	.84	21
Provisions for personal needs of staff	PARST	55	5.36	1.01	22
Free play	PS	55	5.24	1.56	23
Fine motor	ACT	55	4.85	1.48	24
Child-related display	SF	54	4.30	1.38	25
Use of TV, video, and/or computers	ACT	55	4.20	1.13	26
Books and pictures	LR	55	4.18	.92	27
Space for privacy	SF	55	4.18	.98	28
Nature/science	ACT	55	4.16	5.55	29
Health practices	PCR	55	4.11	.94	30
Provisions for parents	PARST	55	4.07	1.17	31
Sand/water	ACT	55	4.04	1.61	32
Blocks	ACT	55	3.93	1.40	33
Furnishings for relaxation and comfort	SF	55	3.91	.91	34
Art	ACT	55	3.80	2.14	35
Meals/snacks	PCR	55	3.55	.94	36
Music/movement	ACT	55	3.53	.88	37
Dramatic play	ACT	55	3.25	1.68	38
Group time	PS	55	3.25	2.54	39
Schedule	PS	55	2.98	1.87	40
Promoting acceptance of diversity	ACT	55	2.95	1.52	41
Gross motor equipment	SF	55	2.35	1.34	42
Math/number	ACT	55	1.05	.40	43

\*Highest possible score was 7. The lowest possible score was 1.

Key: Space and Furnishings	SF	Personal Care Routines	PCR
Language-Reasoning	LR	Activities	ACT
Interactions	I	Program Structure	PS
Parents and Staff	PARST		

As shown in Table 4, the developmentally-appropriate practices most exhibited during observation one were: encouraging children to communicate (M=6.89), use of indoor space (M=6.87), staff interaction and cooperation (M=6.85), use of safety practices (M=6.82), and interactions among children (M=6.80).

Those practices least exhibited were: use of math/numbers (M=1.05), use of gross motor equipment (M=2.35), promoting acceptance of diversity (M=2.95), schedule (M=2.98), and group time (M=3.26).

As these results suggest, during observation one, the teachers in this study appeared more likely to exhibit practices that were not resource intensive. Encouraging children to communicate was exhibited by staff, who balanced listening and talking appropriate for the age and abilities of children during communication activities. Ample indoor space was being used, which allowed children and adults to move freely and controls were provided for natural light. A high mean on staff interaction and cooperation indicates that responsibilities of each staff member were clearly defined. The staff working with the same group or in the same room have planning time together at least every other week. Safety practice behaviors displayed included play areas arranged to avoid safety problems. The staff explained reasons for safety rules to children. Interactions among children were usually positive. Staff helped children develop appropriate social behavior with peers.

Those practices exhibited less often included practices that required additional allocation of instructional assistants, volunteers, and supplies. The low ranking of the use of math/numbers indicated that teachers either had no math/number materials accessible or that math/number skills were taught primarily through rote counting or worksheets. The gross motor equipment was not accessible to all children for at least one hour daily. The available equipment was not always appropriate for the age and ability of the children. The materials in the classroom generally did not exhibit racial and cultural diversity. A basic daily schedule existed that was familiar to children. Most teachers did not have posted written schedule in the room. Neither gross motor nor less active play occurred daily. Some play activities were done in small groups or individually. Group time did not allow for some opportunities for children to be a part of self-selected small groups. Whole-group gatherings were not limited to short periods, suited to age and individual needs of children.

As a result of observation one, there are targeted items that each school, and more specifically each teacher, can demonstrate growth in to provide for a more developmentally-appropriate kindergarten classroom. The information was available to individual teachers upon request.

In Table 5 the mean scores were calculated for each item and then listed in rank order for DAP practices during observation two. The results of the rankings for observation time two are in Table 4, and the average in Table 5.

Table 5

Rank Order of Developmentally-Appropriate Practices Exhibited  
During Observation Two

Characteristics	Category	n	M*	SD	Rank
Encouraging children to communicate	LR	55	6.89	.69	1
Indoor space	SF	55	6.87	.70	2
Staff interaction and cooperation	PS	54	6.85	.79	3
Safety practices	PCR	55	6.82	.94	4
Interactions among children	I	55	6.80	1.04	5
Using language to develop reasoning skills	LR	55	6.78	.79	6
Furniture for routine care, play, and learning	SF	55	6.78	.81	7
Toileting/diapering	PCR	55	6.76	1.05	8
Greeting/departing	PCR	55	6.71	1.15	9
Provisions for children with disabilities	PS	34	6.70	1.14	10
Supervision of gross motor activities	I	55	6.65	1.14	11
General Supervision of children (other than gross motor)	I	55	6.62	1.30	12
Staff-child interactions	I	55	6.62	1.30	13
Informal use of language	LR	55	6.38	1.63	14
Provision for professional needs of staff	PS	55	6.36	1.63	15
Opportunities for professional growth	PS	55	6.25	1.09	16
Room arrangement for play	SF	55	6.18	1.12	17
Discipline	I	55	6.18	1.70	18
Nap/rest	PCR	55	6.13	.39	19
Supervision and evaluation of staff	PS	55	6.09	1.50	20
Space for gross motor play	SF	55	5.91	.80	21
Provisions for personal needs of staff	PS	55	5.38	1.01	22
Free play	PS	55	5.02	1.51	23
Fine motor	ACT	55	4.89	1.37	24
Books and pictures	LR	55	4.29	.99	25
Use of TV, video, and/or computers	ACT	55	4.20	1.13	26
Health practices	PCR	55	4.16	1.01	27
Space for privacy	SF	55	4.15	.91	28
Child-related display	SF	55	4.15	1.30	29
Sand/water	ACT	55	4.13	1.61	30
Blocks	ACT	55	4.05	1.15	31
Provisions for parents	PS	55	3.93	1.14	32
Furnishings for relaxation and comfort	SF	55	3.85	.80	33

Table 5 (continued) Characteristics	ACT Category	55 n	3.51 M*	2.08 SD	34 Rank
Music/movement	ACT	55	3.49	.84	36
Nature/Science	ACT	55	3.44	.94	37
Promoting acceptance of diversity	ACT	55	3.25	1.27	38
Dramatic play	ACT	55	3.04	1.47	39
Group time	PS	55	3.09	2.39	40
Schedule	PS	55	2.73	1.60	41
Gross motor equipment	SF	55	2.38	1.35	42
Math/number	ACT	55	1.05	.40	42

\*Highest possible score was 7. The lowest possible score was 1.

Key: Space and Furnishings	SF	Personal Care Routines	PCR
Language-Reasoning	LR	Activities	ACT
Interactions	I	Program Structure	PS
Parents and Staff	PARST		

As shown in Table 5, the developmentally-appropriate practices most exhibited during observation two were: encouraging children to communicate (M=6.89), use of indoor space (M =6.87), staff interaction and cooperation (M=6.85), use of safety practices (M=6.82), and interactions among children (M=6.80).

Those practices least exhibited were: use of math/numbers (M=1.05), use of gross motor equipment (M=2.38), schedule (M=2.73), group time (M=3.01), and dramatic play (M=3.04).

As these results suggest, during observation two, the teachers in this study appeared more likely to exhibit practices that were not resource intensive. They were less likely to exhibit practices that required additional allocation of instructional assistants, volunteers, and supplies. The least exhibited practices were areas of the program that warrant attention by the teachers and administrators.

The first and second observations supported similar findings for items most exhibited. However, there was not consistency between observations one and two on those items rated the lowest. Math/number findings remained the same. Gross motor equipment scores improved from 2.35 to 2.38. At some schools, new equipment had been purchased. The difference in ratings of schedules between observations one and two was .25. A noted change was that at least one indoor and one outdoor play period did not occur daily due to weather conditions as reported by teachers. The difference in group time between observations one and two was .16. Some routines were done in

small groups or individually. However, the students were kept in whole-group gatherings for long periods of time because only one adult was present in the classroom. Dramatic play materials were not accessible for at least one hour daily. Many dramatic play materials were not accessible at all, including dress-up clothes. A number of items have categories of materials within the seven subscales. Questions 15, 19, 21, 22, 25, 26, and 28 relate directly to materials being available for a substantial portion of the day. In most classrooms, materials were not available for a substantial portion of the day.

In kindergarten classrooms, themes and units change often. Therefore, the researcher gave teachers the opportunity to show or tell about other items that are used to enhance the environment that were not displayed in the classroom at the time of the observation. Some teachers had limited supplies and materials that were rotated between the kindergarten classrooms. During the second observation, some teachers contributed the lack of availability of some materials to the changing of themes between observation one and two.

Table 6

Average Rank Order of Developmentally-Appropriate Practices Exhibited During Observations One and Two

Combined Observations					
Characteristic	Category	n	M*	SD	Rank
Encouraging children to communicate	LR	55	6.89	.57	1
Indoor space	SF	55	6.88	.69	2
Staff interaction and cooperation	PS	54	6.85	.79	3
Safety practices	PCR	55	6.82	.94	4
Using language to develop reasoning skills	LR	55	6.77	.75	5
Furniture for routine care, play, and learning	SF	55	6.76	.82	6
Interactions among children	I	55	6.73	1.04	7
Provisions for children with disabilities	PS	33	6.70	1.16	8
Supervision of gross motor activities	I	55	6.68	1.09	9
Toileting/diapering	PCR	55	6.67	1.11	10
Greeting/departing	PCR	55	6.66	1.18	11
General supervision of children (other than gross motor)	I	55	6.62	1.30	12
Staff-child interactions	I	55	6.57	1.33	13
Provisions for professional needs of staff	PS	55	6.35	1.62	14
Informal use of language	LR	55	6.26	1.71	15
Room arrangement for play	SF	55	6.25	1.05	16
Opportunities for professional growth	PS	55	6.20	1.08	17

Table 6 (continued)

Characteristic	Category	n	M*	SD	Rank
Supervision and evaluation of staff	PS	55	5.99	1.48	20
Space for gross motor play	SF	55	5.89	.81	21
Provisions for personal needs of staff	PS	55	5.37	.99	22
Free Play	PS	55	5.12	1.40	23
Fine Motor	ACT	55	4.87	1.26	24
Books and pictures	LR	55	4.23	.90	25
Child-related display	SF	54	4.21	1.25	26
Use of TV, video, and/or computers	ACT	55	4.20	1.13	27
Space for privacy	SF	55	4.16	.92	28
Health Practices	PCR	55	4.14	.95	29
Sand/water	ACT	55	4.08	1.55	30
Provisions for parents	PS	55	4.00	1.07	31
Blocks	ACT	55	3.99	1.16	32
Furnishings for relaxation and comfort	SF	55	3.88	.78	33
Nature/science	ACT	55	3.80	2.91	34
Art	ACT	55	3.65	1.97	35
Meals/snacks	PCR	55	3.53	.95	36
Music/movement	ACT	55	3.51	.80	37
Dramatic play	ACT	55	3.15	1.48	38
Group time	PS	55	3.14	2.35	39
Promoting acceptance of diversity	ACT	55	3.10	1.28	40
Schedule	PS	55	2.85	1.57	41
Math/number	ACT	55	1.05	.40	43

\*Highest possible score was 7. The lowest possible score was 1.

As shown in Table 6, the developmentally-appropriate practices most exhibited during observation two were: encouraging children to communicate (M=6.89), use of indoor space (M =6.88), staff interaction and cooperation (M=6.85), use of safety practices (M=6.82), and using language to develop reasoning skills (M=6.77).

Those practices least exhibited were: use of math/numbers (M=1.05), use of gross motor equipment (M=2.38), schedule (M=2.73), promoting acceptance of diversity (M=3.10), and group time (M=3.14).

As these results suggest, the average of the two observations provides a more stable measure. A score was given to the 43 items. There was not a discrepancy of more than one point between the items most and least exhibited. Encouraging children to communicate was contributed to staff linking children's spoken communication with written language. Staff did balance listening and talking appropriately for age and abilities of children during communication activities. However, teachers did not always

leave time for children to respond to questions. The indoor space was used by teachers. The classrooms contained natural light that could be controlled. Ventilation was sometimes an issue for teachers who could not regulate the temperature. Staff interaction and cooperation was consistent between staff working with the same group or in the same room and sharing planning time at least every other week. Most of the programs promoted positive interaction among staff members. Unfortunately, the responsibilities of each staff member were not always clearly defined. Most staff talked about safety with students and explained reasons for safety rules. The use of safety practices generally meant that children followed safety rules. Examples included no crowding on slides or climbing on bookcases. Most play areas were arranged to avoid safety problems. Safety rules were generally posted in the classroom rather than on the playground. However, some schools did not have outdoor play equipment of proper size and level of challenge for the age group being observed. The use of language to develop reasoning skills was evident as it was noted that most staff encouraged children to reason throughout the day, using actual events and experiences as a basis for concept development. Concepts were not always introduced in response to children's interest or need to solve problems. Such behavior would have enriched the experiences for the children.

The practices with the lowest means were: the use of math/numbers which was reported as the lowest score for both observations. Teachers primarily taught math/numbers through rote counting or worksheets, a developmentally inappropriate practice.

The use of gross motor equipment was not accessible to all children for at least one hour daily. Most of the equipment was not appropriate for the age and ability of the children. The schedule was not written and posted in the classrooms. The lack of promotion of acceptance of diversity was demonstrated in most classrooms with the absence of props representing various cultures included for use in dramatic play. Also, an absence of many accessible books, pictures, and materials accessible showing people of different races, cultures, ages, abilities, and gender in non-stereotyping roles accounted for the low score on this item. Group time primarily existed of whole-group gatherings for extended periods of time. Children had little or no time for activities to be done in

small groups or individually. In answering research question three, the combined scores from observation one and two were used.

### Research Question #3

Are there differences in the extent to which developmentally-appropriate space and furnishings are being used in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth grade) and elementary education certification (grades one through eight)? A t-test for independent samples, was used to address question three and null hypotheses one.

*H01.* There is no statistically significant difference in the extent to which developmentally-appropriate space and furnishings are being used in kindergarten classrooms of teachers with early childhood and elementary certification. The results of this analysis are shown in Table 7.

Table 7

Comparisons of Scores Between Teachers with Early Childhood and Elementary Certification, on Space and Furnishings

Space & Furnishings	n	M	SD	t	p
Early Childhood Certification	26	5.08	.30	.61	.55
Elementary Certification	29	5.01	.57		

As shown in Table 7, the means of the two groups were very close and differences were not statistically significant ( $t=.61$ ,  $p=.55$ ). The null hypothesis was retained. A frequency count of the classroom ratings of space and furnishings is presented in Table 8.

Table 8

Frequency and Percentages of Ratings on Space and Furnishings		
Space & Furnishings	f	%
Inadequate	0	0
Above Inadequate	0	0
Minimal	1	1.8
Above minimal	4	7.3
Good	44	80.0
Better	5	9.1
Excellent	0	0

As shown in Table 8, 44 of the 55 classrooms were making good use of space and furnishings. In only one classroom was this addressed at the minimal level. Teachers are given assigned space and furnishings by the principal. There were items within the assigned space that teachers could use such as furnishings for relaxation, space for privacy, and child-related displays. The majority of classrooms rated “good.” With only a few changes, the classrooms could be improved to provide an environment to better or excellent.

#### Research Question # 4

Are there differences in the extent to which developmentally-appropriate personal care routines are being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight)? A t-test for independent samples was used to address question four and null hypotheses two.

*Ho2.* There is no statistically significant difference in the extent to which developmentally-appropriate personal care routines are being implemented in kindergarten classrooms of teachers with early childhood and elementary certification. The results of this analysis are shown in Table 9.

Table 9

Comparisons of Scores Between Teachers with Early Childhood and Elementary Certification, on Personal Care Routines

Personal Care Routine	n	M	SD	t	p
Early Childhood	27	5.72	.31	1.13	.27
Elementary	28	5.59	.50		

As shown in Table 9, the means of the two groups were very close and differences were not statistically significant ( $t=1.13$ ,  $p=.27$ ). The null hypothesis was retained. A frequency count of the classroom ratings of personal care routines is presented in Table 10.

Table 10

Frequency and Percentages of Ratings on Personal Care Routines

Personal Care Routine	f	%
Inadequate	0	0
Above Inadequate	0	0
Minimal	0	0
Above minimal	1	1.8
Good	10	18.2
Better	42	76.4
Excellent	2	3.6

As shown in Table 10, 42 of the 55 classrooms that were rated as better were making better use of personal care routines. In two classrooms, this variable was rated excellent. Personal care routines is not an area in which teachers would have received specialized training while obtaining their teacher certification. Personal care routines are left up to the individual as to how, when, and what type of routines should be taught to young children. Safety requires both preventive measures and careful supervision. In the classrooms observed, the teachers demonstrated a recognition of the importance of this variable.

### Research Question # 5

Are there differences in the extent to which developmentally-appropriate language-reasoning skills are being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight)? A t-test for independent samples was used to address question five and null hypotheses three.

*H<sub>o3</sub>*. There is no statistically significant difference in the extent to which developmentally-appropriate language-reasoning skills were being implemented in kindergarten classrooms of teachers with early childhood and elementary certification. The results of this analysis are shown in Table 11.

Table 11

Comparisons of Scores Between Teachers with Early Childhood and Elementary Certification, on Language-Reasoning Skills

Language-Reasoning Skills	n	M	SD	t	p
Early Childhood	26	6.16	.55	.81	.42
Elementary	29	6.00	.76		

As shown in Table 11, the means of the two groups were very close and differences were not statistically significant ( $t=.81$ ,  $p=.42$ ). The null hypothesis was retained. A frequency count of the classroom ratings of language-reasoning skills is presented in Table 12.

Table 12

Frequency and Percentages of Ratings on Language-Reasoning Skills

Language-Reasoning Skills	f	%
Inadequate	0	0
Above Inadequate	0	0
Minimal	0	0
Above minimal	3	5.5
Good	2	3.6
Better	44	80.0
Excellent	5	9.1

As shown in Table 12, 44 of the 55 classrooms were making better use of language-reasoning skills. In 5 classrooms this was assessed as excellent. Teachers in general were encouraging children to communicate. Students were using language to develop reasoning skills through the staff talking about logical relationships while the children played with materials that stimulate reasoning. Many staff-child conversations occurred during free play and routines. Teachers received support in Language-Reasoning from speech therapists working in the classroom.

#### Research Question # 6

Are there differences in the extent to which developmentally-appropriate activities are being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight)? A t-test for independent samples was used to address question six and null hypotheses four.

*Ho4.* There is no statistically significant difference in the extent to which developmentally-appropriate activities are being implemented in kindergarten classrooms of teachers with early childhood and elementary certification. The results of this analysis are shown in Tables 13 and 14.

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Table 13

Comparisons of Scores Between Teachers with Early Childhood and Elementary Certifications, on Activities

Activities	n	M	SD	t	p
Early Childhood	26	3.43	.68	.66	.51
Elementary	29	3.57	.72		

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As shown in Table 13, the means of the two groups were very close and differences were not statistically significant ( $t = .66, p = .51$ ). The null hypothesis was retained. A frequency count of the classroom ratings of activities is presented in Table 14.

Table 14

Frequency and Percentages of Ratings on Activities		
Activities	f	%
Inadequate	0	0
Above Inadequate	2	3.6
Minimal	31	56.4
Above minimal	17	30.9
Good	5	9.1
Better	0	0
Excellent	0	0

As shown in Table 14, 31 of the 55 classrooms were making minimal use of activities. In only five classrooms was this assessed as good. Activities with a variety of materials were not varied to maintain interest of the students. Varied activities were not available to children for a substantial portion of the day. Classroom materials did not promote learning on different levels of difficulty. Students were not encouraged to explore or create using the materials that were present.

#### Research Question # 7

Are there differences in the extent to which developmentally-appropriate interactions are being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight)? A t-test for independent samples was used to address question seven and null hypotheses five.

*Ho5.* There is no statistically significant difference in the extent to which developmentally-appropriate interactions are being implemented in kindergarten classrooms of teachers with early childhood and elementary certification. The results of this analysis are shown in Table 15.

Table 15

Comparisons of Scores Between Teachers with Early Childhood and Elementary Certification, on Interactions					
Interactions	n	M	SD	t	p
Early Childhood	26	6.82	.48	1.81	.08
Elementary	29	6.41	1.06		

As shown in Table 15, the means of the two groups were very close and differences were not statistically significant ( $t=1.81$ ,  $p=.08$ ). The null hypothesis was retained. A frequency count of the classroom ratings of interactions is presented in Table 16.

Table 16

Frequency and Percentages of Ratings on Interactions		
Interactions	f	%
Inadequate	0	0
Above Inadequate	0	0
Minimal	1	1.8
Above minimal	3	5.5
Good	3	5.5
Better	3	5.5
Excellent	45	81.8

As shown in Table 16, 45 of the 55 classrooms were rated excellent in their interactions. In only one classroom was this addressed at the minimal level. Teachers encouraged positive peer interaction among students. Teachers assisted children to develop skills needed to use equipment. Supervision was excellent to protect children's health and safety. Teachers showed appreciation of children's efforts and accomplishments. Teachers did not use physical punishment or severe methods of discipline. Teachers sought advice from other professionals concerning behavior problems. Teachers responded sympathetically to help children who were upset, hurt, or angry. Cost was not associated with interaction. Therefore, teachers had flexibility to interact with students in excellent ways.

#### Research Question # 8

Are there differences in the extent to which developmentally-appropriate program structure is being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight)? A t-test for independent samples was used to address question eight and null hypotheses six.

*Ho6.* There is no statistically significant difference in the extent to which developmentally-appropriate program structure is being implemented in kindergarten

classrooms of teachers with early childhood and elementary certification. The results of this analysis are shown in Table 17.

Table 17

Comparisons of Scores Between Teachers with Early Childhood and Elementary Certification, on Program Structure

Program Structure	n	M	SD	t	p
Early Childhood	11	4.68	.98	.86	.52
Elementary	15	4.29	1.34		

As shown in Table 17, the means of the two groups were very close and differences were not statistically significant ( $t=.86, p=.52$ ). The null hypothesis was retained. A frequency count of the classroom ratings of program structure is presented in Table 18.

Table 18

Frequency and Percentages of Ratings on Program Structure

Program Structure	f	%
Inadequate	0	0
Above Inadequate	4	7.3
Minimal	15	27.3
Above minimal	19	34.5
Good	4	7.3
Better	11	20.0
Excellent	2	3.6

As shown in Table 18, 19 of the 55 classrooms were above minimal in program structure. In only two classrooms was this assessed as excellent. In program structure, scheduling seemed to be the biggest problem for teachers. Written schedules were generally not posted in the classrooms. Few variations were made in the schedule to meet individual needs. Transitions between daily activities were not smooth processes. Free play did not occur for a substantial portion of the day both indoors and outdoors. In addition, teachers did not provide a change of pace throughout the day by providing for different groupings of children. In making provisions for children with special needs, the

classrooms ranged from no attempt by staff to assess children’s needs or find out about assessments to some staff contributing to individual assessments and intervention plans.

Research Question # 9

Are there differences in the extent to which developmentally-appropriate parent and staff communications are being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight)? A t-test for independent samples was used to address question nine and null hypotheses seven.

*Ho7.* There is no statistically significant difference in the extent to which developmentally-appropriate parent and staff communication are being implemented in kindergarten classrooms of teachers with early childhood and elementary certification. The results of this analysis are shown in Table 19.

Table 19

Comparison of Scores Between Teachers with Early Childhood and Elementary Certification, on Parents and Staff

Parents & Staff	n	M	SD	t	p
Early Childhood	27	5.89	.52	1.14	.26
Elementary	28	5.65	.87		

As shown in Table 19, the means of the two groups were very close and differences were not statistically significant ( $t=1.14$ ,  $p=.26$ ). The null hypothesis was retained. A frequency count of the classroom ratings of program structure is presented in Table 20.

Table 20

Frequency and Percentages of Ratings on Parent and Staff		
Parents & Staff	f	%
Inadequate	0	0
Above Inadequate	0	0
Minimal	1	1.8
Above minimal	2	3.6
Good	9	16.4
Better	40	72.7
Excellent	3	5.5

As shown in Table 20, 40 of the 55 classrooms were rated better in parent and staff communication. In only one classroom was this rated minimal. Teachers had a commitment to working closely with families and communities as part of children experiencing a caring community inside and outside of school.

#### Research Question #10

Are there differences in the extent to which developmentally-appropriate practices are being implemented in kindergarten classrooms from city and county school systems? *Ho8*. There is no statistically significant difference between kindergarten teachers in the city and county school systems on the space and furnishings variable.

To answer this research question and hypotheses 8-14, a series of t-tests for independent samples were conducted. Each comparison is shown in Table 21.

Table 21

Independent Samples Test		t-test for Equality of Means				
Category	Location	n	M	SD	t	p
SF	City	21	5.09	.33	.63	.43
	County	33	5.02	.52		
PCR	City	21	5.71	.23	4.77	.03*
	County	33	5.62	.49		
LR	City	22	5.92	.77	.92	.34
	County	33	6.12	.69		

Table 21 (continued)						
Category	Location	n	M	SD	t	p
ACT	City	22	3.80	.70	.41	.52
	County	33	3.37	.72		
I	City	22	6.58	.1.0	.00	.98
	County	33	6.54	.95		
PS	City	17	5.10	1.27	2.58	.12
	County	16	3.98	.93		
PARST	City	22	6.15	.35	6.60	.01*
	County	32	5.59	.84		

\*  $p > .05$

Key: Space and Furnishings SF      Personal Care Routines      PCR  
 Language-Reasoning LR      Activities      ACT  
 Interactions I      Program Structure      PS  
 Parents and Staff PARST

As shown in Table 21, the mean of the two groups was close. The difference was not statically significant ( $t=.63, p=.43$ ). The null hypothesis was retained. There were no significant differences.

*Ho9.* There is a statistically significant difference between kindergarten teachers in city and county school systems on personal care routines variable.

As shown in Table 21, the mean of the two groups was close. The difference was statically significant ( $t=4.77, p=.03$ ). The null hypothesis was rejected. There was a significant difference with city school systems having a significantly higher mean score.

*Ho10.* There is no statistically significant difference between kindergarten teachers in city and county school systems on the language-reasoning skills variable.

As shown in Table 21, the mean of the two groups are close. The difference was not statistically significant ( $t=.92, p=.34$ ). The null hypothesis was retained. There was no significant difference.

*Ho11.* There is no statistically significant difference between kindergarten teachers in city and county school systems on the activities variable.

As shown in Table 21, the mean of the two groups is close. The difference was not statistically significant ( $t= .41, p=.52$ ). The null hypothesis was retained. There was no significant difference.

*Ho12.* There is no statistically significant difference between kindergarten teachers in city and county school systems on the interactions variable.

As shown in Table 21, the mean of the two groups is close. The difference was not statistically significant ( $t=.00$ ,  $p=.98$ ). The null hypothesis was retained. There was no significant difference.

*Ho13.* There is no statistically significant difference between kindergarten teachers in city and county school systems on the program structure variable.

As shown in Table 21, the mean of the two groups was close. The difference was not statistically significant ( $t=2.58$ ,  $p=.12$ ). The null hypothesis was retained. There was no significant difference.

*Ho14.* There is no statistically significant difference between kindergarten teachers in city and county school systems on the parent and staff variable.

As shown in Table 21, the means of the two groups were not close. The difference was a statistically significant ( $t=-6.60$ ,  $p=.01$ ). The null hypothesis was rejected. There was a significant difference. Classrooms from city school systems were rated higher.

CHAPTER 5  
SUMMARY, FINDINGS, CONCLUSIONS, IMPLICATIONS, AND  
RECOMMENDATIONS

Summary

The primary goal of this study was to determine if there were differences in the extent to which developmentally-appropriate practices were being implemented in kindergarten classrooms of teachers with early childhood and elementary certification in kindergarten classrooms in northeast Tennessee.

Seven school districts agreed to participate in the study. There were three city school systems and four county systems. Fifty-five teachers participated in the study. Two observations were conducted in each classroom.

This chapter provides conclusions drawn from the findings of the study presented in Chapter 4 and the review of the literature, which was presented in Chapter 2, as well as recommendations for further research. Eleven research questions guided this study.

Findings

*Research Question #1*

What is the demographic profile of the teachers in the study? Fifty-five teachers comprised the sample studied in this study. Of the fifty-five teachers, 26 had early childhood certification and 29 had elementary certification. Forty-two of the teachers had bachelor's degrees and 13 of the teachers possessed a master's degree. Twenty-two of the teachers taught in city school systems and 33 taught in county systems. Twenty-four of the teachers had 0-10 years of experience, 19 had 11-20 years, and 12 had 21 or more years of teaching.

*Research Question # 2*

What developmentally-appropriate characteristics are most and least exhibited in schools in northeast Tennessee? The characteristics most exhibited, determined by using the means of the average of observations one and two, were encouraging children to communicate, indoor space, staff interactions and cooperation, safety practices, and using language to develop reasoning skills. The characteristics least exhibited, determined by

using the means of the average of observation one and two, were math/number, gross motor equipment, schedule, promoting acceptance of diversity, and group time.

### *Research Question # 3*

Are there differences in the extent to which developmentally-appropriate space and furnishings are being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight)? An Independent t-test was used to test the null hypothesis. There were no differences in the space and furnishings. A rating of good on the space and furnishings subscale of the Early Childhood Rating Scale-Revised was recorded for 80% of the kindergarten teachers.

Classrooms should be inviting, aesthetically pleasing, familiar, and friendly. The classroom environment affects children's play and development (Smith, 1992). An "ugly" environment apparently induces feelings of discontent and a desire to escape (Mintz, 1956). Soft and warm environments create security and comfort and reduce stress in young children (Weinstein & David, 1987). Availability of space to be alone is positively related to cognitive development (Wachs, 1979). Size of program appears to have an influence on such features as environmental safety, curriculum, parent involvement, and other indicators of developmentally-appropriate practices (Trawick-Smith, 1992).

Children need space to explore both physically and visually. Teachers need to provide children with areas where there are opportunities to examine and manipulate real things, as well as the space to practice their emerging motor skills. Three factors can provide clear direction for looking at the classroom space: The number and variety of things there are to do, the number and variety of places to do them, and the organization and accessibility of those things within the classroom (Olds, 1984). The size of the classroom affects young children's play and development. The optimal environment is one where small groups of children can interact within a small space (Moore, 1999). The size of the classroom is related to the quality of the play environment and caregiver interactions (Trawick-Smith, 1992). Howes (1983) noted less social stimulation and caregiver responsiveness and more restriction within large facilities. Large space may be

more difficult for teachers to organize and maintain. Responsive, developmentally-appropriate guidance may be harder to achieve when children are spread out.

Most classrooms had ample indoor space that allowed children and adults to move around freely. They also had good ventilation, with some natural lighting through windows or skylight. Doors to the outside counted as ventilation control only if they could be left open without posing a safety threat. Space was accessible to children and adults with disabilities if the individuals were served in the classrooms.

Furnishings for relaxation and comfort meant a softness provided for children during learning and play activities. Most furniture was child-size, sturdy, and in good condition. Generally, cozy areas were not used for active physical play and most soft furnishings were clean and in good repair. Cozy area was clearly defined space with a substantial amount of softness where children may lounge, daydream, read, or play quietly. For example, it may have consisted of a soft rug with several cushions, an upholstered couch, or a covered mattress with cushions.

An interest center is an area where materials, organized by type, were stored so that they were accessible to children, and appropriately furnished play space was provided for children to participate in a particular kind of play. Examples of interest centers are art activities, blocks, dramatic play, reading, nature/science, and manipulatives/fine motor. In most classrooms, quiet and active centers were placed so as not to interfere with one another.

Generally, the space in the kindergarten classrooms was arranged so most activities were not interrupted. Some space was set aside for one or two children to play, protected from intrusion by others. Examples of space for privacy are a small loft area, activity centers where use was limited to one or two children; a large cardboard box with cut-out windows, door, and a cushion inside, or a small outdoor play house. Some children's work was displayed. Much of the displays related closely to current activities and children in the group. Examples of artwork or photos about recent activities were displayed. Many items were displayed on the child's eye level.

Space for gross motor play was adequate space outdoors and some space indoors. Space was easily accessible for children in the groups. Space was organized so that different types of activities did not interfere with one another. Outdoor gross motor space

had a variety of surfaces permitting different types of play. Examples include sand, black top, wood chips or grass. Most gross motor equipment was generally in good repair. Examples of gross motor equipment: stationary equipment such as swings, slides, climbing equipment and overhead ladders; portable equipment such as balls and sports equipment, wheel toys, tumbling mats, jump ropes, bean bags, and ring toss games. Gross motor equipment was not always appropriate for the age and ability of the kindergarten children. Most elementary school principals had on file a monthly inspection of the playground equipment.

#### *Research Question # 4*

Are there differences in the extent to which developmentally-appropriate personal care routines are being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight)? An independent t-test was used to test the null hypotheses. There was no statistically significant difference in personal care routines. A rating of better on the subscale personal care routines on the Early Childhood Rating Scale-Revised was recorded for 76% of the kindergarten teachers.

Personal care routines consists of six items. Most children were greeted individually by a staff member saying hello and using the child's name. Many teachers gave a pleasant departure to children by not rushing them to leave the classroom. Teachers sometimes gave children hugs or goodbyes for everyone. Parents were usually given the opportunity to bring children to the classroom in the morning and staff greeted parents warmly. When children arrived in the classroom, they were helped to become involved in activities in most of the kindergarten classrooms.

Well-balanced meals as recommended by USDA guidelines were provided by the lunchroom staff. A menu was posted in most of the classrooms. The eating schedule was appropriate for children. Sanitary conditions were usually maintained. Children were encouraged to eat independently using child-size eating utensils provided.

Nap and rest was scheduled appropriately for most of the children. Staff helped children to relax by playing soft music, rubbing backs, or allowing children to hold a cuddly toy. Classroom space was conducive to resting by dimmed lights, quiet, and mats

or towels placed for privacy. Mats or towels were at least 3 feet apart or separated by a solid barrier. Provisions were sometimes made for early risers and non-nappers by permitting children to read books or play quietly.

The toileting schedule met the needs of children. Provisions were made convenient and accessible for groups by steps placed near a sink or toilet if needed. Pleasant staff-child interaction occurred. Some classrooms contained child-size toilets and low sinks. Teachers promoted self-help skills with toileting needs. Staff and children washed hands most of the time after toileting.

Health practices included procedures used to minimize the spread of contagious disease by ensuring children had immunizations and exclusion of children with contagious illness, and TB tests for all staff at least every 2 years. TB tests are a requirement for certified teaching staff in the public schools. Adequate hand washing by staff and children generally took place after wiping noses, after handling animals, or when otherwise soiled. Staff usually took action to cut down on the spread of germs. Children were generally dressed properly for both indoor and outdoor conditions. Most staff members were good models of health practices. Some children were taught to independently manage health practices by staff teaching proper hand washing techniques, putting on coat, reminding children to flush toilets, and displaying health-related books, pictures, and games.

Safety practices included staff anticipated and took action to prevent safety problems by removal of toys under climbing equipment, locked dangerous areas to keep children out and wiped up spills to prevent falls. Staff generally explained reasons for safety rules to children. Most play areas were arranged to avoid safety problems. Children generally followed safety rules.

#### *Research Question # 5*

Are there differences in the extent to which developmentally-appropriate language reasoning skills are being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight)? An independent t-test was used to test the null hypothesis. There was no statistically significant difference in

language-reasoning skills. A rating of better on language-reasoning skills on the Early Childhood Rating Scale-Revised was recorded for 80% of the kindergarten teachers.

The language-reasoning section of the test contains four items. Some books and pictures were accessible for children during free play and children generally had enough books to avoid conflict. At least one staff-initiated receptive language activity occurred daily by reading books to children, storytelling, or using flannel board stories. Books were mostly organized in a reading center. Staff sometimes read to children informally during free play, at naptime, or as an extension of an activity. Some books related to current classroom activities or materials were borrowed from the library relating to seasonal themes.

Encouraging children to communicate took place during both free play and group times. Materials that encouraged children to communicate were accessible in a variety of interest centers. Examples included small figures and animals in block areas, puppet and flannel board pieces in book areas, or toys for dramatic play outdoors or indoors. Staff balanced listening and talking appropriately for age and abilities of children during communication activities. Most staff linked children's spoken communication with written language by writing down what children dictated and read it back to them, or helped them write a note to parents.

The use of language to develop reasoning skills occurred by staff talking about logical relationships while children played with materials that stimulated reasoning. Examples included sequence cards, same/different games, size and shape toys, sorting games, numbers and number games. Most children were encouraged to talk through or explain their reasoning when solving problems by explaining why they sorted objects into different groups. Staff usually encouraged children to reason throughout the day, using actual events and experiences as a basis for concept development. Concepts were often introduced in response to children's interests or needs to solve problems.

Informal use of language included many staff-child conversations during free play and routines. Language was primarily used by staff to exchange information with children and for social interaction. Some staff added information to expand on ideas presented by children. Staff often encouraged communication among children reminding children to listen to one another. Staff had individual conversations with most of the

children. Some children were asked questions to encourage them to give longer and more complex answers by using what, when, where, and how questions.

Dickinson (2002) reported that researchers can give favorable, even high, ratings to classrooms that only minimally or sporadically support language and literacy acquisition. With updated changes in IRA and NAEYC's (1998) position statement *Learning to Read and Write: Developmentally-Appropriate Practices for Young Children*, relatively few changes have been made in the research tools.

### *Research Question # 6*

Are there differences in the extent to which developmentally-appropriate activities are being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight)? An independent t-test was used to test the null hypothesis. There was no statistically significant difference in activities. A rating of minimal on the subscale activities on the Early Childhood Rating Scale-Revised was recorded for 56.4% of the kindergarten teachers and 30.9% scored above minimal.

Activities contained eight items that were evaluated. There were several different types of fine motor materials, including small building toys such as interlocking blocks and manipulatives such as beads of different sizes for stringing, pegs and pegboards, and sewing cards. Some developmentally-appropriate fine motor materials of each type were accessible. Most of the materials were in good repair. Fine motor materials were well organized and on different levels of difficulty.

Some individual expression was permitted with art materials. Children were allowed to decorate pre-cut shapes in their own way, and some individualized work was permitted. In a few classrooms, many and varied art materials were accessible for a substantial portion for the day. In most classrooms, three-dimensional art materials were included monthly by the use of clay, play dough, wood gluing, or carpentry.

Some music materials such as simple instruments, music toys, or tape recorders with tapes were accessible for children's use. Most staff initiated at least one music activity daily by singing songs with children, using soft music at naptime, or playing music for dancing. Some movement/dance activity was done at least weekly by

marching or moving to music and acting out movements to songs or rhymes. Children were sometimes given scarves and encouraged to dance to music.

One of the most important learning centers was the block area. Blocks are ideal for learning because they involve the child as a whole-the way they move their muscles, the way the children discover different objects texture in their hands, the way children think about spaces and shapes, and the way children develop thoughts and interests of their own. In some of the classrooms there were enough blocks and accessories accessible for at least two children to build independent structures at the same time. Some clear floor space was used for block play. Sometimes a special block area was set aside out of traffic, with storage and suitable building surfaces such as a flat rug or other steady surface. However, block play was not evident in all kindergarten classrooms.

Some provisions for sand or water play were accessible either outdoors or indoors. A variety of toys were accessible for play such as containers, spoons, funnels, scoops, shovels, pots and pans, molds, toy people, animals, and trucks. Sometimes different activities were done with sand and water. Examples included bubbles added to water, or materials in sand table/container that was sometimes changed to rice or other sensory materials. Some rooms had to share sand and water materials on a rotating basis.

Dramatic playing is pretending or making believe. This type of play occurred when children acted out roles themselves and when they manipulated figures such as small toy people in a doll house. Dramatic play was enhanced by props that encouraged a variety of themes including housekeeping, different kinds of work, fantasy, and leisure. Some dramatic play materials and furniture were accessible, so children could act out family roles themselves. Props for at least two different themes were accessible daily.

Nature and science included categories of materials such as collections of natural objects, living things to care for and observe, nature/science books, games, or toys, and nature/science activities such as cooking and simple experiments. Open-ended nature/science materials that children could explore in their own way were usually developmentally-appropriate for a wide range of ages and abilities. Materials that required skills beyond the ability of individual children or that did not challenge children sufficiently were not developmentally-appropriate. Some developmentally-appropriate games, materials, or activities from two nature/science categories were accessible.

Children were encouraged to bring in natural things to share with others or add to collections. Most of the time science materials were accessible daily. Everyday events were used as a basis for learning about nature/science by teachers and students talking about the weather, observing insects or birds, discussing the change of seasons, blowing bubbles or flying kites on a windy day, or watching snow melt and freeze.

Math and number materials help children to experience counting, measuring, comparing quantities, and recognizing shapes, and to become familiar with written numbers. Examples of math/number materials were small objects to count, balance scales, rulers, number puzzles, magnetic numbers, number games such as dominoes or number lotto, and geometric shapes. In most classrooms there were some developmentally-appropriate math/number materials accessible daily. However, the majority of teachers taught math/number primarily through rote counting or worksheets.

The use of TV, video, and/or computers were limited to those materials considered good for children such as educational videos and computer games, but not most cartoons. Time children were allowed to use TV/video or computer was typically limited. Some teachers provided alternative activities while TV/computer was being used. Some of the materials encouraged active involvement by children dancing, singing, or exercising to video or computer software that encouraged children to think and make decisions.

Promoting acceptance of diversity consisted of assessing diversity in materials, the researcher considered all areas and materials used by children, including pictures and photos displayed, books, puzzles, games, dolls, play people in the block area, puppets, music tapes, videos, and computer software. Some racial and cultural diversity was visible in most classrooms with positive examples of different races, cultures, ages, abilities, or gender. The majority of staff intervened appropriately to counteract prejudice shown by children or other adults by discussing similarities and differences, establishing rules for fair treatment of others, and assuring that no prejudice was shown.

The activities/curriculum must be a mirror for young children, in which they can see images of themselves and of those like them. Yet for too many children, the curriculum is a wall, blocking all likenesses of themselves (Isenberg & Jalongo, 1997).

Schools today continue to remain centered on isolated, technical teaching of the basic three R's. Motives for changing from narrow definition of schooling to the development of critical thinkers, connection makers, and responsible employees have grown more recently out of the business community (Isenberg & Jalongo, 1997).

#### *Research Question # 7*

Are there differences in the extent to which developmentally-appropriate interactions are being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight)? An independent t-test was used to test the null hypothesis. There was no statistically significant difference in interactions. A rating of excellent on the subscale of interaction on the Early Childhood Rating Scale-Revised was recorded for 81.8% of the kindergarten teachers.

Interactions consisted of five items that were assessed. Supervision of gross motor activities was more than adequate to protect children's health and safety. Enough staff was present to watch children in an area, staff were usually positioned to see all areas, staff moved around as needed, and intervened when problems occurred. Most staff-child interactions were pleasant and helpful. Teachers helped children to develop positive social interactions to help children take turns on popular equipment, provided equipment that encouraged cooperation such as two-person rocking boats. Staff most often assisted children to develop skills needed to use equipment by helping them learn to pump on swings. Staff generally acted to prevent dangerous situations before they occurred. Some examples were when teachers removed broken toys or other dangers prior to children's use and stopped rough play before children got hurt.

Careful supervision of all children was almost always adjusted appropriately for different ages and abilities. Staff gave children help and encouragement when needed by helping children who were wandering to get involved in play, and helping children complete and activities. Staff generally showed awareness of the whole group even when working with one child or a small group. Staff frequently scanned the room when working with one child, and made sure the area not visible was supervised by another adult. Staff typically showed appreciation of children's efforts and accomplishments.

Most staff talked to children about ideas related to their play, asked questions, and added information to extend children's thinking.

Staff generally used non-punitive discipline methods effectively by giving attention for positive behaviors or redirecting children from unacceptable to acceptable behaviors. Staff reacted consistently to children's behavior by applying the same rules and used the same methods and basic rules followed with most of the children. Staff sometimes used activities to help children understand social skills by the use of storybooks and group discussions to work through common conflicts. Occasionally staff did seek advice from other professionals concerning behavior problems.

Staff members usually showed warmth through appropriate physical contact by patting a child on the back or returned a child's hug. Staff generally showed respect for children by listening attentively, making eye contact, treating children fairly, and not discriminating. Staff often responded sympathetically to help children who were upset, hurt, or angry. Most staff seemed to enjoy being with the children. Staff encouraged the development of mutual respect between children and adults by waiting until children finished asking questions before answering, encouraging children in a polite way to listen when adults spoke.

Staff modeled good social skills most of the time by being kind to others, listening, empathizing, and cooperating. Some staff helped children develop appropriate social behavior with peers by helping children talk through conflicts instead of fighting, encouraging socially- isolated children to find friends, or helping children understand feelings of others. Peer interactions were usually positive. Some examples were older children often cooperating and sharing, or children generally playing well together without fighting.

#### *Research Question # 8*

Are there differences in the extent to which developmentally-appropriate program structures are being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight)? An independent t-test was used to test the null hypothesis. There was no statistically significant difference in program structure.

A rating of minimal was recorded for 27.3% of kindergarten teachers and 34.5% scored above minimal on the Early Childhood Rating Scale-Revised.

Program structure was made up of four items. A basic daily schedule that was familiar to the children existed in most classrooms. Written schedules were sometimes posted in the room and generally related to what was occurring. At least one indoor and one outdoor play period occurred daily.

Children were permitted to select materials and companions and, as far as possible, manage play independently. Adult interaction was in response to children's needs. Situations in which children were assigned to centers by staff or staff selected the materials that individual children may have used did not count as free play. Ample and varied toys, games, and equipment were usually provided for free play. Supervision was provided to facilitate children's play by staff's helping children get materials they needed, or helping children use materials that were hard to manage. Supervision was used as an educational interaction by staff helping children think through solutions to conflicts, encouraging children to talk about activities, and introducing concepts in relation to play.

The children were kept together as a whole group most of the day doing the same projects, having stories read to them, or using the bathroom at the same time. There were very few opportunities for staff to interact with individual children or small groups. However, opportunities for children to be a part of a self-selected small group was provided.

Provisions for children with disabilities was used only if a child with an identified disability was included in the classroom. Otherwise, a score for this item was NA. Only 33 of the 55 teachers reported serving students with disabilities in the classroom. In the classrooms serving children with disabilities, modifications were made in the environments, programs, and schedules so that these children could participate in many activities with others. Parents were frequently involved in sharing information with staff, setting goals, and giving feedback about how programs were working. Staff contributed to individual assessments and intervention plans. Children with disabilities were integrated into the groups and participated in most activities. Most staff followed through

with activities and interactions recommended by other professionals such as medical doctors or educators to help children meet identified goals.

*Research Question #9*

Are there differences in the extent to which developmentally-appropriate parent and staff communications are being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight)? An independent t-test was used to test the null hypothesis. There was no statistically significant difference in parent and staff communication. A rating of better was recorded for 72.7% of the kindergarten teachers on the Early Childhood Rating Scale-Revised.

Parents and staff interactions consisted of six items. Parents were typically made aware of the philosophies and approaches practiced by the distribution of parent handbooks, discipline policies, or descriptions of activities. Much sharing of child-related information between parents and staff occurred frequently by informal communication, periodic conferences for all children, parent meetings, newsletters, or available parenting information. A variety of alternatives were used to encourage family involvement in children's program. Parents were often referred to other professionals when needed for special parenting help or for health concerns. Rarely were parents involved in decision-making roles in the school along with staff.

Provisions for personal needs of staff were met by lounges with adult-size furniture and convenient storage for personal belongings with security provisions when necessary. Facilities provided refrigerator spaces and cooking facilities for staff meals/snacks.

Provisions for professional needs of staff were met by access to ample file and storage space and separate office space used for program administration. Space for conferences and adult group meetings were usually satisfactory. Most teachers had access to well-equipped office space for administration with a computer and answering machine in the school office.

Supervision and evaluation of staff was provided to staff both informally and formally. Annual supervisory observation was provided for non-tenured teachers. Written evaluations of performances of non-tenured teachers were shared with staff at

least yearly. Strengths of staff as well as areas needing improvement identified in the evaluation were provided for non-tenured staff. Action was taken to implement the recommendations of the evaluation by training given to improve performance and new materials purchased. Some staff participated in self-evaluation. Sometimes feedback from a supervisor was given in a helpful, supportive manner.

Opportunities for professional growth was sometimes provided through orientation for new staff including interaction with children and parents, discipline methods, and appropriate activities. Some school systems offered in-service training on a regular basis. Some teachers attended monthly staff meetings that included staff development activities. Some support was available for staff to attend courses, conferences, or workshops not provided by the school system by release time, travel costs, or conference fees.

Most teachers, both early childhood and elementary certified, working in public school kindergarten programs, have opportunities for professional growth. Individuals enter the profession with diverse educational qualifications and experience that promotes a system that encourages ongoing professional development for individuals at different levels and in all roles (NAEYC, 1999). Teachers often orchestrate a cohesive community of young learners and take pride in their abilities to create an environment where children with often vastly differing backgrounds, abilities, and needs work together successfully (NAEYC, 1996).

Teachers, both those certified in early childhood and elementary education, are addressing DAP in similar ways in kindergarten classrooms. NAEYC (1996) called for all teachers of young children from birth through age eight to be adequately prepared to demonstrate the knowledge, performance, and disposition specific to their teaching specialization, regardless of their employment setting or their position.

NAEYC (1997) deemed staff qualifications and development appropriate for teachers to be qualified to work with six-through eight-year-olds through early childhood education degree programs or elementary education degree programs with a concentrated course of study in early childhood education. These studies include supervised field experience with the primary-school- age group and required course work in child development and learning, integrated curriculum and instructional strategies, and

communication with families. Elementary or secondary teachers with no specialized training or field experience in working with six-through-eight-year-olds are considered inappropriate for such children even though they are often qualified by the state certification, despite the grade level for which their course work and teaching experience prepared them (NAEYC, 1997).

According to the DAP in Early Childhood, NAEYC (1997), utilization of ongoing professional development opportunities provides teachers the chance to remain knowledgeable and current with respect to best practices and innovations. They have time to become familiar with and adapt new curriculum resources. Opportunities are available for teachers to plan, reflect on their practices, collaborate with colleagues, and work with parents. NAEYC (1997) stated that inappropriate practices concerning certification occurs when teachers participate in continuing professional development to maintain certification, but choose courses that are often unrelated to the primary-school-age group with whom they work. In addition, professional development opportunities for teachers are often fragmented or irrelevant to their work (Bredenkamp, 1997).

#### *Research Question # 10*

Are there differences in the extent to which developmentally-appropriate practices are being implemented in kindergarten classrooms of teachers with early childhood certification (grades pre-kindergarten through fourth) and elementary education certification (grades one through eight) and location (city or county)? There are statistical differences among the means of teachers working in the city and county in personal care routines ( $p=.03$ ) and parents and staff ( $p=.01$ ). Null hypotheses ten and fifteen were rejected (SF  $p=.43$ , PCR  $p=.03$ , LR  $p=.34$ , ACT  $p=.52$ , I  $p=.98$ , PS  $p=.12$  and PARST  $p=.01$ ).

A much higher proportion of teachers in the city school systems reported serving children with special needs in their classrooms. Some school systems do not recommend testing kindergarteners for special education until first grade. The individual appropriateness section of the definition of developmentally-appropriate is often omitted from discussion. Taken at its face value, individual appropriateness should encompass teaching young children with exceptionalities; however, early intervention methods have

often been directed with sequential skills, rather than the more broadly based goals by DAP teachers. Given the move away from behavioral and stimulus/response modifications to a variety of strategies, such as child-initiated tasks and daily routine tasks, there may be more grounds for DAP teachers and special education teachers to work together. However, the debate continues about instructional practices among many teachers of children with special needs and early childhood educators (Isenberg & Jalongo, 1997).

According to the Tennessee State Department of Education Division of Special Education (1993), "Child identification is the first step in the provision of full and appropriate services for children with disabilities. Local school systems are required to identify, locate, and evaluate all children within their jurisdictions, ages birth through twenty-one who may be in need of special education and related services. Early identification is needed to detect a child's disability prior to school age so that appropriate services can be provided for the child and, if warranted, for the family. Longitudinal research has demonstrated that the earlier a child's disability is identified and appropriate services are provided, the less extensive are the problems caused by the disability. The local school system should serve as the disabled child's chief advocate in the provision of appropriate educational services and primary contact for any person who seeks to locate programs and services for children with disabilities."

### Conclusions

In retrospect, I reached the following conclusions:

1. Teacher certification was not found to be statistically significant in the extent to which developmentally-appropriate practices were being implemented in the seven school districts in 55 classrooms in northeast Tennessee.
2. Teachers in the study appeared more likely to exhibit practices that were not resource intensive.
3. Location (city or county) was found to make a difference in the use of developmentally-appropriate practices in kindergarten classrooms in the areas of personal care routines and parent and staff interactions.

## Implications

Many researchers support the belief that the training of early childhood educators is critical to DAP. From other studies we can gather that individuals with some level of training in DAP are more likely to implement it in their classrooms. In this study, both early childhood and elementary certified teachers provided DAP in kindergarten classrooms at about the same level.

Many programs have been developed and more are in the process of being developed to train individuals to work with young children using developmentally-appropriate practices. However, DAP for kindergarten classroom teachers may be hindered by the structure of the organization.

Sometimes teachers are trained in DAP, but because of expectations of supervisors or peer pressure, teachers may revert to the way they were taught as children in school versus what they learned in their teacher preparation programs. The way teachers were instructed in elementary school worked for them, and they sometimes assume it will work for the children they are serving. Typically, people in the teaching profession were successful in school. So, teachers may resort to traditional methods of teaching instead of DAP. In addition, teachers will generally follow the support and reward system set forth by the school principals.

If a DAP teacher is hired in a school or school system where DAP is promoted and supported, they are more likely to teach DAP no matter what their certification. The same is true for teachers hired in a developmentally inappropriate school or school system. The values of the school or school system are fostered by the leadership of the organization. Staff development funds are funneled in areas deemed important by the leader. Continual training is important to support the growth of all teachers regardless of their certification.

Implementation of four interconnecting items has bridged some gaps between early childhood and elementary teachers: linking/bridging-emphasizing what to teach; alternatives-emphasizing how to teach; reflecting-emphasizing why to teach; and community and family involvement-emphasizing who teaches (Isenberg & Jalongo, 1997).

## Recommendations

As a result of this study the following recommendations are offered:

1. Further quantitative and qualitative studies should be conducted in other kindergarten classrooms in northeast Tennessee, that contain both early childhood and elementary certified teachers, to determine which produce developmentally-appropriate practices in kindergarten classrooms.
2. Research should be conducted to develop a new classroom observation and rating tool for identifying developmentally-appropriate characteristics in kindergarten classrooms in the public school setting.
3. Longitudinal studies should be conducted comparing developmentally-appropriate practices and teacher certification on the progress of children.
4. Research should be conducted to determine the knowledge base about DAP of administrators and elementary school principals.
5. A study based on randomly selected teachers in both groups early childhood and elementary education might provide a more accurate picture of the DAP in northeast Tennessee. In this study the teachers were selected by the elementary supervisor or principal or were volunteers.

## Recommendations for Practice

1. Based on such additional findings as recommended above, decisions need to be made about appropriate training for elementary principals and central office personnel who make decisions about young children and their education.
2. Awareness should be developed by principals and kindergarten teachers about the use of developmentally-appropriate practices in kindergarten classrooms.
3. Employment consideration should be given to the individual with specialized training in early childhood for kindergarten teaching positions.

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## APPENDICES

### APPENDIX A

#### Institutional Review Board Informed Consent Document

Principal Investigator: Tracey Marie Cook

Title of Project: Dissertation-Relationship Between Teacher Certification and Developmentally-Appropriate Kindergarten Classrooms in Northeast Tennessee

This Informed Consent will explain research project for which I am requesting your participation as a kindergarten classroom teacher. It will be important that you read this material carefully and then decide if you wish to be a volunteer. There is no pressure for you to participate in this project.

#### PURPOSE

The purpose of this quantitative research study will be to determine if there is a relationship between teacher certification and developmentally-appropriate kindergarten classrooms in Northeast Tennessee.

#### DURATION

Classroom observation should take no more than two hours.

#### PROCEDURES

The basic procedures for the research project will be to observe in kindergarten classrooms during morning school hours. This will be arranged in advance with you. The observation tool will consist of 43 items categorized into seven subscales on the Early Childhood Rating Scale-Revised.

#### POSSIBLE RISKS/DISCOMFORTS

No risks or discomforts should be associated with this research. Some kindergarten teachers may find it uncomfortable to be observed or asked about their teacher certification.

#### CONTACT FOR QUESTIONS

If you have any questions about your right as a research participant, you may call Ms. Tracey Marie Cook at (423) 652-9209, Dr. Louise MacKay at (423) 439-7615, or the Institutional Review Board at (423) 439-6134.

#### CONFIDENTIALITY

Every attempt will be made to see that the study results are kept confidential. You will not be identified in anyway. The researcher will store a copy of records for at least 10 years at the Bristol Tennessee Board of Education building in Room 213 at the completion of the research. The results of this study may be published and/or presented without naming participants. Although rights and privacy will be maintained, the

Secretary of the Department of Health and Human Services, the East Tennessee State University (ETSU)/V.A. Medical Center Institutional Review Board, the Food and Drug Administration, and the ETSU Department of Educational Leadership and Policy Analysis will have access to the study records. The records will be kept completely confidential according to the current legal requirements. They will not be revealed unless required by law or as noted above.

#### COMPENSATION FOR MEDICAL TREATMENT

ETSU will pay the cost of emergency aid for any injury which may happen as a result of you being in the study. They will not pay for any medical treatment. Claims against ETSU or any of its agents or employees may be submitted to the Tennessee Claims Commission. These claims will be settled to the extent allowable as provided under TCA 9-8-307. For more information about claims, call the Chairman of the Institutional Review Board at ETSU at (423) 439-6134.

#### VOLUNTARY PARTICIPATION

The nature, demands, risks, and benefits of the project have been explained as well as are known and available. I understand what my participation involves. Furthermore, I understand that I may ask questions and withdraw from the project at any time, without penalty. I have read, or have had read to me, and fully understand the consent form. I sign it freely and voluntarily. Your study record will be maintained in the strictest confidence according to the legal requirements and will not be revealed unless required by law or as noted above.

---

Teacher's Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Witness \_\_\_\_\_ Date \_\_\_\_\_

APPENDIX B

Director of Schools Permission Request Letter

March 22, 2001

Mr. XXXXXX  
XXXXXX County Schools  
405 West College Street  
XXXXX, TN XXXX

Dear Mr. XXX:

I am a student at East Tennessee State University in Johnson City, Tenn., currently pursuing a doctorate in Educational Leadership and Policy Analysis. For my dissertation, I am conducting a study to determine if a relationship exists between teacher certification (Elementary vs. Early Childhood) and developmentally-appropriate kindergarten classrooms.

With your permission, I would like to observe kindergarten classrooms using the Early Childhood Rating Scale-Revised. Each observation will last approximately two and half hours . Upon receiving your permission, I will contact the building administrator to discuss my visiting the school to observe in kindergarten classrooms. I have enclosed a copy of the instrument.

I would like to receive your response to this request as soon as possible. You may respond via e-mail, phone, or mail using the self-addressed stamped envelope. Please let me know if you have any questions or need additional information.

In appreciation,

Tracey Cook

APPENDIX C

Teacher Participation Letter

Tracey Cook  
517 Ridgeview Circle  
Bluff City, TN 37618  
(423) 538-5974 or (423) 652-9209  
E-mail: cookt@btcs.org

February 9, 2001

Dear XXXXX:

I am a student at East Tennessee State University in Johnson City, Tenn., currently pursuing a doctorate in Educational Leadership and Policy Analysis. For my dissertation, I am conducting a study to determine if a relationship exists between teacher certification (Elementary vs. Early Childhood) and characteristics of kindergarten classrooms.

With your permission, I would like to observe in your kindergarten classroom using the Early Childhood Rating Scale-Revised. The observation will last approximately one hour. There will be no time requirements for classroom teachers or interference with instruction.

Call, mail, or email me a list of dates and times that are convenient for you. Please let me know if you have any questions or need additional information.

System: \_\_\_\_\_ School: \_\_\_\_\_

Name of Kindergarten Teacher \_\_\_\_\_

Date & Time of Observation \_\_\_\_\_

Sincerely,

Tracey Cook

APPENDIX D

Demographic Survey

Informal Teacher Survey

1. School name

2. Highest degree earned BS BA MS MEd PhD EdD

3. Major/ Area of Specialization

- 1. Elementary Education
- 2. Early Childhood Education
- 3. Special Ed

4. How many years have you taught?

5. What is the organizational structure of your classroom?

- K
- K-1
- K-2
- K-3

6. Please check the longest block of uninterrupted time you have in your class for meaningful instructions or activities

- \_\_\_\_\_ 15 minutes
- \_\_\_\_\_ 30 minutes
- \_\_\_\_\_ 45 minutes
- \_\_\_\_\_ 1Hour
- \_\_\_\_\_ 2 Hours

## VITA

### TRACEY M. COOK

- Personal Data:      Date of Birth: December 2, 1969  
Place of Birth: Roanoke, Virginia  
Marital Status: Single
- Education:            Public School, Bristol, Tennessee  
                            East Tennessee State University, Johnson City, Tennessee;  
                            B.A., 1993, Elementary Education  
                            East Tennessee State University, Johnson City, Tennessee;  
                            M.Ed., 1997, Early Childhood Development  
                            East Tennessee State University, Johnson City, Tennessee;  
                            Ed.D., 2002, Educational Leadership and Policy Analysis
- Professional  
Experience:            Kindergarten Teacher, Sullivan County Schools; Bluff City,  
                            Tennessee, 1994-1995  
                            First Grade Teacher, Bristol Tennessee City Schools; Bristol,  
                            Tennessee, 1995-1996  
                            Early Childhood Teacher, Bristol Tennessee City Schools;  
                            Bristol, Tennessee, 1996-2000  
                            Play Therapist, Tennessee Early Intervention, East Tennessee State  
                            University; Johnson City, Tennessee, 1997-2002  
                            Adjunct Professor, East Tennessee State University;  
                            Johnson City, Tennessee, 1999-Present  
                            Curriculum Consulting Teacher, Bristol Tennessee City Schools;  
                            Bristol, Tennessee, 2000-Present
- Professional  
Presentations:        Southern Early Childhood Conference, Louisville, Kentucky  
                            Special Education Conference, Gatlinburg and  
                            Knoxville, Tennessee  
                            East Tennessee State University, Johnson City, Tennessee  
                            Title I Conference, Gatlinburg, Tennessee  
                            Rotary Club of Bristol Tennessee